
***The Early Identification
and Treatment of
Communication
Impairment in Infancy***

Volume 2

Appendix

Volume 2

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APPENDIX A

APPENDIX A

NORMAL COURSE OF DEVELOPMENT IN WESTERN SOCIETIES

The following discussion attempts to trace the course of social development over the first twelve months in an attempt to gain insight into the complexity of social development and its interaction with communication development. This thesis proposes that because of the polysystemic nature of development, the course of social development does not follow an orderly staged path. As with the other systems previously discussed, at any point in time the infant's social system will vary in its degree of development and the extent of its relationship with each other component system (cognitive, linguistic, motor etc). Internal and external variations depend on a crucial interaction between the child's biological endowments and the environment in which he lives. As the child grows and matures, not only does his environment change, but so too does his interaction with his environment change as his skills develop. Without compromising the dynamic interactional model of development proposed and respecting the individuality of each child, it is nonetheless possible to make generalised statements concerning the sequence of social development in infant in Western society.

AT BIRTH:

In the immediate post birth period, the most urgent requirement for the caregiver and infant is to regularise the infant's basic biological processes such as feeding and waking-sleeping states and to harmonise these with environmental requirements, particularly the caregivers own waking and sleeping patterns (Schaffer, 1984). Initially, the infant's states fluctuate rapidly. The infant has short sleep periods randomly distributed throughout the day, interspersed with even shorter periods of wakefulness. Sander et al (1979) who found that in

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the first few days following birth, demand fed babies who roomed in with their mothers, had disorganised sleep/ wake cycles. The occurrence and duration of the various stages of the sleep/ wake cycle were initially irregular with considerable periods of crying and motility. At this point the intervention time by the caregivers was substantial. By the end of the first postnatal week, they found that coordination between caregiver activity and infant state was already apparent. More than half of the longest sleep periods occurred during the night while motility and crying peaks shifted to daytime periods. At the same time caregiving interventions diminished and when they occurred, they were more successful in terminating crying and in settling the infant back to sleep. Thus the mother gradually "shaped" the infant's activity cycle to conform to her own requirements. In contrast, where feeding was scheduled (that is, governed by the clock and not the infant's condition), the emergence of day/night differentiation did not occur as smoothly, and both restlessness and crying during the day time were found to remain at a high level.

Mutual adjustments of the caregiver and infant are evident from their earliest interactions. The most demonstrable consequence of mutual experience according to Schaffer (1984) lies in the qualitative nature of the meshing process as it undergoes continual modification with the child's growing social and cognitive competence and in the increasingly complex forms of communication used. Schaffer (1984) argues that the nature of the infant's preadaptation to respond to other people can be seen in the inherent perceptual biases that predispose the infant to selectively attend to other human beings and in the variety of response tendencies which are geared to mediate the child's interactions to others (refer to Chapter Five).

The infant's caregivers are initially actively involved in helping the infant to master the task of regulating his internal state. As the infant develops, the form of the support provided

by the caregiver changes to correspond to the infant's new requirements. Schaffer (1984) argues that each phase brings a particular kind of developmental task that caregiver and infant must jointly confront. He suggests that although the impetus that sets periodic reorganisation into motion may stem from the child's inner programme establishing new goals, the pursuit of those goals is a joint enterprise. The infant acts as a pacer but the caregiver is required to organise the infant's world in such a way as to help him to successfully accomplish the tasks of that period. In time the caregiver's involvement becomes less direct as she is able to increasingly give responsibility to the infant for tasks previously tackled jointly; at all stages, however, the nature of her interactive behaviour must change in tandem with his. Schaffer (1984) argues that the caregiver and infant are a mutually accommodative interactive system, but how that accommodation is achieved varies from phase to phase according to the particular circumstances prevailing at the time.

The results of a study by Cooper and Aslin (1990) suggest that caregivers can influence infant attention by the nature of the speech they direct toward them. They found that both two day old and one month old infants preferred infant directed speech to adult directed speech. This is supported by the results of other studies (Snow, 1994).

As indicated in Chapter Five, the new born infant is born with impressive visual and auditory perceptual competence. The initial source of attraction lies in the number of primitive characteristics inherent in faces such as movement, contour, density, complexity, solidity and symmetry (Brennan, Ames and Moore, 1966; Greenberg, 1971; Greenberg, O'Donnell and Crawford, 1973; Bornstein, Gross and Ferdinandsen, 1980; Fisher, Ferdinandsen and Bornstein, 1981; Nelson and Horowitz, 1980; Karmel, 1969). These stimulus features that govern infant attention to social patterned stimuli are the same as those governing non-social stimuli. However, together these characteristics ensure that the infant is visually oriented to his

social partners (particularly his mother) from the beginning. As the infant's visual focus is seven and one-half inches at birth, the infant is in a prime position to observe his mother's face when held in the feeding position.

By necessity, feeding is one of the earliest interactive experiences between mother and infant (Schaffer, 1984; Kaye, 1977). Schaffer argues that the success of early feeding required mutual adaptation of both the infant and mother. Both the mother and the infant need to be oriented to each other for feeding to be successful. The mother engages in a number of activities designed to facilitate feeding. She holds the infant in such a way as to give him easy access to the breast or bottle, and she remains facially oriented to the infant to closely attend to the infant's behaviour, she interprets his signals and times her own responses to his. These behaviours enable her to gradually adapt to the infant's individuality and in time to produce the close fit that is necessary for successful feeding (Kaye, 1977; Schaffer, 1984). In turn the infant also orients toward the mother. Blauvelt and McKenna (1961) found that the orientational responses of newborn infants are well coordinated with those of the mother. This is particularly evident in the use of the rooting reflex to assist attachment (Woolridge, 1986; Schaffer, 1984; Kaye, 1977). The infant provides an orderly temporal response pattern arranged in sequences of activity and inactivity that enable his mother to meld her behaviour with his.

Kaye (1977) suggests that the temporal patterning of sucking is highly suited for incorporating into a more general social interaction sequence. She found that mothers tended to interact with their infants in precise synchrony with the burst/ suck pattern. The mother sets up a turntaking pattern typical of other early forms of interaction by fitting in with the infant's natural sucking rhythm, responding to his signals such as ceasing to suck, and intervening during the pauses between sucking bursts. The infant's behaviour is thus structured in such a

way as to facilitate coordination with her behaviour. Thus the turntaking characteristic found in most dyadic exchanges between human beings is therefore evident early in the infant/caregiver partnership. Schaffer (1984) concluded that social preadaptation determines the nature of the infant's initial encounters with other people.

In studying the jiggling behaviours of mother's of new born and two week old infants during breast and bottle feeding, Kaye and Colleagues (Kaye, 1977; Kaye and Wells, 1983; Kaye and Fogel, 1980) found that jiggling did not occur frequently but when it did, it tended to occur during pauses in sucking. During the bursts the mother was generally quiet and inactive so as not to interfere with the infant's sucking. The mothers interpreted the cessation of sucking as a signal for her to respond and she inserted her own activity into the intervals between the infant's action bursts. The mothers claimed that they were using the jiggling to get the infant to start sucking again. Interestingly, Kaye found that jiggling actually lengthened the duration of the pause, and delayed the onset of the next sucking burst. This pattern held true so long as the mother continued to jiggle. However, when the mother only jiggled momentarily then stopped, the infant was more likely to begin a burst of sucking than in either the no jiggle or the continuous jiggle condition. Kaye believes that the pattern that develops (suck-pause, jiggle-stop, suck-pause, jiggle-stop), is a precursor to later forms of social dialogue, although the turn taking is predominantly one sided at this stage. Schaffer (1984) argues that although the pattern has the appearance of turntaking, it is an illusion created by the mother's ability to adapt to the infant. This view is supported by Hayes (1982). Bruner (1983) suggests that through these behaviours, the mother establishes a frame within which the infant can operate.

"Thus the mother allows herself to be paced by the infant. She fills the pauses between his response bursts and to do so successfully she needs, of course, sensitivity and an exquisite sense of timing" (Schaffer, 1977 p12).

A similar pattern to that reported by Kaye was found by Field (1977a) in a study of three and a half month old infants. Maternal stimulation of these older infants again occurred mainly during nipple out rather than nipple in periods. However, a much less regular pattern occurred in the feeding behaviours of high risk infants. The feeding behaviours of these infants were less organised, the infants were more distractible and the mothers had to spend more time coaxing them even during the nipple in periods. Schaffer suggests that where the infant's temporal patterning is disturbed as a result of organic factors such as prematurity, the infant is less predictable to the mother and clashes between the behaviour of the infant and mother consequently occur.

TWO MONTHS OF AGE:

At around two months of age, the orientation of the infant changes largely as a result of changes in his visual skills. There is a marked increase in the infant's attentiveness to the external world, particularly with reference to other people. At this stage the infant uses vision as a means of exploring his environment while the visual framing used by his mother ensures social contact when the infant changes attention from the environment back to her. Thus the mother provides a **frame** within which the infant's gaze may cycle to and fro. Stern (1974) found that the mother has the responsibility for initiating and terminating gazing. The mother is ready for interaction but to a certain extent it is the responsibility of the infant as to whether or not the interaction will occur. Stern also found that infant gazes are briefer than those of caregivers and suggested that biologically determined limits may initially regulate the alternation of gazing to and gazing away periods. Schaffer (1984) suggests that mothers use the infants' gaze at their face as a cue to begin stimulation and gaze away as a cue to cease stimulation, thereby helping the infant to maintain optimal arousal (this proposition is

supported by Hayes, 1980). Thus they continually adjust the timing, nature and intensity of the stimulation that they provide.

Hayes (1980) and Schaffer (1984) suggest that the regulation of mutual attention and responsiveness to face-to-face situations becomes a central theme at this time. As the infant is absorbed in the task of learning about his caregivers, direct face to face encounters are the principle contexts for social interaction and enable the infant to become more acquainted with the physical characteristics of the caregiver and perfect the art of fitting his own behavioural flow to that of his caregiver. As previously discussed, social interactions in western middle class societies occur primarily in the context of face to face encounters whereas in other societies such as Kaluli people, face to face encounters are unacceptable (Ochs and Schieffelin, 1983).

Developments around this period lead to the infant's discovery of his caregiver (Wolff, 1963; Bigelow, 1977). As the infant's visual system matures and through constant exposure to other people, the infant becomes increasingly capable of processing more information about people and begins to discriminate among them (refer to Chapter Five). Research shows that infants begin to recognise the human face as a familiar set of invariantly positioned features (Haaf and Bell, 1967; Haaf and Brown, 1976; Maurer and Barrera, 1981) soon after they begin to systematically scan the internal features of patterned stimuli (Salapatek and Kassen, 1966). Miller (1983) contends that this understanding is important to higher level knowledge of faces such as discrimination and recognition of specific persons, perception of facial expressions and related classificatory skills.

Once infants begin to fixate and scan internal facial features, the most preferred feature(s) with this configuration is the eyes (Owens, 1984; Miller, 1983). The eyes provide a very rich source of affective/ communicative signals and thus this attraction to the eyes can be

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seen as an important learning experience (Miller, 1983). Wolff (1963) found that as infants began to fixate on features inside the face such as the eyes, mothers perceived that their infants made "real" eye contact for the first time and began to treat them as real people. This resulted in marked changes in the quality of the interaction with the caregivers and the kind of treatment offered to the infants. The mother frequently interprets eye contact as a sign of interest or attention. Harding (1983) stresses the importance of eye contact as a major method used by infants to initiate contact. This is also supported by Jones (1980). Schaffer (1984) argues that with the development of the attentional process, there is a shift so that the parent must be prepared to offer a different kind of stimulation to the infant, one that focuses more on his emerging interests in the outside world, rather than on his inner condition as was previously necessary.

Throughout the course of the infant's development, changes in other systems continually impact on the development of the infant's social system. For example, Kuhl and Meltzoff (1983) suggest that the ability of eighteen week old infants to detect a correspondence between aural and visual speech information may serve to direct the infant's visual attention to the speaker and play a role in the acquisition of vocal turntaking (Stern et al, 1975; Bruner, 1975; Kuhl, 1983). Vocal turntaking at this point has similarities to the feeding situation. It is brought about by the mother's action in skilfully inserting her turns in the pauses between the infant's bursts of vocalisations. Mothers are highly attentive to infants in face to face encounters and can therefore time their vocal interactions in such a way as not to interrupt the infant. The mother allows herself to be paced by the infant.

FIVE / SIX MONTHS OF AGE:

At around five months of age the infant's newly emerging manipulative skills bring about a shift of attention from people to objects. In turn, the mother uses a variety of

procedures to share objects of interest with the infant. How these are incorporated into social interactions and ensure topic sharing is a new issue for the caregiver-infant dyad. During early face to face interactions between the infant and caregiver the topic of the interaction arises from within the dyad. As the infant develops the topic of social interactions takes on a more external focus.

Research has shown that many of mother's verbal references to particular toys is timed to co-occur with either the infants' or mothers' manipulation of the toy (Schaffer, 1984). Again the mothers watch intently and closely synchronise their speech with the ongoing manipulative activities. Labels are supplied to the infant at a point when the infant's attention is directed toward the object (refer to Mervis and Rosch in Chapter Three on the development of categorisational skills). Thus Schaffer argues that language is closely tied to the nonverbal context as defined by the infant's own behaviours. He makes the point that long before infants become verbally competent, caregivers use speech when interacting with them. He argues that language is used as a natural means of relating to infant despite the fact that they cannot comprehend yet. The nature and timing of language is geared to the infant's intentional capacities (Snow, 1977; 1994) and synchronised with their ongoing behaviours at the time (Messer, 1978).

Hayes (1980) asserts that early engagements of the mother and infant have important structural similarities to later phases of social development. At around six months of age, infants begin to participate in complex reciprocal games (Bruner, 1977; Bruner, 1983; Sander, 1975). He suggests that this development corresponds to the development of early attachment behaviours (Ainsworth, Bell and Stayton, 1974; Bowlby, 1971).

The infant's developing cognitive skills free him from the restriction of functioning within separate here and now events involving other people. The infant becomes increasingly

capable of uniting a series of individual responses into interactive sequences and relating causal events. As he begins to anticipate future goals and to develop plans toward achieving those goals, his behaviours take on increasingly intentional characteristics (Bates et al, 1979; Harding, 1983). Other people come to be represented as individuals in their own right, and the first indications that the infant has focused his attachment behaviour on a specific individual begin to emerge (Schaffer and Emerson, 1964). Attachment behaviours emerge from a history of many months of interacting on a daily basis with the people on whom their attachments come to be focussed. Prior to this time, research has shown that the attachment behaviours of infants are indiscriminate. These development in attachment behaviours again reflect the complex interrelationship between cognitive and social development (Ainsworth, Bell and Stayton, 1974; Bowlby, 1971).

It is significant that the emergence of attachment behaviours to specific individuals occurs at around the same time as the infant becomes increasingly mobile, again reinforcing the protective function of attachment behaviours (Bowlby, 1971). The developing infant has to develop a balance between attachment and exploration. As Ainsworth et al (1974) state:

"It is an advantageous arrangement for an infant to be activated to explore without straying too far from an adult who can protect him if he encounters danger, for him to be programmed to maintain a reasonable degree of proximity on his own account without requiring that the adult be always alert to do so and for him to be activated to seek quickly a close approximation or contact should he become alarmed" (p104)

Newman and Newman (1991) and Schaffer (1984) suggest that there is a significant bi-directional relationship between the growth of social attachment and the achievement of object permanence. Some qualities of maternal care have been found to be associated with the emergence of object permanence. For example, in the period preceding the development of object permanence, the caregiver contributes to the acquisition process by setting up and flexibly managing many different experiences for the infant (Bruner and Sherwood, 1976).

Bruner and Sherwood (1976) found that during the early peekaboo routines of mothers and infants, hiding is carried out in a manner which is adapted to the infant's capabilities and which also challenges further achievements. Another study carried out by Chazan (1981) found that infants of parents who communicated with them frequently, who expressed positive feeling toward them and who actively stimulated their achievements were more likely to apply the schema of object permanence to people as well as objects. Similarly, Ainsworth et al (1991) found that infants who have enjoyed a harmonious attachment relationship with their mother figure become well socialised. Once the infant has a sound understanding of object permanence, the fear of the caregiver leaving and not returning is reduced, enabling the infant to explore and interact with his environment more. Schaffer (1984) suggests that the upset experienced by the infant on separation from this mother reflects the formation of permanent social bonds. As indicated in Chapter Three, the emergence of the concept of object permanence frees the infant from a reliance on what he can see and the here and now. Ramsay and Campos (1978) argue that the ability to hold the image of the object in the mind is the first step in the emergence of complex representational thinking.

EIGHT MONTHS OF AGE:

Thus the emergence of the ability to coordinate object and people at around 8 months of age marks a significant change in the infant's interaction with others within the environment. It also marks the beginning of intentional communication. The infant begins to integrate diverse features of people and to interact with them via objects and other external topics. Bates et al (1979) found that at this stage infants begin to use objects to attract attention of other people and to use people to get objects that they wanted. Initially the exchanges are hesitant with the infant constantly checking between the object and mother.

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"The gradual growth in complexity and coordination of object and social schemes seems to represent the evolution of the infant's increasing clarity in expressing a communicative purpose or function" (Carlson and Bricker, 1982 p298).

The infants increasing ability to coordinate action and his increasing knowledge of objects and people is clearly evident in the development of pointing and eye gaze. Until at least eight or nine months, infants are not able to follow where another person points or looks and then initially only under specific conditions (Collis, 1977; Murphy and Messer, 1977). Prior to this they tend to look at the finger rather than the object because their attentional skills are initially defined by the spatial relationship between themselves, the target and the finger. However, by the end of the first year not only does the infant come to view finger pointing and gazing by another person as meaningful signals, he is also beginning to use finger pointing himself to direct the attention of another person (Murphy and Messer, 1977). Initially the infant points for himself, that is, he points to an object without checking whether the other person is following the gesture (Werner and Kaplan 1963). Bates et al (1979) found that at around eight to nine months infants began to coordinate pointing and alternating eye contact. Murphy and Messer (1977) suggest that pointing for another indicates the infant's desire to share the object with another person.

TEN TO TWELVE MONTHS OF AGE:

Not surprisingly, Eckerman and Whatley (1977) found that there were significant differences in the interaction between infants and other people (both adults and peers) when toys were and were not present. They also found that infants as young as ten months of age were as responsive to social verses nonsocial aspects of a novel setting as older infants, however, both age groups exhibited different types of behaviours when toys were present or absent. As expected, when toys were available, social actions tended to revolve around the toys, they showed and exchanged toys and spent more time synchronously manipulating similar

play materials. In contrast, when the toys were absent, the infants contacted or stayed near the other person more often, they smiled at and gestured to one another and duplicated each other's actions. Interestingly, they found that the infants watched each other as often when toys were present as when they were absent.

Eckerman and Whatley (1977) also found that the infants displayed differential behaviours between peers, their mother and unfamiliar adults. The infants exhibited frequent behaviours toward peers and their own mother, however, they exhibited infrequent behaviours toward an unfamiliar adult regardless of whether toys were present or not. These findings are consistent with the studies on infant attachment behaviours and the development of object permanence skills. The behaviours of the infants toward their peers (smiling, gesturing, showing and offering of toys) led Eckerman and Whatley (1977) to propose that the infants treated their peers more like people than toys, thus were able to differentiate them from inanimate objects. They suggest that the presence and actions of other people may influence the ways in which an infant explores his inanimate world, a view clearly supported by Whiting and Edwards (1988). Eckerman and Whatley speculate that the nature of a peer's actions upon objects may be a major source of his attraction facilitating diverse forms of social interaction.

The results of a study by Dunham and Dunham (1990) support the functional significance of a reciprocal turntaking social structure. They found that the amount of time in which infant and caregivers spent in a state of vocal turntaking was significantly related to both the infant's affect during the interaction and infant's performance on subsequent non-social contingency tasks. Infants in dyads that exhibited a small amount of vocal turn-taking exhibited less smiling and more gaze aversion during their interactions and subsequently displayed response strategies that reduced the density of stimulation during non-social contingency tasks.

The data suggests that vocal turntaking was more important than the total amount of maternal vocal stimulation directed at the infant.

CONCLUSION:

The preceding account clearly demonstrates that the infant in Western societies clearly becomes a social being during the first twelve months of life. Cicourel (1981) contends that by the time he is one year of age, the infant has acquired a good sense of social structure. He is able to manipulate the caregiver as well as be manipulated. As his social and cognitive skills have developed a more symmetrical relationship with the caregiver has emerged based on reciprocity and characterised by intentionality. The infant has learnt the basic rules involved in routines, and that the roles of giver and receiver are reciprocal and exchangeable. Not only is his behaviour much more flexible, coordinated and integrative (Schaffer, 1984), he is able to monitor his own activity and adjust reactions according to the perceived effects on the environment.

As Schaffer (1984) argued, there appears to be two main themes to social development. Firstly, development is necessarily a joint enterprise of the child and caretaker and secondly:

"any account of the child's progress through the early years must be as much concerned with the adult's as with the child's role; and the developmental progress is not so much a matter of gradual quantitative accretion but more one of sequential reorganisations that periodically overtake the child's mental life" (Schaffer, 1984 p vi)

APPENDIX B

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Hirsch, Jansky & Langford (1964)	<ul style="list-style-type: none"> *106 subjects *51 preterm BW ranged from 1000-2239gms *55 full term BW>2500gms 	<ul style="list-style-type: none"> *5-8yrs; mean age 5.2 yrs *No indication of whether ages corrected or not 	<ul style="list-style-type: none"> *Preterm infants part of a follow study, * Assessed regularly until 3 yrs of age; *Controls tested in one session. *Excluded: children from bilingual backgrounds; IQ lower than 85 or higher than 119; those with neuromotor involvement; grossly emotionally disturbed children 	<ul style="list-style-type: none"> *Stanford-Binet Intelligence scale; 	<ul style="list-style-type: none"> *IQ of control group ranged from 92 to 116; *IQ of preterm group ranged from 85 to 119. 	<ul style="list-style-type: none"> *15 areas studied: Tapped patterns; auditory memory span; Wepman's auditory discrimination; PPVT; language comprehension; articulation; resistance to articulation disintegration; word finding; story telling; number of words used; mean length of 5 longest utterances; sentence elaboration; grammatical errors; definitions & categories. 	<ul style="list-style-type: none"> *Preterm infants had sign. poorer scores than term infants on 7 of 15 tested areas : tapped patterns, language comprehension, word finding; number of words used, mean of 5 longest sentences, sentence elaboration, and definitions. *Preterm infants did not score sign. higher than full term group on any measures. *No sign. diff b/w groups on two measures of articulation; PPVT; Auditory discrim; auditory memory span; story telling or categories. 	<ul style="list-style-type: none"> *No sign. diff. in education levels of families of 2 groups, ed. status thus not considered crucial to outcome of study. * Authors argue that preterm infants have lingering neuro-physiological immaturity & that their performance in areas of oral language investigated is related to this immaturity. 	<ul style="list-style-type: none"> *No indication as to whether preterm infants scores were corrected *Lack of standardised communication assessments to assist comparison with other studies. *No indication if any had received therapy *Children with IQ lower than 85 or with neuro-developmental involvement excluded from study but no indication of numbers from both groups, this may have more positively skewed outcomes
Werner, Simonian, Bierman, & Fench. (1967).	<ul style="list-style-type: none"> *Population based study *670 randomly selected from all live births in 1955 	*2 yrs	<ul style="list-style-type: none"> *Complete paediatric & psychological exam ; assessment of perinatal complications; physical status ; assessment of environment through interviews with Mo; SES family stability ;estimate of Mo IQ (conducted by Social worker & Psychologist); *Divided into 4 groups by perinatal complications 	<ul style="list-style-type: none"> *Psychologist rating of Intelligence *Cattell IQ *Vineland Social Quotient 	<ul style="list-style-type: none"> *Proportion of children with IQ<85 increased with increased perinatal stress; *86% of children with severe perinatal complications had IQ <100 cf 43% of children without complications *21% of infants with severe perinatal complications had IQ more than 1 SD below mean cf only 8.6% of those with mild or no perinatal complications *Psychologist rated 29% of severe perinatal complications as below normal cf only 12% with no or mild complications 	*Not assessed	*Not reported	<ul style="list-style-type: none"> *16% of sample rated below normal in intellectual status, most were low in only one area. *With increasing perinatal stress percentage of children low in more than one area increased *The more severe the perinatal complications & the more unfavourable the environment in which the child lived during first 2 yrs the more retarded the development at 2 yrs *Detailed definitions of perinatal complications *Quality of home environment sign effect on mental and social outcome 	<ul style="list-style-type: none"> *Unclear if premature infants assessed at corrected/ uncorrected age; *Lack of other assessments-language etc *Limited length of follow-up

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Willerman et al 1969	<ul style="list-style-type: none"> *Population based study *3037 white children *Excluded African American congenital abnorm. such as Down's syndrome 	*8 months to 4yrs	<ul style="list-style-type: none"> *Socioeconomic index (SEI) developed, based in parents ed.; occupation and family income. *Sample divided into 3 groups according to SEI -low (403), -middle (1750) -high(884) 	<ul style="list-style-type: none"> *Bayley Scales of Infant Development MDI & PDI at 8 months *Stanford Binet at 4 yrs 	<ul style="list-style-type: none"> *Females obtained significantly higher scores on Bayley at 8 mths *In the low SEI group, 4 yr old who were most advanced at 8 mths did not obtain a mean IQ as high as 4 yrs olds from high SEI level who were "retarded" as infants *Larger range of IQ among low SEI- Authors suggest that this indicates greater vulnerability of poorly developed infants to the adverse effects of the environment *Among infants advanced at 8 months, frequency of occurrence of IQ<79 was unrelated to SEI. For infants retarded at 8 months, SEI was related to a low IQ at 4 yrs *Retarded infants were 7x more likely to obtain an IQ of <79 at 4 yrs if they came from the lowest SEI than if they came from the highest. 	*No specific measures	*Not reported	<ul style="list-style-type: none"> *Authors suggest that fact that high SES can mask constitutional deficits points to the necessity of taking SES into account when gauging the effects of infant experience such as perinatal stress *Infant developmental status bore little relation to IQ at 4 yrs 	<ul style="list-style-type: none"> *Limited details on the SEI *No information of the functional skills of these infants *Lack of perinatal information on the subjects including birth weights etc *No communication assessments reported
Fitzhardinge & Steven 1972	<ul style="list-style-type: none"> *96 full term SGA: *36AGA *No full term controls 	*5-11 yrs			<ul style="list-style-type: none"> *SGA: Male Mean IQ=95 Female IQ=101 *AGA: Male Mean IQ=106 Female IQ=102 		<ul style="list-style-type: none"> *33% of males & 26% of females had a speech impairment, 31% of male and 18% of female persisted into school age. *control 7% males & 5% of females had speech impairments - all were normal by school age 	<ul style="list-style-type: none"> *25% of SGA had minimal cerebral dysfunction (hyperactivity, short attention span, learning difficulties, poor fine motor coordination). 	*No full term controls

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Smith et al 1972	<ul style="list-style-type: none"> *301 subjects of Negro background, *Randomly selected from a larger population of Negro children 	<ul style="list-style-type: none"> *Birth to 7 years (scores corrected) 	<ul style="list-style-type: none"> *Population based study *Paediatric neuro., exams at birth, & 1 yr *Psych evaluations at 8 mths, 4 & 7yrs; *neuro exams at 7 yrs; *2 extreme criterion groups empirically defined according to results of canonical correlation analysis on psych test criterion scores at 7 yrs, abnormal /normal *Complex 2 group discriminant function analysis performed on 2 groups 	<ul style="list-style-type: none"> At 7 years: *WISC: VIQ PIQ *Bender-Gestalt Visual Motor Test *Good enough Draw-a-person *Finger Recognition Test *Spelling, Reading & Arithmetic subtests of Wide range achievement test *Scores adjusted for C.A. 	<ul style="list-style-type: none"> *Mean for entire group reported: WISC VIQ=85 WISC PIQ = 86 *Sign difference between extreme groups based on criterion 	<ul style="list-style-type: none"> *Auditory-vocal subtest of the ITPA 	<ul style="list-style-type: none"> *Not reported *Mean for entire group reported 	<ul style="list-style-type: none"> *Results suggest that long range prediction of ability perform. using information from prenatal, perinatal & postnatal dev. periods is feasible: variables incl: maternal ed., birth weight & appars *Use of prenatal, perinatal data & 1 yr follow-up assessments gave a 93% accuracy of predication of function at 7 yrs *Ability to predict psych status at 7 yrs did not increase greatly with additional dev info collected from 1-4yrs *Multivariate approach is necessary because behaviour is "multidetermined" 	<ul style="list-style-type: none"> *No attempt to interpret which variables are good or poor predictors *No indication of percentage with poor perinatal histories. *Use of corrected ages may have led to inflation of results or change in predictions
Fitzhardinge & Ramsay 1973	<ul style="list-style-type: none"> *32 <1251 Male BW=1145 (930-1250) Female BW=1172 (880-1230) AV gest=28 wks (26-31) *Only those with appropriate BW for gestational age included *No full term controls 	<ul style="list-style-type: none"> *5 yrs:ages corrected for prematurity *Tested at 4,6 & 8 mths 	<ul style="list-style-type: none"> *19 seen routinely in developmental clinic; *13 seen at least twice and records supplemented by those of private physicians; *Speech assessed by authors; if abnorm-further evaluated by sp. path b/w 3 & 4 yrs *School perform., evaluated by parents & teachers Major neuro- defects incl: history of convulsions, micro/hydro-cephalic, cerebral palsy 	<ul style="list-style-type: none"> *Stanford Binet used up to 4 yrs *From 4 yrs and up WPPSI and WISC used 	<ul style="list-style-type: none"> *Mean IQ: for boys = 87; for girls = 92. *43% scored less than 90 *9 boys & 4 girls had IQ<90; of these 9 had scores <80 *Sign association b/w IQ & recurrent apnea in newborn period ($p<0.005$) *Wide discrepancies in verbal & performance IQ with 15 of 24 showing more than 10 point discrepancy; for 17 of 24 tested, the verbal score was sign. lower than the performance score. 	<ul style="list-style-type: none"> *No speech measures specified 	<ul style="list-style-type: none"> *Some form of speech defect found in 13/20 boys & 4/12 girls; *8 boys & 3 girls had deficits persisting to school age; *All but 2 accompanied by immature vocabulary & poor receptive/ expressive abilities. *IQ scores of <80 were found in 7 of the 17 children with speech defects & 2 of the 15 without such defects. 	<ul style="list-style-type: none"> *Only 2 (6%) had major neuro abnormalities; *Perceptuo-motor difficulties diagnosed in 10 children, 7 of whom were doing poorly at school *Authors argue that almost impossible to obtain an adequate control group as matching for age, sex, & SES ignores effects of heredity & parental influence *Relationship found between low IQ and speech outcomes. 	<ul style="list-style-type: none"> *No normal control group for comparison *No indication of social factors *Small sample size; *Use of corrected ages may have inflated results for preterm infants *Although measures of SES taken, study did not report on relationship between SES and outcome *No indication of what speech measures were used

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Beckwith, Cohen, Kopp, Parmelee & Marcy, 1976	<ul style="list-style-type: none"> *51 preterm <37wks Gest= 33.2 wks (26-37wks) BW=1886 gms (920-2495gms) *Excluded twins, NESB and serious sensory or neuro abnorm. *No full term control group 	*1,3,8 mths corrected	<ul style="list-style-type: none"> *Naturalistic observations in family home, observed during daily cycle. *Infant caregiver behaviours were measured 	<ul style="list-style-type: none"> *Gesell Developmental Schedules administered at 9 months (uncorrected) *Sensorimotor assessment (Piaget) developed by Casati & Lezine (1968) administered at 9 months 	<ul style="list-style-type: none"> *Mean DQ =100.5 (88-114) (within normal range for corrected age) *Standardised scores ranged from 59-153 with a mean of 97.9 *Girls performed significantly better than boys 	*No specific measure used	*No results reported	<ul style="list-style-type: none"> *Preterm infants who differed in level of dev. as assessed by Gesell & sensorimotor series, also differed in patterns of social transactions with primary caregivers - supports position that tests tap into overlapping but discrete abilities); sign of environ. reinforced by finding that social transactions as early as 1 mth influenced dev. *Infants at 9 mths with more skillful sensorimotor dev. had at 1 mth more mutual caregiver/infant gazing, at 3 mths more interchanges or smiling during mutual gazing & more contingent responses to fuss cries; & at 8 mths experienced greater levels of social interaction 	<ul style="list-style-type: none"> *Limited length of follow-up *No full term control *Limited range of assessment tools *No indication of numbers excluded *No indication of maternal education or social factors *Small sample size *No normal control
Schachtel & Kapadia 1976	<ul style="list-style-type: none"> *Clinic Sample: 85 of 131 <2500 attending paediatric developmental clinic *No "normal" control group 	*2-7yrs	*Multiple -linear regression analysis of data from 85 subjects to examine the relationship between mental outcome and a set of variables (birth weight, apgars, sex SES etc)	*Stanford-Binet Test of Intelligence	<ul style="list-style-type: none"> *Mean IQ= 79.45+20..56(SD) *Sign. relationship b/w IQ & number of physical handicaps (P<0.01). % b/w IQ & need for ventilatory support (p<0.01) *No association b/w birth weight & IQ even when controlled for as many as 10 variables. 	*No measures specified	*Not reported	<ul style="list-style-type: none"> *Lower birth weights associated with lower SES 	<ul style="list-style-type: none"> *Lack of normal control group- all subjects had dev. disability of some form *Selection bias of study resulted in under-representation of larger LBW child with higher IQ *No indication if scores were corrected for prematurity *Limited range of assessment tools

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Zarin-Ackerman, Lewis and Driscoll 1976	36 high risk infants: with many of perinatal diff. incl: RDS, birth asphyxia, hypercalcemia & hyperglycemia *Control group, *Both groups limited to lower SES Hollingshead scale	*2 yrs	*Battery of language tests *Subjects matched on sex birth order and social class to ensure that any diff. b/w groups attributable to birth experience alone.	*No specif measures reported	*Not reported	*PPVT- *Productive adaptation of PPVT- asked to label one of 4 pictures on a page, production proceeded comprehension task *Infant Laboratory Language Test: knowledge of prepositions and adjective contrasts	*Control group had sign. better comprehension & production scores on PPVT than the high risk group (p<0.05) *Both types of vocabulary measures revealed superior performance by the control group. *No significant difference between groups in knowledge of prepositions *Controls scored significantly higher on the adjective contrasts test than the high risk group (p<0.05)	*Variability in performance across language skills such that not all tasks revealed risk/normal differences. -authors indicate that previous study (Zarin-Ackerman et al 1975) found that attending behaviour of these same subjects at 24 months was not sign. diff. *Employment of multiple behaviour measures over a period of time, enabled continuing behavioural deficits to be detected in risk infants that may go unnoticed with less comprehensive assessments.	*No breakdown of perinatal factors given such as birth weight, gestational age *No breakdown given of composition of the at risk group *No indication given as to whether corrected or uncorrected ages are used *No indication of cognitive development
Sugar 1977	*535 infants- 3 groups 1. 136 <1250 gms Gest=29+2.9(SD) 2. 213 >1250 Gest=34+3.1(SD) 3. 186 >2500 gms Gest=40+0(SD)	*6 mths to 2 yrs	*Study of onset of 12 milestones occurring in the first 2 years. *Approximately 50 infants recorded at each age group for each milestone. *Groups seen in separate clinics, authors state that the groups were seen at similar examination rate but no information provided on frequency.	*Informal assessments of: * stranger anxiety; * separation anxiety * pursuit of a hidden sound making object- all procedures developed for the study	*Report no statistical difference between groups	*Informal assessment through parents of the appearance of: **"No" gesture *speech "no" words *phrases speech "yes"	*No statistical difference	*Sign diff b/w groups in onset of three milestones: sitting, crawling and walking. - authors relate this to onset of maternal separation *No sign. diff b/w groups on stranger and separation anxiety	*Lack of standardised measures to enable comparison with other studies *No indication as to whether ages for corrected or not *Full terms were seen more frequently than preterm; thus more opportunity to observe milestones earlier than for preterm group. *No indication given of whether any subjects had received interv.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Kierscht and Meuwissen 1979	<ul style="list-style-type: none"> •18 high risk survivors of NICU •18 randomly selected controls from same hospital •All subjects members of 2 parent families 	<ul style="list-style-type: none"> •Within 3 months of 4 or 5 birthday, •Means not given •No indication if corrected or not 	<ul style="list-style-type: none"> •All assessments were carried out in the clinic and were rated blind •Comparisons made of maternal education and combined income of family •Maternal interviews 	<ul style="list-style-type: none"> •Stanford-Binet Intelligence Scale •Dev. Test of Visuo-motor integration 	<ul style="list-style-type: none"> •Means not reported •No sign. diff. between groups on economic levels •High risk group of mothers of high education had higher IQ than control group whose mother had comparable education; •High risk group of mothers with lower education had lower IQ than control group of mothers of comparable education 	PPVT	<ul style="list-style-type: none"> •Means not reported •Overall high risk group with mothers of low education had the lowest PPVT scores. •High risk group with mothers of high education had higher PPVT scores than control group whose mothers had comparable education; •High risk group of mothers with lower education had lower scores than control group of mothers of comparable education 	<ul style="list-style-type: none"> •Interaction between maternal education and birth status •No sign. diff. b/w groups on IQ & PPVT 	<ul style="list-style-type: none"> •No indication if ages corrected or not •Variation b/w groups in age at which assessments performed •Limited communication assessment •No indication of expressive language skills •Heterogeneous sample; -no indication of biological risk factors eg birth. weight; gest. etc •Limited environmental assessment
Mulligan, Painter, O'Donoghue, Mac Donald, Allen & Taylor, 1980	<ul style="list-style-type: none"> •65 of 74 infants who survived with neonatal asphyxia •No control group 	<ul style="list-style-type: none"> •3.6 to 6.3 yrs •Scores corrected for pre-maturity 	<ul style="list-style-type: none"> •Retrospectively sampled •Evaluated for neurological and intellectual status in a single clinic visit. •Defined major neuro sequelae as functionally significant motor impairment or sensori-neural hearing loss 	<ul style="list-style-type: none"> •Stanford-Binet Intelligence Scale 	<ul style="list-style-type: none"> •Means not reported 	<ul style="list-style-type: none"> •No specific measures used 	<ul style="list-style-type: none"> •4 infants with "mild speech delay" were considered to be functioning normally & not to represent problems that would be handicaps to future learning-assigned to the "no severe sequelae group" 	<ul style="list-style-type: none"> •12 (18.5%) had major sequelae, 9 of whom had both neuro. & intellectual impairment (spastic diplegia & chorea athetosis most common) •2 with major sequelae had sign. speech and language problems •Infants who had seizures for more than 48 hrs had a higher incidence of severe sequelae than infants who had seizures for less than 48 hrs 	<ul style="list-style-type: none"> •Corrected ages used therefore could inflate results •No means reported making interpretation difficult •No control group for comparison •No indication of perinatal back groups such as birth weights etc.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Siegel 1981	<ul style="list-style-type: none"> •148 subjects 80 preterm <1500gms •68 full term •Excluded 10 preterm & 1 full term who had severe disability 	4,8,12,18 & 24 mths	<ul style="list-style-type: none"> •Prospective study, on ability of infant tests to predict subsequent language and cognitive abilities & detect infants most at risk for developmental delay •Psych. test blind •Caldwell Inventory of Home stimulation administered at 12 mths •Used corrected and uncorrected scores, but only reported uncorrected •Subjects matched on SES, parity, sex & maternal age at birth of child 	<ul style="list-style-type: none"> •Bayley Scales of Infant development: MDI & PDI administered at 4,8,12,18,24 mths •Adaptation of Uzgiris and Hunt administered at 4,8,12,18 mths 	<ul style="list-style-type: none"> •Means for entire study reported but not for each group •Most subtests of Uzgiris and Hunt Scales were sign. correlated with Bayley at 2 yrs. •Uzgiris and Hunt most predictive of cognitive dev before 18 mths •Bayley scores of infants with Dev. Delay at 2 yrs had sign. lower scores at each age than those without Dev. Delay at 2 yrs 	<ul style="list-style-type: none"> •Reynell Developmental Language Scale administered at 24 mths 	<ul style="list-style-type: none"> •Means not reported for each group •Infants with/without delayed language differentiated at 2 yrs on: <ul style="list-style-type: none"> *Total Bayley MDI & PDI and U & H scales at all ages. *U & H subscales of schemes and object relations; objects in space; vocal imitation at all ages *U & H subscale of means-ends at 8 & 12 mths. *Scores on Bayley sign. correlated with language dev at 2 yrs. *Kohen-Raz subscales of the Bayley MDI: hand-eye coordination at 4,8,12, 18 mths; object relations at 8 & 12 mths; imitation/ comprehension at 12 & 18 mths & vocalisation/social at 8,12, 18 mths 	<ul style="list-style-type: none"> •PDI scores more highly correlated with language development than MDI scores •MDI scores more highly correlated with language at 18 mths. •Specific language delay (MDI >85; Reynell 1 SD < mean) differentiated on: <ol style="list-style-type: none"> 1. Kohan Raz Subscale of Bayley MDI: <ul style="list-style-type: none"> 4 mths: hand eye coord. & manipulation 18 mths: imitation/compreh. & vocalisation/social 2. U & H: <ul style="list-style-type: none"> 4 mths: Schemes 8 mths: schemes & space 18 mths: schemes & gestural imitation •Infants not detected as at risk early in dev. but who showed dev. delay at 2 yrs came from homes which provided less stimulation 	<ul style="list-style-type: none"> •Corrected ages used, •No indication of means for control and preterm group •Study correlational, however, lacks comparisons between the preterm & control group •Limited length of follow-up

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations																					
Ruiz, Le Fever, Hakonson, Clark & Williams, 1981	<ul style="list-style-type: none"> •38 preterm infants (<1000) •18 ventilated: BW=876+20 (SD) Gest=27.5 + 0.2 (SD) •20 nonventilate d: BW=881+22 Gest=28+0.5 (SD) •No full term controls 	4,8,12 mths assessed at C.A	<ul style="list-style-type: none"> •Assessed by paediatrician, psychologist & physiotherapist •Assessment blind •Assessments carried out in clinic visits 	Bayley Scales of Infant Development at 8 to 10 mths C.A.	<ul style="list-style-type: none"> •Means not reported <table border="1"> <tr> <td>MDI</td> <td>Vent</td> <td></td> </tr> <tr> <td>Nonvent</td> <td></td> <td></td> </tr> <tr> <td><68</td> <td>5</td> <td>1</td> </tr> <tr> <td>68-84</td> <td>6</td> <td>2</td> </tr> <tr> <td>>84</td> <td>6</td> <td>1</td> </tr> </table> <table border="1"> <tr> <td>PDI</td> <td></td> <td></td> </tr> <tr> <td>>84</td> <td>8</td> <td>15</td> </tr> </table> <ul style="list-style-type: none"> •No indication if the mean MDI & PDI were different for the 2 groups 	MDI	Vent		Nonvent			<68	5	1	68-84	6	2	>84	6	1	PDI			>84	8	15	<ul style="list-style-type: none"> •No measures specified 	•Not reported	<ul style="list-style-type: none"> •45% of total group had some dev. delay with 21% having severe delay •Severe handicap =10 of 38: 9 ventilated; 1 nonventilated •mild handicap= 8 of 38: 5 ventilated; 3 nonventilated •All infants with severe neuromuscular handicap & 5/6 with severe Dev.Dis. were ventilated •4/33 had signif. C.P. •For 16 infants, Bayley at 13-15 mths used, authors note that 2nd assessment tended to be higher than first, thus different ages at which assessments c.f. no indication as to which groups these infants were in 	<ul style="list-style-type: none"> •Small sample size •Lack of full term control •Lack of communication assessments •Limited range of assessment tools •Correction for prematurity would have inflated outcomes of preterm infants •Limited length of follow-up.
MDI	Vent																													
Nonvent																														
<68	5	1																												
68-84	6	2																												
>84	6	1																												
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>84	8	15																												
Orgill, Astbury, Bajuk & Yu, 1982	<ul style="list-style-type: none"> •59 VLBW (<1000 gms) surviving NICU BW=861+96(SD) Gest=26.8 +2.3 (SD) •No full term control 	•2 yrs corrected	<ul style="list-style-type: none"> •Prospective study •Clinical & neurological exams by developmental paediatrician •Assessments performed in the clinic 	•Bayley Scales of Infant Development	<ul style="list-style-type: none"> •Data available for 39 infants who were at least 2 yrs (corrected): mean age 24.6+1.1 (SD) •Remaining 20 were derived from their 12 mths assessments: mean age= 12.5+0.5(SD) •Mean MDI= 97.91+20.53(SD) •Mean PDI= 85.18+16.06(SD) 	•No measures specified	•Not reported	<ul style="list-style-type: none"> •16 of 59 (25%) had handicaps according to Stewart et al (1981) defn. •No sign diff in handicap rates b/w those who required oxygen for extended periods or assisted ventilation, although trend present for poorer outcome for those requiring prolonged ventilation •Authors concede that there is a need to look at "minor" handicaps 	<ul style="list-style-type: none"> •Small sample size •Limited follow-up •No full term control •No indication of social factors or measurements of environment •Limited range of assessment tools used- "developmental data for 20 infants at 1 yr & 39 infants at 2 yrs were combined yet skills at these ages are very different 																					

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Palmer, Dubowitz, Levene & Dubowitz 1982	<p>*39 preterm infants:</p> <p>3 groups:</p> <p>1. IVH + Vent. dilatation (n=11) BW=920-2500gms Gest=27-34 wks</p> <p>2. IVH only (n=14) BW=790-1980gms Gest=28-33 wks</p> <p>3. No IVH (n=14) BW=1130-2220gms Gest=29-34 wks</p> <p>*No full term control</p>	6,9,12 mths	<p>*Prospective study</p> <p>*Neurological & developmental assessments</p> <p>*Ultrasound assessments</p> <p>*All assessments clinic based</p>	*Griffiths Developmental Scales- corrected & uncorrected scores	<p>*Details of Quotients not provided but presented graphically</p> <p>*Corrected DQ was normal at 6,9,12 for all but 1 infant in IVH + dilatation group</p> <p>*Uncorrected DQ: 1. IVH +dilatation group: 6 mths:5/8had DQ<80 12 mths:7/9had DQ<80</p> <p>2. IVH g only roup: 6 mths:6/12 had DQ<80 12 mths:2/14 had DQ<80</p> <p>3. No IVH group: 6 mths:4/14 had DQ<80 12 mths:1/14 had DQ<80</p> <p>*Sign. diff in DQ b/w groups at all ages for both corrected & uncorrected.</p>	<p>*Achievement of milestones:</p> <p>babble responsively at 6 mths</p> <p>production of mumma or dadda</p> <p>participating in games at 12 mths</p>	<p>*>80% of no IVH group babbled responsively at 6 mths cf 60% of IVH only group & less than 50% of IVH + dilatation</p> <p>*At 9 mths >60% of no IVH group were producing mumma or dadda cf <30% of IVH only group & <10% of IVH = dilatation group</p> <p>*At 12 mths, 80% of no IVH were able to play a game cf to approx 30% of IVH only group & approx 20% of IVH+ dilatation group</p>	<p>*At 12 mths only 1/11 in IVH+ dilatation had no abnormal neuro signs cf to 6/14 in IVH group & 13/14 in no IVH group</p> <p>*Incidence of major handicap sign. greater at 1 yrs in IVH+dilatation group (p<0.01)</p> <p>*Although authors comment that most with dilated ventricles showed considerable dev.delay cf to those without IVH (particularly in items requiring two handed manipulation) corrected DQ were within normal limits for all but 1 infant</p> <p>*No infants in the No IVH or IVH only groups had major handicaps cf 6/10 with IVH+dilatation</p> <p>*Authors conclude that early dev of IVH only is similar to no IVH despite more frequent minor neurological abnormalities</p>	<p>*No full term control</p> <p>*Small sample size in each group</p> <p>*Limited length of follow-up</p> <p>*Limited range of assessment tools</p> <p>*Lack of objective standardised communication assessments- milestones are subjective</p>

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Siegel 1981	80 preterm <1501gms 68 full-term matched on SES, parity sex and maternal age at birth of child Primarily from lower SES 10 of preterm and 1 full term had severe disability-not included in testing	4,8,12,18, & 24	Prospective study, looking at the ability of infant tests to predict subsequent language and cognitive abilities & to detect infants at risk for developmental problems; psychometrists blind to perinatal history and previous assessments. Caldwell Inventory of Home Stimulation administered at 12 months Used both corrected and uncorrected scores, only uncorrected reported	Bayley Scales of Infant Development MDI & PDI; Adaptation of Uzgiris and Hunt	Not reported for each group Most subtests of Uzgiris and Hunt Scales at 4,8, 12 mths were significantly correlated with Bayley scales at 2 yrs; Bayley scores of infants with dev. delay at 2 yrs had significantly lower scores at each age tested than those without d.delay at 2 yrs; U & H most predictive of cognitive dev at 2 yrs blow 18 mths.	Reynell Developmental Language Scale administered at 24 mths	*Not reported for each group Found infants with/ without delayed language differentiated at 2 yrs on: *Total scores of Bayley MDI & PDI and U & H scales at all ages ; * U & H subscales: schemes and object relations, objects in space & vocal imitation at all ages and means at 8,12 mths *Kohen-Raz subscales of the Bayley MDI: hand-eye coordination at 4,8,12 &18 mths manipulation:4,8,12 mths object relations:8,12; imitation comprehension:12,18 mths *Vocalisation social:8,12,18	*Bayley scales signif. correlated with lang. dev. at 2 yrs; PDI scores more highly correlated with lang. dev. than MDI scores; MDI scores more highly correlated at 18 mths. *Eye-hand items on Bayley MDI at all ages tested significantly correlated with lang. dev.; Vocalisations-social items correlated at 8,12 &18mths. Means ends, space & schemes significantly correlated with lang. dev. *Specific lang. delay (Bayley MDI >85 at 2 yrs, Reynell 1SD < mean): differentiated on: Kohen-Raz subscales of Bayley MDI: 4 mths: eye-hand coordination, manipulation 18 mths: imitation-comprehension & vocalisation-social U & H: 4 mths:schemes 8 mths: schemes and space 18 mths schemes and gestural imitation *Infants not detected as at risk early in dev. but who showed dev.delay at 2yrs came from homes which provided less stimulation	*Reynell scores not reported for each group making interpretation difficult *Lack of long term follow-up

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Ruiz et al 1981	*38 <1000 18 vent BW=876 +20 GEST=27.5 +0.2 *20 nonvent BW=881 +22 GEST=28 +0.5 *No full term control	*4,8,12 mths assessed at C.A. Scores corrected	*Assessed by Paediatrician, psychologist and physiotherapist, assessments were not blind	*Bayley Scales of Infant Development MDI administered at 8 to 10 mths C.A. Scores corrected for prematurity	*Means not reported Number MDI Vent Non-vent <68 5 1 >68,<84 6 2 >84 6 1 PDI >84 8 15 *No indication if the mean MDI and PDI were different for the 2 groups	*Not performed	*Not reported	*45% of total group had some developmental delay with 21% having a severe delay *Severe handicap: 10/38 Vent 9 Nonvent 1 Mild handicap: 8/38 Vent 5 Nonvent 3 *All infants with severe neuromusc. handicap and 5/6 with severe D.D. were ventilated 4/33 significant cerebral palsy *No language assessments *No full term control group *Small sample size *For 16 infants, Bayley at 13-15 months used, authors note that second assessment tended to be higher than first, thus differences in the ages at which assessments compared. *No indication as to which groups these infants were in	*No full term controls *Lack of comprehensive assessments incl: communication assessments *Means for MDI and PDI not reported making interpretation of the results difficult *No indication if there was a significant differences in the mean MDI or PDI for the 2 groups

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Orgill et al 1982	59 infants VLBW(<1000gms) surviving NICU BW=861+96(SD) GEST=26.8+2.3(SD)	up to 2 yrs	Prospective study of VLBW infants; clinical and neurological examinations were made by a developmental paediatrician	Bayley Scales of Infant Development;	Developmental data were available for 39 infants who were at least 2 yrs of age (corrected-mean age =24.6+1.1(SD)); the remaining 20 were derived from their 1 yr assessments (mean age 12.5+0.5(SD)) •Mean MDI = 97.91+20.53(SD) •Mean PDI= 85.18+16.06(SD)	Not assessed	Not provided	<ul style="list-style-type: none"> •16/59 (25%) had handicaps according to definition by Stewart et al (1981) •No significant difference in handicap rates were found between those infants who did require & those infants who did not require extended periods of oxygen or assisted ventilation, although there was a trend for a poorer outcome for those who required prolonged ventilation 	<ul style="list-style-type: none"> •Length of follow-up is short. •Lack of full term control for comparison •No indication of social factors •Limited assessments at follow-up- the authors concede that there is a need to look at minor handicaps •Developmental data from 20/59 infants was at 1 yr and from 39/59 infants at 2 yrs, were combined, however, as developmental tests at these two ages are testing vastly different skills this practice may not be valid.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Palmer et al 1982	<ul style="list-style-type: none"> *39 preterm infants: 3 groups *IVH + ventricular dilation (n=11) BW= 920-2500 GEST= 27-34 *IVH only (n=14) BW= 790-1980 GEST= 28-33 *No IVH (n=14) BW= 1130-2220 GEST= 29-34 *No full term controls 	*6,9,12 months	*Prospective study neurological and developmental assessments; Ultrasound assessments	*Griffith's Developmental Scales-corrected and uncorrected	<ul style="list-style-type: none"> *Details of Quotients were not provided but were shown diagrammatically . *The corrected DQ was normal at 6,9,12 months in all but one infant in the IVH+ dilation group. *Uncorrected DQ: no IVH group DQ<80 for 4/14 tested at 6 mths but only 1/14 tested at 12 mths IVH group DQ <80 for 6/12 tested at 6 mths but only 2/14 at 12 mths IVH+Dilatation DQ <80 for 5/8 tested at 6 mths, and 7/9 at 12 mths *Significant differences in DQ between IVH+ dilatation group and controls at all ages for both corrected and uncorrected values 	<ul style="list-style-type: none"> *Achievement of following verbal milestones: *Babbles responsively at 6 months *Production of muma or dadda sound at 9 months *Play game at 12 months 	<ul style="list-style-type: none"> *Over 80% of No IVH group babbled responsively at 6 mths compared to approximately 60% of IVH only group and less than 50% of the IVH+dilatation *At 9 months, over 60% of the no IVH group were producing the mummy or dadda sound; compared to less than 30% of the IVH only group and less than 10% of the IVH+dilatation group. *At 12 months, 80% of the no IVH group were able to play a game, compared to approximately 30% of the IVH group and approximately 20% of the IVH +dilatation group. 	<ul style="list-style-type: none"> *At 12 mths only 1/ 11 infants in IVH = dilatation group had no abnorm. neuro signs c.f. to 6 /14 in IVH group & 13/14 in no IVH group. *Incidence of major handicap signif > at 1 yr in IVH+ dilatation group .(p<0.01) *Although the authors comment that most of the babies with dilated ventricles showed considerable dev. delay c.f. with babies without IVH & were particularly delayed in items requiring two handed manipulation at both 9 & 12 mths, corrected DQ scores were within normal limits for all but one infant * No infants in no IVH & IVH only groups had major handicaps at 1 yr c.f. to 6/10 infants with IVH +dilatation *Authors conclude that early development of infants with IVH only is similar to that of infants without IVH despite more frequent minor neurological abnormalities. 	<ul style="list-style-type: none"> *Lack of full term control group *Limited communication assessment-use of milestones rather than standardised assessments *Details of DQ not provided *Use of corrected age may have distorted results

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Bee et al 1982	<ul style="list-style-type: none"> Population based study 193 infants of first time mothers; 80 selected with no perinatal complications 113 with at least 1 complication 	1,4,8,12, 18,24,,36, 48 mths	<ul style="list-style-type: none"> HOME inventory used Home visit at all ages except 24 mth From 12 mths individual assessment also carried out in Lab setting 	<ul style="list-style-type: none"> Bayley Scales of Infant Development at 12 and 24 mths Stanford-Binet at 48 mths 	<ul style="list-style-type: none"> Infants with mother with low education had significantly lower MDI scores ($p < .001$) at 24 mths & Stanford-Binet IQ scores at 48 mths than infants with mothers with high education levels. 24 mths: MDI: high ed.=121 low ed.= 110 ($p < .001$) 48 mths: Stanford-Binet: high ed.=118 low ed. 107.6 ($p < .001$) 	<ul style="list-style-type: none"> SICD at 12 and 24 mths 	<ul style="list-style-type: none"> Infants with mother with low education levels had signif. lower receptive lang scores ($p < .001$) at 24 & 36 mths & expressive language scores at 36 mths ($p < .001$) & 48 mths ($p < .01$) than infants with mothers with high education levels. Receptive Lang.: 24 mths: high ed.=87.9 low ed.=70.7 36 mths high ed.=104 low ed.=93.6 ($p < .001$) Expressive lang.: 24 mths: high ed.=88 low ed=71 ($p < .001$) 36 mths: high ed.=104 low ed.=93 ($p < .001$) 	<ul style="list-style-type: none"> Very health sample, only 3 infants <2500gms, only 23 with Apgar <6 at 1 or 5 min, Perinatal status was not helpful in predicting later functioning b/c of the nature of sample. Measures of child performance on standardised tests had little predictive value until 24 months, however, authors point out that for high risk infants these measures may be helpful predictors Assessments of mother-infant interaction & general environmental quality were among the best predictors of later IQ & lang. Measures of family ecology (level of stress, social support & maternal ed) & parent perception of child were strongly related to child IQ & lang. within low e d. subsample but not in high ed. subsample. At most ages HOME score single best predictor of IQ and lang. 	<ul style="list-style-type: none"> Nature of sample limits generalisability to high risk infants Sample as a whole generally well educated & from working & middle class backgrounds, therefore a low risk group. Limited language assessments

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Siegel et al 1982	80 VLBW <1500 68 Full term matched on social class, sex, parity	4,8,12,18, 24 mths assessed at chronological age	Not all infants available for 2 yrs follow-up. No significant difference in SES, maternal age, sex etc. between those tested at 2 yrs and those not ; no difference between group in number of children unable to be seen at 2 yrs	Bayley scales of Infant Development Modified Uzgisir and Hunt Scale of Infant Psychological Development Excluded infants with severe sequelae	Full term: MDI: 101.68+2.20(SD) Preterm: MDI: AGA-singleton 84.83 +2.21(SD) UNCORR 98.25+2.77(SD) CORR AGA-twin 82.92+4.4(SD) UNCORR 94.27+5.32(SD)CORR SGA-singleton 98.43+6.69(SD)UNCORR 112+10.61(SD)CORR *Uncorrected scores for AGA subjects was significantly lower than for the full term. No signif. difference b/w SGA & full term uncorrected scores *No signif. difference b/w the full term and any of the preterm groups on corrected MDI scores. *All preterm groups had signif. lower uncorrected PDI scores than the full term group. *Both AGA groups had signif. lower corrected PDI scores than the full term group.	Reynell Developmental Language Scale	Comprehension: Full term:(n=49) Mean: 0.29 Preterm: AGA-Singleton(n=31) -0.55(SE=0.18) UNCORR 0.17(SE=0.21) CORR AGA-twin (n=7) -0.54(SE=0.34) UNCORR 0.20(SE=0.43)CORR SGA-singleton (n=7) -0.11(SE=0.55)UNCORR 0.24 (SE=0.63)CORR Expression: Comprehension: Full term:(n=48) Mean: -0.8 Preterm: AGA-Singleton(n=7) -0.95(SE=0.18) UNCORR -0.31(SE=0.22) CORR AGA-twin (n=7) -0.90(SE=0.42) UNCORR 0.20(SE=0.43)CORR SGA-singleton (n=7) -0.34(SE=0.41)UNCORR -0.05 (SE=0.45)CORR AGA preterm had significantly lower uncorrected scores than the full term on both the language comprehension (p<.01) and language expression (p<0.005) substest- larger difference evidence for expression. *No significant difference between corrected scores for preterm and full term group	*Relatively health SGA group of other studies. *Presented both corrected & uncorrected scores comparison. *2 yrs scores could be predicted with a high degree of accuracy using g factors such as SES, parent ed.level; number of previous pregnancies, & in preterm infants: apnea, birth asphyxia and severity of respiratory distress. *Corrected scores at 4 mths better predictors than uncorrected; but by 12 months, uncorrected scores better predictors even of 2 mth corrected scores *Presence & severity of apnea appeared strongly related to lang. dev. *Discriminant analysis predicted 90% of expressive lang. delays (uncorrected) for preterm infants at 2 yrs with a low false positive and moderate false negative rate.	*Small sample size of each of the AGA-twin and SGA preterm groups *No articulation test performed. No language sample or comment about pragmatic skills *No details given of the characteristic of each group, mean birth weight etc.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Siegel 1982	<ul style="list-style-type: none"> •51 FT: •53 Preterm <1501 (mean BW & gest age not given) 	3 yrs	<ul style="list-style-type: none"> •Groups matched for Hollingshead, SES, parity, maternal age and sex. •Hollingshead SES, had been assessed at 12, 18 and 24 months- the preterms who remained in the study had significantly higher scores on the Bayley MDI the Reynell Comprehension & Expression at 2 years (corrected) than those that dropped out •HOME Scale administered at 12 months •Risk index developed- predictor of outcome 	•Stanford-Binet	•Scores not provided	•Reynell comprehension and Expression subtests	•Scores not reported	<ul style="list-style-type: none"> •Both corrected and uncorrected ages are used. •Stanford Binet IQ and Reynell Language Expression & comprehension at 3 yrs were signif. predicted by the risk index. •S.E.S., birth order, severity of illness in the perinatal period were the most significant predictors of dev. outcome. •HOME scores were signif. correlated with 3 yr Reynell & Stanford Binet Scores for preterm but not full term group. Children classified at risk at 12 mths but normal scores at 3 years had signif. higher HOME scores. Children not identified as at risk at 12 mths, with delayed dev. at 3 yrs came from families with lower HOME scores •Risk index and infant tests were found to predict developmental delay in 89% of cases. •Preterms appeared to be more susceptible to environmental influences 	<ul style="list-style-type: none"> •Mean ages for the two groups are not given, •No indication given of mean scores for the cognitive and language assessment for comparison. •No indication given of % of children with signif. dev. delay •Scores of preterm infants who remained in study were sign. higher than those who were not available at 3 yrs,

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Knobloch & Kanoy 1982	<ul style="list-style-type: none"> *147 infants <37 wks BW<1500 *49 controls 	<ul style="list-style-type: none"> *high risk infants assessed 26-60 wks (mean 44 wks) *Controls 14-34 wks (mean 22.45) 	<ul style="list-style-type: none"> *Auditory localisation skill development *Auditory sensitivity Control group selected for infants seen in Pediatric Primary care clinic for routine paediatric follow-up 	*Not reported	*Not reported	<ul style="list-style-type: none"> *REEL: -expressive language (results for 87 AR only) receptive language (results for 88 AR only) 	<ul style="list-style-type: none"> *Control group performed > than their chronological age on both lang. scores. *REEL scores for high risk infants higher than for the control group for both receptive (8.7 mths c.f 6.5 mths) & expressive lang. age (8 mths c.f to 6.5 mths) this was to be expected given the significantly older age of the high risk group at the time of assessment (44.10 wks c.f. 22.45 wks). When adjusted for prematurity although receptive language was near expectation, expressive language was below expectation. The mean expressive lang. age & adjusted expressive age were not significant, 	<ul style="list-style-type: none"> *Although the Authors suggest that the results of the two groups are "more alike" than different" and that the high risk infants have begun a catching up process, there was a significant difference in the ages at which these infants were assessed. 	<ul style="list-style-type: none"> *No indication given as to whether there was a signif. difference b/w lang. age & C.A. *Heterogeneous sample *Preterm group was significantly older than full term group at time of assessment *No indication of the social factors effecting subjects *No indication if groups matched *No indication of complications of high risk group
Cohen et al 1982	<ul style="list-style-type: none"> *60 of 75 long term survivors <1000gms BW: x=928+67(SD) gms *28 normal siblings acted as controls 	*3- 6 yrs corrected	<ul style="list-style-type: none"> *Study period 1961 to 1980; *Seen yearly until at least 3 yrs *Psychometric testing at 3 yrs or later *Siblings tested where possible 	<ul style="list-style-type: none"> *Administered to 49: Stanford Binet (44) Cattell (1) WISC (1) Le.....(3) 	<ul style="list-style-type: none"> *Mean DQ: 96.1 +21.5(SD) *Significant difference b/w ventilated & non-ventilated (p<0.01) *Ventilated (n=15) Mean DQ: 82 +25.2(SD) *Non-ventilated (n=34) Mean DQ: 102.3+16..5(SD) *No significant difference between VLBW and Siblings 	*No specific assessment of communication skills	*Not reported	<ul style="list-style-type: none"> *All of the severely & half of moderately handicapped children had received ventilation *Authors report that more than 70% of VLBW survived; of these 70% free of significant handicap- focus on significant handicap ; *12% had severe & 10% had moderate handicaps in study population. 	<ul style="list-style-type: none"> *Continued use of corrected ages may have inflated DQ in VLBW group. *Lack of true control group *Lack of consistency in age of assessment (range 3 yrs) and assessment tool used *No indication of academic or communication performance

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Zubrick 1982	<ul style="list-style-type: none"> •Random sample: 301 infants from 618 live births meeting criteria: <2000gms <34 wks 5 min apgar<4 Failure to spont. resp <5 min., Serious neonatal morbidity. •30 SFD •42 VLBW •21 LBW •185 NBW •No controls 	•4 yrs	<ul style="list-style-type: none"> •Assessment carried out by Child Health Nurse •Scored by speech pathologists/psychologists •ANOVA carried out 	<ul style="list-style-type: none"> •Developmental assessment derived from Dubowitz et al 1977 including cube designs, copying counting and digit span 	<ul style="list-style-type: none"> •SFD performed significantly poorer on cube design •No significant difference between groups for other measures 	<ul style="list-style-type: none"> •Renfrew Action picture Test- scored for information/grammar •Repetition of ten monosyllables •Identification of 8 body parts •Answers to 4 complex questions •Discrimination of three adjectives •Comprehension of 5 prepositions 	<ul style="list-style-type: none"> •Bilingual children performed at significantly lower levels on all speech & lang. measures •SFD had significantly poorer results on all speech & lang. measures than other groups •Birth weight exerted a simple additive effect on information & intelligibility •Complex sex by weight interaction such that SFD females performed signif. poorer than SFD males •Undifferentiated sample performed at levels expected in general population 	<ul style="list-style-type: none"> •No signif. diff b/w LBW, VLBW, normal b/w if appropriate for weight. •authors conclude that SFD most at risk for lang delay/disorder. •Note: NBW group included infants with low apgars etc 	<ul style="list-style-type: none"> •Lack of control group with which to compare language measures, simply states that scores similar to that expected in general population •Lack of reliability and validity information regarding choice of lang. assessments •Heterogeneity of sample particularly NBW group •Lack of information on cognitive measures used for comparison
Zubrick and Zubrick 1982	<ul style="list-style-type: none"> •278 English speaking sample from 618 live births meeting criteria for Zubrick (1982) 	•4 yrs	<ul style="list-style-type: none"> •Assessment carried out by Child Health Nurse •Scored by speech pathologists •ANOVA carried out 	<ul style="list-style-type: none"> •Not reported in this study, reported previously in Zubrick, (1982) 	<ul style="list-style-type: none"> •Not reported in this study, reported previously in Zubrick, (1982) 	<ul style="list-style-type: none"> •Renfrew Action picture Test- scored for information/grammar •Repetition of ten monosyllables •Identification of 8 body parts •Answers to 4 complex questions\discrimination of three adjectives •Comprehension of 5 prepositions 	<ul style="list-style-type: none"> •On all measurements, SFD female infants scored signif. poorer than other "at risk " infants (p<0.05) •SFD males had significantly poorer intelligibility scores on the Renfrew •Male infants 1991-2500gms had poorer word repetitions skills 	<ul style="list-style-type: none"> •No signif. diff b/w LBW, VLBW, normal b/w if appropriate for weight. •Authors conclude that SFD most at risk for lang delay/disorder. •Note: NBW group included infants with low apgars etc •Complex association b/w maternal variables during pregnancy and later speech & lang. outcome. 	<ul style="list-style-type: none"> •Lack of control group with which to compare lang. measures •Lack of reliability & validity information regarding choice of language assessments •Heterogeneity of sample particularly NBW group •Lack of cognitive measures for comparison

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Hunt and Deddish, 1983	*75 infants <1500gms	*16 and 29 mths ?corrected /uncorrected ages	*Unclear	*Bayley Scales of infant Development	*Mean MDI=88+21(SD) Mean PDI=88+22(SD) *Although the authors note that the scores were not significant different from test means, the distribution of the scores had shifted to the left ie more with lower scores.	*No specific assessment	*Not assessed	*At 29 months 37% of the 54 infants assessed had major neurological handicaps or a MDI of <80. *Authors conclude that prognosis for <1500gm infants is improving.	*No indication given of procedures used *No indication given as to whether corrected or uncorrected ages were used *No indication of percentage requiring intervention *No lang. assessments *No control group
Nelson & Ellenberg, 1982	*37,386: ➤37,282 diagnosed as no CP at 7 yrs (of which 118 were diagnosed with CP at 1 yr but not at 7 yrs. ➤104 diagnosed with CP at 7 yrs.	*1 & 7 yrs	*Hearing evaluated by pure tone audiometry. *All assessments performed blind. *Measures of SES, school vision tested. *Developmental disability: DQ< 70 on WISC-R *Learning disorder: 1 yr < grade on achievement test	* WISC-R * Behavioural Profile *Wide range achievement test.	*At 7 yrs: IQ< 70: -3.2% of children with no diagnosis of CP at 1 or 7 yrs -22.3% of children with diagnosis of CP at 1 but not 7 yrs *Mean performance score higher than verbal for both groups who outgrew CP and general population.	*Examination of movements of head, lips, tongue & pharyngeal structures *Templin-Darely Test of Articulation *Auditory Association subtest of ITPA	*Speech as assessed by the articulation test was more abnormal in children who outgrew CP (16% c.f. 3.1%) *OMA results were WNL	*Hyperactivity more common in children who outgrew CP *Of children suspect of CP at 1 yrs, 1.6% had CP at 7 yrs. *Of children with no CP at 1 yr, 0.2% had CP at 7 yrs. *Children with mild CP at 1 yr were less likely to have a definite motor deficit at 7 yrs than children with moderate CP at 1 yr. *Severe CP usually persisted *Spastic quadraparesis or hemiparesis of mod/severe degree at 1 yr rarely resolved, spastic diplegia had a reasonable chance of resolution (67% of children who outgrew CP) *Infants < 1500, & infants 1501-2500gms/ <37 wks were over-represented in group who outgrew CP	*Table provided with early characteristics unclear *No language assessments

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Stewart et al 1983	<ul style="list-style-type: none"> *109 preterm infants *Normal ultrasound group: (n=62) BW=1360 gm (720-2500) GEST=31 wks (25-32) *Abnormal ultrasound group: (n=47) BW=1190gm GEST=29 (25-32) *No control group 	*16-23 months	<ul style="list-style-type: none"> *Aim was to explore relationship b/w neonatal brain ultrasound appearances & neurodevelopmental status at 18 mths. *All infants < 33 wks studied prospectively with real time ultrasound; infants followed up approximately 3 monthly for growth & development. 	<ul style="list-style-type: none"> *Developmental Screening Inventory (Knobloch et al 1966) 8-14 mths *Griffiths Scale at approximately 18 mths corrected (16-23 mths) 	<ul style="list-style-type: none"> *Normal ultrasound group: Mean GQ was 103(63-121) *Abnormal ultrasound group: mean GQ: *uncomplicated PVH (n=25) =107(75-119) *Intradural haemorrhage (n=1)=101 *Ventricular enlargement + PVH: *Mild ventricular distension (n=8) = 99 (81-110) *Hydrocephalus (n=4) =105 (104-109) *Cerebral atrophy (n=7) = 95 (~30-111) 	*Not tested	*Not reported	<ul style="list-style-type: none"> *Ultrasound studies had a sensitivity of 59% (ie 41% of infants who later proved to be abnormal were not identified by ultrasound) & a specificity of 85% (ie correct identification of normal infants). *8% of infants with uncomplicated PVH & 8% of infants with normal ultrasounds had abnormalities. In contrast, 71% of infants with ventricular enlargement had abnormalities at follow-up *3/62 with normal ultrasounds had GQ<85; 5/7 with cerebral atrophy had GQ<85 *Prediction of abnormality based on presence/absence of ventricular enlargement was more precise than prediction based on grade of haemorrhage. specificity =68%, sensitivity =93% 	<ul style="list-style-type: none"> *Lack of full term controls for comparison *Limited developmental assessment, *Lack of communication assessments *Use of corrected ages may have inflated GQ & GQ particularly considering that 3 of the infants with serious neurological sequelae had normal GQ and DQ.
S. Cohen et al(1983)	<ul style="list-style-type: none"> *59 preterm infants from English speaking homes. *GEST=32(+3.3) wks *BW=1772(+464) *SES=high=36 low=23 	*0-5 yrs corrected	<ul style="list-style-type: none"> *Assessed in lab., at 1,3,4,8,9,18,24 mths & 3,5, yrs. *Caregiver-infant interactions assessed at 1,8,24 mths in naturalistic observations in infants own homes. 	<ul style="list-style-type: none"> *Gesell at 4,9,24 mths. *Bayley at 18, 24 mths *Stanford-Binet at 3 & 5 yrs 	<ul style="list-style-type: none"> *Gesell (9mths) =99.1(+7.8, 74-123) *Bayley MDI (18mths) =98 (+17, 50-140) *Gesell (24 mths) =100 (+13.9, 54-138) *Stanford-Binet (3yrs) =100(+20, 50-139) *Stanford-Binet (5 yrs) =103 (+18,41-134) 	*Not tested	*Not reported	<ul style="list-style-type: none"> *No association b/w medical complications and any outcome measures. *Perinatal & neonatal problems & illnesses had no short or long term utility in identifying infants with developmental problems *Impact of illness obscured by environmental effects. Path analysis indicated paediatric path had decreasing impact on outcomes while caregiving path had increasing impact. *Caregiving appeared to be the critical mediating factor. 	<ul style="list-style-type: none"> *Full term control group mentioned but results not reported *No communication assessments *Very educated population, parents averaged 13 yrs at school, most finished high school. *Use of corrected ages may have impacted on association b/w variables analysed

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Hirata et al, 1983	<ul style="list-style-type: none"> *18 <750 *No full term controls *6 term & 5 preterm siblings used as controls 	*20 mths & 7 yrs				*PPVT at 2 yrs	<ul style="list-style-type: none"> *No scores given *Report delays only: *2/18 had speech therapy *5/18 had receptive lang. delay *5/18 expressive lang. delay 		<ul style="list-style-type: none"> *No randomly selected full term control group *No objective data provided *No indication if some children had both an expressive & receptive lang delay,
Michelsson & Noronen, 1983	<ul style="list-style-type: none"> *197 <2000 g *85 controls, 60 randomly selected plus 25 healthy twin siblings to infants in <2000 g group. 	*5 & 9 yrs	<ul style="list-style-type: none"> *Prospective study: *Neurological examination, *Psychological tests, *Articulation tests, *Developmental evaluation *All assessment performed in Centre *Teacher assessments carried out at 9 yrs 	<ul style="list-style-type: none"> *WISC (n=82 of LBW) *Visual-motor subtests administered by psychologist; *Auditory-vocal tests by speech pathologist *Dubowitz IQ test 	<ul style="list-style-type: none"> *LBW Mean IQ= 111 (+12) *Control group performed significantly better on all assessments than low birth weight group, however, actual scores not reported for control group.. 	<ul style="list-style-type: none"> *ITPA *Repetition of single vowels & consonants *Word articulation test, *Oromotor assessment; 	<ul style="list-style-type: none"> *ITPA: 182 LBW assessed, LBW group had signif. lower scores than control group (34.5+4 cf 37+2.8). 9/12 subtests were signif. different *Articulation errors (both single sounds & words) signif. more common in LBW than controls. Severe articulation errors in single sounds found in 11.5% of LBW & 1.8% of controls. Severe errors in word pronunciation occurred in 16.4% of LBW & only 2.8 % of controls *Signif. difference in muscle movements of lip & tongue b/w LBW & controls . *Difficulties with lip movements: LBW=18.1% Controls2.8% *Difficulties with tongue movem'ts: LBW=46.2% Controls25% *8 LBW had abnormal vocal pitch, 3 hypernasal; no controls had voice disorders 	<ul style="list-style-type: none"> *Severe mental/neurological impairments:9.2% *LBW group scored significantly lower on neuro-developmental test than control group (20.3+12.9 cf 11.8+7.4) *Teachers indicated that 32% of LBW needed special ed. cf 12% of controls *School problems more common among those who had neuro-developmental impairment at the age of 5 yrs- suggests that the cause of school failure may be due to minor organic brain dysfunction *Signif. correlation b/w test results at 5 yrs & school achievement at 9 yrs. 	<ul style="list-style-type: none"> *Assessments not blind. Examiners knew group allocation of subjects. *IQ not reported for control group

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Ounsted, Moar & Scott 1983	*221 SFD *244 AFD	*2,6,12,18 mths, *2,3, 4 yrs	*Seen by doctors in own homes	*Denver Developmental screening test	*AFD group scored signif. better on all sectors of Denver than SFD group (p<0.01)	*Not formerly assessed, Denver used	*18 (9.8%) SFD and 12(5%) AFD had immature speech (no definition given as to what this means); * Articulation defects noted in 8 (4.3) SFD and 10 (8.4%) AFD *AFD group scored significantly better on language and comprehension sectors of the Denver than SFD group (p<0.01)	*Signif. difference in social class of those followed up & those that were not. Mainly due to the armed services. *No., of children with handicap with or without congenital abnorm. signif. higher in SFD group (5.9%) than the AFD group (1.6%) (P<0.05). *Comment made that social class effects were present in lang. & comprehension sectors of Denver.	*Lack of control group *Use of Denver-- not valid assessment of language function *Figures not provided regarding birth weight etc., presented on graph only making comparisons difficult.
Wright et al 1983	*70 <2000 BW=1720 1049-1984 *49 matched controls (sex, birth order social class) BW=3260 2041-4082	*3yrs 3 mths- 4yrs 5 mths- corrected av 3.5 yrs months uncorrected	*All assessments blind *Questionnaire completed by parents after testing *Location of assessment varied, 64 in the clinic, 43 at their homes & 12 other locations	*No information given	*No information given	*Reynell developmental Language Scale Verbal comprehension & expressive lang. *Edinburgh Articulation test * Hearing test	*LBW infants signif. delayed in lang. expression & comprehension compared to controls (p<0.01) *No signif. difference b/w the groups for articulation & hearing *No. requiring further assessment, advice or therapy was signif. higher (p,0.05) for preterm(24%) than control group (6%)	*Significant relationship b/w the child's speech & lang. skills & the child's interest in books & toys, & the amount of time parents spent with the child *3 & 5 yr stimulation score were a strong predictor of speech & lang. dev. (p,0.001) *Speech & lang. scores showed strong relationship with many social and environmental factors. *Social class was a signif. predictor of speech & lang. outcome	*Lack of cognitive measure makes comparison with other studies difficult *Lack of indication of medical complications -may have been a sicker sample than other studies *Means not reported, makes comparison with other studies difficult. *No indication of how sample selected

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Rocissano and Yatchmink, 1983	<ul style="list-style-type: none"> •20 preterm infants •<2500gms •BW=1883+443.1(SD) •GEST=<36 wks •No seizures, or obvious CNS damage •single & first born •working class families •No full term control group 	<ul style="list-style-type: none"> •24 mths gest., age. 	<ul style="list-style-type: none"> •Hollingshead SES= 2.5+0.89 (SD) •Average Ed. of parents= 14.25 yrs •Each session ws for 30 minutes, the middle 10 minute segment was used for analysis. •Each videotaped interacting with Mo in laboratory playroom. Mo asked to play with child normally as would do at home 	<ul style="list-style-type: none"> •Not reported 	<ul style="list-style-type: none"> •Not reported 	<ul style="list-style-type: none"> •Analysis of interaction and language sample during play with Mo: •Subjects divided into two groups on the basis of their lang. skills •Examined types of turns produced by children & mothers •MLU of the children •Semantic complexity of children's utterances: non-relational; relational within class; relational b/w classes. 	<ul style="list-style-type: none"> •Mean MLU=1.51, suggesting that some of the children were producing two word utterances less than half of the utterances were non-relational indicating an emerging grasp of relational aspects of the lang. •Found significant difference between high and low lang. groups on MLU & semantic complexity of utterances. 	<ul style="list-style-type: none"> •Child's developing lang. skills associated with the extent to which mother/ infant dyads stayed in synch & on topic during interaction. •Dyads in low lang. group exhibited style characterised by mother directing/ child uninvolved. •Interaction in low lang. dyads less synchronous than for high lang. dyads •Lang skills more robust where mother/infant dyads were highly synchronous. 	<ul style="list-style-type: none"> •Lack of cognitive measures makes comparison with other studies difficult. •No full term control group •Lack of receptive lang. measures. •Authors describe the infants as healthy preterm, therefore generalisation to "sicker" preterms may be difficult.

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Bennett et al 1983	•16 VLBW infants; Mean BW =730gms GEST= 26 wks	•8 infants > 3yrs •8 infants <3 (6-24mth)	•Prospective study born b/w 1977-1980; Growth, vision & hearing, neuro. status, general cognition, & motor & lang.function monitored by an interdisciplinary team	•Bayley Scales of Infant dev. on infants <3 yrs •Stanford-Binet intelligence Scale for children tested >3yrs •Scores corrected for prematurity	•Mean MDI=90(50-117) •Mean PDI=90(60-109) •Mean IQ=106 (90-127)	•PPVT on 8 children >3 yrs of age.	•Mean receptive lang. performance was at 53 percentile for age (range 9th-99th, with 4 > 50 percentile & 4<50 percentile)	•Striking lack of cerebral palsy within the group, however, none had experienced any of the neonatal events such as intracranial haemorrhage, seizures, CNS infection or hypoglycemia often associated with adverse outcomes. Most were not born in a tertiary care centre. •Only 16/90 survived suggesting that those with major neuro abnormalities did not survive. As the authors suggest survival following these events becomes increasingly less likely as birth weight decreases; thus as opposed to larger preterm infants potentially handicapped infants of ELBW usually fail to survive such events •Presence of Asphyxia appeared to be signif. related to intelligence/ developmental scores •Only 3/16 infants had major CNS handicaps	•No indication of actual ages at the time of assessment •Language assessments limited to receptive skills •Very small sample sizes •Use of corrected scores may have inflated results •Lack of consistency of procedure for entire sample. •No SES measures

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Cmic et al 1983	<p>*37 preterm BW=1378 (840-1800) Gest=31.2 (26-36)</p> <p>*42 full term infants BW=3501 2600-4550 Gest=40.6 (39-42)</p> <p>*Excluded: most identifiable abnorms</p>	*1,4,8,12 months corrected age	<p>*Psychosocial functioning of the families was assessed at 1 & 8 mths by interview, dev. assessments performed at 4 & 12 mths, & mother infant interaction observed in unstructured & semistructured situations at 4, 8 & 12 mths</p> <p>*Groups matched on maternal ed, race, family structure, birth order & sex.</p> <p>*Assessments made of social interaction: 6 measures of maternal/infant affect developed for the study.</p> <p>* Average ed. level of mother was 13 yrs.</p>	*Bayley Scales of Infant Development	<p>*MDI for both groups >100</p> <p>* Preterm group had signif. lower MDI & PDI than the control group at each age tested (main effect $p<0.01$) despite correction for prematurity.</p> <p>*There was an increase in group differences over time (signif interactional effect b/w group & interaction $p<0.05$)</p> <p>*PDI for the preterm group was signif. lower than for the full term group ($p<0.001$)</p> <p>*MDI: Preterm Full-Term 4mth 106 110 12 mth 108 119</p> <p>*PDI: Preterm Full-Term 4mth 104 112 12 mth 93 104</p>	<p>*REEL: Expressive language Receptive Language</p> <p>*Assessed use of protoimperatives by rating performance on 3 tasks requiring the infant to secure the mother's cooperation in obtaining attractive objects.</p>	<p>*No signif. difference b/w groups on receptive skills</p> <p>*Expressive scores were signif. lower for the preterm group than the full term group</p> <p>*Highest level of protoimperatives expressed by preterm infants was signif. below that expressed by full term infants ($p<0.05$)</p> <p>*Preterm infants smiled less often ($p<0.01$) & averted eye gaze from the mother signif. more often ($p<0.05$) than did full term infants.</p> <p>*A signif. group x age interaction for averting indicated that while averting declined with age in both groups, it declined more rapidly in the preterm group.</p> <p>*Throughout the first year the preterm infants displayed less positive affect than did the full term infants</p> <p>*Preterm infants vocalised signif. less frequently than full term infants ($p<0.05$) & received signif. lower scores for clarity of cues & responsiveness on the NCATS infant rating</p>	<p>*Mother of preterm infants vocalised alone more than mothers of full term infants ($P<0.01$). Preterm infants acted alone less than full term. The rate of infant only signalling remained consistent over time for preterm infants but declined for the full term infants.</p> <p>*Compared to mothers of full term infants, mothers of preterm infants spent more time in proximity to their infants ($p,0.01$) & held their babies a greater proportion of the time while in proximity to them ($p<0.001$); mothers of premature infants were more active & stimulating with their infants during early interaction, many of these behaviours persisted across the first year.</p> <p>*Mothers of preterm infants gave more social signals without reciprocal infant signalling while their infants signalled less often than full term infants.</p>	<p>*Uncorrected scores were not reported</p> <p>*No indication of medical complications</p> <p>*Lack of a control group makes interpretation of the results difficult.</p>

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Tudehope, 1983	<ul style="list-style-type: none"> *164<1500 *131 APA BW= 1175 +223 Gest= 29.4 +2.1 *33SGA BW= 1193 +243 Gest= 32.5 +2.7 *No controls 	<ul style="list-style-type: none"> *12& 18 mth 2,3,4 yrs 	<ul style="list-style-type: none"> *All seen at 12 mths corrected age, *56% followed up until 2 yrs, *Only 18% followed up to 4yrs 	<ul style="list-style-type: none"> *Griffiths Mental Development Scale used up to 3 yrs *McCarthy Scale of Children's Abilities used for 3 and 4 yrs assessments 	<ul style="list-style-type: none"> *No signif. difference b/w SGA & AGA infants at 12 mths as assessed by mean G.Q., neurological, intellectual or sensory handicaps. *Details not given on scores at other ages, mean G.Q. given for the last clinic assessment be it at 2,3,or 4 yrs. *The authors state that the mean G.Q. for the combined group was 99.3 however, this was calculated from infants who ranged in age from 12 months to 4 yrs. 	<ul style="list-style-type: none"> *No specific communication assessment performed 	<ul style="list-style-type: none"> *Not reported 	<ul style="list-style-type: none"> *26 (20%) of the APA group who were failing to thrive at 12 mths had sustained more chronic diseases & caretaking disorders in the first year. Many had feeding impairments (figures not given). 11% of this group had neurological & intellectual handicap *Authors state that the combined intellectual and neurological handicap rate of 6.1% & sensory handicap of 4.3% compares favourably with other studies. However, again these figures are derived from infants who were last assessed anywhere from 12 months to 4 yrs. 	<ul style="list-style-type: none"> *No indication given of statistical analyses performed . *Lack of full term control group * G.Q. given separately for 12 mths only. *Amalgamation of scores on last clinic assessment creates problems in interpretation of data-only 18% seen at 4 yrs Dev. at 4 yrs cannot be seen as similar to dev. at 2yrs *No details are given of the nature of the handicaps or a breakdown of handicaps by age group. *Only global measures of cognitive skill used *Subjects seen at corrected age which may have inflated their G.Q.

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Lasky et al, 1983	<ul style="list-style-type: none"> •169 high risk infants 3 groups: •63<1500 + vent. BW=1139 GEST=30 wks •70<1500 no vent BW=1255 GEST=32.4 •36>1500 + vent BW=2195 GEST=35 •83controls matched for 7 SES & demograph variables 	•12 mths corrected	<ul style="list-style-type: none"> •Controls identified via computer search, •Follow-up of high risk infants arranged prior to discharge •All assessment blind •All assessments undertaken in the clinic •Principle component analysis undertaken on IBR. 	•Bayley Scales of Infant Development MDI, PDI & IBR	<ul style="list-style-type: none"> •Scores not reported •Both the MDI & PDI correlated significantly with the first principle component of the IBR (summary of performance on the IBR) 	•Not tested	•Not tested	<ul style="list-style-type: none"> •All groups of high risk infants had less desirable IBR than controls. •Ventilated infants received the lowest ratings, •VLBW ventilated infants more likely to receive ratings characterising an overly active infant with a short attention span •VLBW were most likely to be rated as happy but passive & delayed. •The difference between groups in large part resulted from infants who were also delayed in terms of mental & motor development •The authors comment that interpretation of the findings depends on what is considered an appropriate reference for comparing high risk infants & control infants. They note that parents & friends c.f. C.A. The delay in the IBR may be more striking if using postnatal age. They suggest that this delay may be an additional source of stress for parents where infant/caregiver interaction has already been disrupted because of medical complications. 	<ul style="list-style-type: none"> •Use of corrected ages may have influenced results, •Group means were not reported making interpretation of the results difficult •Assessment limited to the Bayley Scales, •Lack of communication assessments

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Ungerer & Sigman 1983	<p>*20 <2500 BW=1776 +510 Gest=31.3+3</p> <p>*20 full term controls BW=3358 +481 Gest=40.6 +1.3</p> <p>*Matched for Ethnicity, sex maternal ed. & birth order</p> <p>*Included only infants whose general development was in normal / borderline range at 13.5 mths.</p>	<p>*Preterm: mean ages at assessm't: 13.5;15.6; 22.1; 24.2; 36 mths.</p> <p>Full term: mean ages at assessm't: 13.5; 13.8;21.8; 22.2; 36 mths.</p>	<p>*Both groups assessed on 5 occasions: Preterm assessed at 13.5 & 22 mths post natal & corrected; 36 mths corrected</p> <p>*Term assessed twice at 13.5 mths; twice at 22 mths, & once at 36mths.</p> <p>*Where possible each test procedure was administered by a different, independent examiner., not all examiner were naive to the status of the groups; 36 mth assessments were performed by blind examiners.</p> <p>*Free play assessment at 13.5 and 22 mths</p>	<p>1. Five categories of play recorded: simple manipulation; relational; functional; symbolic and sequences</p> <p>2. Stages of sensorimotor Intelligence in the child"</p> <p>3. Gesell Scales at 13.5 and 22 mth assessments</p> <p>4. Stanford-Binet Intelligence Scale at 36 mths</p>	<p>Play: At 13.5 mths postnatal age, preterm showed less mature behaviour than the full term in 3/5 play measures ((p<0.05), By 13.5 & 22mths corrected no signif. differences.</p> <p>Sensorimotor: At 13.5 mths postnatal & corrected ages -sign. diff. b/w groups (p<0.01)</p> <p>Preterm lower on exploration, hidden object, object & support , & tube substest. By 22 mths corrected age- no signif difference. General Development: Sign. diff. b/w groups at 13.5 postnatal age for gross motor & personal - social scales only but not at 13.5 corrected age</p> <p>Preterm: Mean adjusted Gesell DQ = 104.9 +11.2</p> <p>Fullterm: Mean Gesell DQ = 111.3 +5</p> <p>At 22 mths no sign. diff. b/w groups on substests:</p> <p>Preterm: Mean adjusted Gesell DQ = 108.8+16.8</p> <p>Fullterm: Mean Gesell DQ = 121.7+9.1</p> <p>Stanford-Binet: At 3 yrs corrected age diff. in IQ b/w groups approached signif. (p<0.08).</p>	<p>1. REEL: expressive and receptive scales</p> <p>2. Reynell Developmental Language scale</p> <p>Both administered at 22 mths corrected ages</p>	<p>*Preterm group performed significantly poorer on receptive slide task than full term group (p<0.05);</p> <p>Preterm infants identified a mean of 18.7 words, while full term identified 24.9 words.</p> <p>*Differences between the groups on both the expressive and receptive substests of the REEL approached significance (p<.0.10)</p> <p>*Scores on the REEL were not provided</p> <p>*Results of the Reynell were not provided, however, the authors state that there was no significant difference between the groups at 3 years.</p> <p>*Authors suggest that diff. in social interaction b/w preterm & full term infants at end of the first year may contribute to delays in lang. dev. observed at 22 mths</p>	<p>*At 13 mths diff. in biological maturity insufficient to account for disparities in sensorimotor skills b/w groups but preterms showed sign. dev. gains in 2nd year. *Effects of biological immaturity were minimal by 22 mths.</p> <p>*Authors argue that representational abilities reflected in play & sensorimotor abilities develop as function of corrected rather than postnatal age. They give this as support for the use of corrected ages.</p> <p>*Authors suggest that diff. in IQ b/w 2 groups may reflect a more pervasive difference b/w them. Median corrected IQ was 110 for preterms & 123 for full term group. Diff. in IQ in preterms related to neonatal complications. No diff. in social class</p> <p>*Preterm infants performed signif. poorer on problems in visual-info processing; perceptual motor skills</p> <p>*Preterm group had not caught up by 3 yrs to full term infants on general measures of dev. as gestational age still needed correcting to approach those of the full term group.</p>	<p>*Use of corrected ages at 3 years may have masked lang. impairment, given that at 22 mths, authors state that langue of preterm infants was poorer than would be expected from biological immaturity alone</p> <p>*Results of the Reynell not provided</p>

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Vohr & Oh 1983	<ul style="list-style-type: none"> *41 subjects <1500gms seen initially *21 SFD BW1190 +214 Gest=33 +2 *20 AGA BW=1221+182 Gest=29+1 At 5 yrs *19/21 SFD *16/20 AGA Excluded congenital abnormalities and genetic defects *No full term control 	<ul style="list-style-type: none"> *Annually until 5 yrs 	<ul style="list-style-type: none"> *Physical, neurological assessments performed annually in neonatal follow-up programme *Modified Hollingshead score determined for both groups 	<ul style="list-style-type: none"> *Bayley Scales of Infant Development until 3 yrs *From 3 to 5 yrs Stanford-Binet Intelligence Test 	<ul style="list-style-type: none"> *Developmental & IQ scores of the AGA infants were significantly higher ($p < 0.05$) than those of the SGA infants at each visit between 9 months and 3 yrs of age. *At 4 and 5 yrs the IQ scores of the two groups were similar *Catch up phenomenon occurs in development and developmental test scores *Scores for the groups were not reported, however, only one of the SGA had a DQ < 80 at 5 yrs 	<ul style="list-style-type: none"> *No formal assessments performed Neurological examination & subtest on the Bayley's & Stanford-Binet used to determine presence of speech and lang. impairment 	<ul style="list-style-type: none"> *No specific measures reported. *5(26%) of the 5 yrs SGA were reported to have a variety of minor neuro developmental abnormalities, including language delay, fine motor inefficiency and attention deficit compared to 2 (12%) of the AGA group. 	<ul style="list-style-type: none"> *SGA maintained a smaller physique than AGA *15% of SGA had major neurological deficits compared to 12% of AGA. *Socioeconomic & environmental factors play a signif role in influencing developmental outcome in LBW infants *At 5 yrs the relationship between Stanford Binet score & SES was significant ($p < 0.05$) for both groups *suggest that focus should change to providing continued support and education to the socially and environmentally deprived segments of the population 	<ul style="list-style-type: none"> *The use of conceptual age for calculating developmental scores may have inflated the results. *Actual scores not reported, making interpretation difficult *No control group used *small sample size *Lack of standardised assessments particularly for lang. *Limited assessments
Michelson et al 1984	<ul style="list-style-type: none"> *57 < 1501 *excluded severe handicap *39 full term controls matched for place of birth and at same school (no details on SES given for control group) 	<ul style="list-style-type: none"> 9 yrs 	<ul style="list-style-type: none"> *Assessments clinic based 	<ul style="list-style-type: none"> * 	<ul style="list-style-type: none"> * 	<ul style="list-style-type: none"> *ITPA: 	<ul style="list-style-type: none"> *Auditory memory: no signif. difference b/w groups *Auditory association: Significant difference B/W groups ($p < 0.01$) *Auditory closure: significant difference b/w groups ($p < 0.01$) *Sound Blending: No significant difference b/w groups 	<ul style="list-style-type: none"> *28% of LBW receiving speech pathology *4% of controls receiving speech pathology 	<ul style="list-style-type: none"> *Sample sizes quite different

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Dubowitz et al 1984	<ul style="list-style-type: none"> •129 <34 wks Gest=30.9 (27-34wks) •37 PVH •79 no PVH 	<ul style="list-style-type: none"> •12 months C.A. 	<ul style="list-style-type: none"> •Detailed neurological assessment & ultrasound scan in neonatal period & at 40 wks PMA: infants classified as abnormal at 1 yr if had one or more of following: CP, dystonia, global delay (DG<75), clumsiness, hearing or visual deficit. 	<ul style="list-style-type: none"> •Griffiths Developmental Scale; •Corrected and uncorrected DQ calculated 	<ul style="list-style-type: none"> •Scores not reported •Uncorrected DQ <75 was found for 2 of infants with neuro normal at 40 wks; •13 of those abnormal at 40 wks and none who were borderline. 	<ul style="list-style-type: none"> •Not reported 	<ul style="list-style-type: none"> •Not reported 	<ul style="list-style-type: none"> •At 40 wks 69 of 129 classed as normal •At 12 mths, 40 abnormal & 20 borderline. •Of 92 infants without PVH, 57 normal, 20 abnormal, 15 borderline; •Of 37 with PVH 12 normal, 20 abnormal, 5 borderline •At 12 mths, 67 of 79 (85%) without PVH were neuro normal cf 19(52%) of PVH (p<0.05) •Of 62 infants considered normal at 40 weeks, 91% assessed as normal at 12 mths •65% of infants considered abnormal at 40 weeks were considered abnormal at 12 mths; •In neuro normal infant presence of PVH did not influence dev. outcome. •Worse outcome in association with ventricular dilation 	<ul style="list-style-type: none"> •No full term control group •Lack of comprehensive assessments •Cognitive scores not reported thus limiting interpretation of results & comparison with other studies. •Lack of long term follow-up •No indication of the influence of environmental factors.

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Jacob et al 1984	<ul style="list-style-type: none"> *40 preterm <2500; <34 wks (AGA) BW= 1727 +481 855-2494 gm GEST= 32 wks (27-36 wks) excluded known neuro. damage, sensory loss or mental retardation (IQ <60) *40 full term controls matched for sex, race, post conceptual age, SES Mean BW=3544 +313 (SD) GEST=38-42 wks 	<ul style="list-style-type: none"> *3 yrs; 36-51 mths post-concept age; mean= 44.5 mths) 	<ul style="list-style-type: none"> *Data collected at subjects homes over 2 visits within an 8 day period *Assessed at Post-conceptual age. 	<ul style="list-style-type: none"> *General Cognitive, Verbal & Perceptual Performance, Memory Scales of the McCarthy Scales of Children's abilities *Preschool Problem solving Competence Test 	<ul style="list-style-type: none"> *No significant diff.on all scores (corrected & uncorrected) except for the uncorrected perceptual performance subscale *General cognitive scores: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th></th> <th>Corr</th> <th>Uncorr</th> </tr> </thead> <tbody> <tr> <td>Preterm</td> <td>103.8</td> <td>99.7</td> </tr> <tr> <td>Full term</td> <td>-</td> <td>106</td> </tr> </tbody> </table> 		Corr	Uncorr	Preterm	103.8	99.7	Full term	-	106	<ul style="list-style-type: none"> *Denver Articulation Screening test 	<ul style="list-style-type: none"> *No significant difference on test results *8 preterm with abnormal ratings *7 controls with abnormal ratings no indication of severity 	<ul style="list-style-type: none"> *Study group predominantly from blue collar, semiprofessional and professional families; Mo had some college education *Cognitive indexes of preterms with birth weight less than 1786 were lower than full term, significant difference on perceptual- performance scale. No significant difference on verbal or quantitative scales *Significant difference b/w term and preterm preschoolers on measures of verbal ability, memory, problem solving competence, articulation, perceptual and social development. *Authors suggest that preterm children may be more at risk of arithmetic disabilities than reading abilities at school age. 	<ul style="list-style-type: none"> *Use of post conceptual age for assessment of preterm group may have given them an advantage at 3 yrs. Although C.A. age also used, relates to different test items on both McCarthy Scales and Denver Artic. Test. *No indication of medical complications experienced by study group *Communication assessments limited to articulation *Generalisability of the study limited because of the nature of the sample (all mothers had some college ed) & preterm infants who did not participate in the study may have had less favourable outcomes (refer Siegel 1982)
	Corr	Uncorr																
Preterm	103.8	99.7																
Full term	-	106																

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McAllister et al 1985	<ul style="list-style-type: none"> •118 infants •3 groups •Mech Vent + BW >1499 •Mech Vent + BW <1500 •No Mech vent + BW <1500 •No full term control group 	•36 mths corrected	<ul style="list-style-type: none"> •Corrected & uncorrected ages were initially used for comparison however, the incidence of speech & lang. problems made using only corrected age. •Language sample collected during play with mother in room but not participating 	•Not reported	•Not reported	<ul style="list-style-type: none"> •Reynell Developmental language scale •Edinburgh Articulation Test •LARSP •OMA 	<ul style="list-style-type: none"> •No signif. difference b/w study groups on any measure •Signif. difference b/w the normal population mean & the sample mean for measures of comprehension & articulation •No signif. difference b/w corrected scores & population mean. •Report that most commonly occurring age range for LARSP was 24-36 mths- although 6-12 mths below age range the authors designated as appropriate for this age group •23% considered to have an articulation problem using corrected scores •22% considered to have expressive language delay- with lower range taken as the norm •4% had definite oromotor problems and 20 % had questionable performance. •13% rated to have a moderate to severe communication impairment and 10% rated as mild 	<ul style="list-style-type: none"> •Although the authors comment that the OMA results may have been due to fatigue, the score corresponds to the high percentage with articulation impairment •Correlation between birth weight and expression only •Correlation b/w gestation & expression •SGA not associated with speech & lang. outcomes •Paediatric complications associated with both expression & comprehension •Maternal education associated with comprehension 	<ul style="list-style-type: none"> •No data to substantiate the authors suggestion that the age ranges on the LARSP are inflated and thus their use of the age range of 24-36 mths as the norm •age ranges on the LARSP are inflated no full term control group for comparison •Cognitive results not reported making comparison with other studies difficult. •Use of corrected ages may have inflated results, supported by finding that 22% of infants were considered to have expressive lang. skills above the norm

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Miller, Dubowitz and Palmer 1984	114 preterm Gest <34wks *No full term controls	*6,9,12,18 mths	*Developmental & neurological assessment at at least 3 of the ages; *Comparison of use of corrected & uncorrected ages for identifying "abnormal" infants *Abnormal neuro divided into 3 groups: 1.Cerebral Palsy 2.Dystonia 3.Motor delay *Corrected & uncorrected DQ of infants with abnormal findings at 1 yr cf with infants with no abnormal findings	Griffiths Scales DQ>80 considered in normal range	*Found that when using corrected ages that there was a steady fall in mean values of DQ. *Infants without abnormal signs at 1 yr constituted a different population relative to DQs than those with abnormal signs even when the signs are mild. *Infants with abnormal findings had a mean of 24% of uncorrected DQs >80, whereas the mean was 89% when the DQ is corrected. *When corrected DQ was used, no infant had <80 at 6 mths, but when uncorrected values used 70% of infants with abnormal findings had IQ<80 *Separation of DQ became more obvious after 9 mths *78/114 had no abnormal signs at 1 yrs *at 18 mths: 78 had normal findings: corrected: 103+ 8 uncorrected: 92 +7 36 abnormal findings: corrected: 85+13 uncorrected: 74+11	Not reported	Not reported	*Implication of correction is that preterm & term are equivalent once corrected. *Authors argue that a simple linear correction cannot be applied to this population *Concern by others re: overcorrection (Hunt and Rhodes 1977; Palmer et al 1982) *State that although motor abnormalities detected in early childhood may lessen, change or disappear these are children who are at increased risk of later abnormalities of learning and behaviour.	*Lack of control group *Lack of details about subjects *Limited assessments, only looked at cognitive skills, *Age at follow-up-lack of long term data

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Silva et al 1984	<ul style="list-style-type: none"> *850 subjects: *31 AGA *71 SGA *748 FT NBW 	*3,5,7,9 yrs at uncorrected ages	<ul style="list-style-type: none"> *IQ tests at 3,5,7,9 yrs *Parent and teacher reports at 5,7,9 yrs *Measures of SES, maternal intelligence *All assessments carried out by blind examiners 	<ul style="list-style-type: none"> *Stanford-Binet Intelligence Scale at 5 yrs *Weschler Intelligence Scale for children-Revised used at 7 and 9 yrs 	<ul style="list-style-type: none"> *SGA but not preterm group had significantly ($p<.01$) lower IQ means than the NBW group. *IQ scores at 9 yrs: Preterm($n=30$): 101.5 +12 SGA($n=71$): 95.5 +19.6 NBW ($n=748$):101.5 +14.1 *Rutter scale score at 9 yrs: Parent: Preterm($n=30$): 9.7+6.4 SGA($n=71$): 9.3 +5.6 NBW ($n=748$):8.0 +5.4 Teacher: Preterm($n=30$): 5.2+5.9 SGA($n=71$): 4.3 +4.8 NBW ($n=748$):4.2 +5.2 	*PPVT at 3 yrs	<ul style="list-style-type: none"> SGA group had significantly ($p<.01$) lower mean than the NBW group Standardised PPVT scores: Preterm: 97 +12 SGA: 95.5 +16.2 NBW: 100 +14.7 	<ul style="list-style-type: none"> *No significant difference between groups for SES or maternal intelligence *SGA but not the AGA group had significantly more behavioural problems than the remained of the sample 	<ul style="list-style-type: none"> *Communication assessments only performed at 3 yrs *Limited communication assessments *No indication of academic performance or need for remedial assistance in the classroom
Zubrick 1984	<ul style="list-style-type: none"> *371 infants from 619 live births meeting criteria: *<2000gm *<34 weeks gest *5 min appar<4 *Failure to sport resp within 5 min *Serious neonatal morbidity *No details given of controls 	*4 & 6yrs	<ul style="list-style-type: none"> *At 4 yrs -assessment carried out by Child Health Nurse Scored by speech pathologists/ psychologists *At 6 yrs- teachers performed behavioural & academic measures plus Health check by school health sister 	*No details given of measures used	<ul style="list-style-type: none"> *Scores not reported *Reported significant differences in maths, reading & spelling for children of LBW or low gestation 	<ul style="list-style-type: none"> *At 4 yrs- Renfrew Action picture Test-scored for information/ grammar *Repetition of ten monosyllables *Identification of 8 body parts *Answers to 4 complex questions\ discrimination of three adjectives *Comprehension of 5 prepositions *At 6 yrs- no information given 	<ul style="list-style-type: none"> *Scores not reported *Reported that 11% of the group had speech & language disorders compared to 2.5-6.% of the preschool population according to epidemiological studies 	<ul style="list-style-type: none"> *Suggest that low birth weight infants are at risk of speech & language impairment than the general population. 	<ul style="list-style-type: none"> *Lack of information about academic and behavioural measures used *Lack of control group details *Lack of reliability and validity information regarding choice of language assessments *Heterogeneity of sample particularly NBW group

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Ross, Lipper and Auld(1985)	<ul style="list-style-type: none"> *94 <1501gms BW=1173+208(SD) Gest=29+2(SD) Includes neuro. abnormal (n=12) *No controls 	*1 yr; 3-4yrs	<ul style="list-style-type: none"> *At 1yr assessed by paediatrician & psychologist *Assessed between 3-4 yrs by psychologist & paediatrician 	<ul style="list-style-type: none"> *Bayley Scales of Infant Development MDI & PDI *Stanford-Binet Intelligence Scale 	<ul style="list-style-type: none"> *Mean MDI= 93.7 +17.3(SD) Mean PDI= 88.5+18.3 (SD) 34>1SD 35% suspect or abnormal *Mean IQ= 92.8+20.7(SD) 31% suspect or abnormal 	<ul style="list-style-type: none"> *Reynell Developmental Language Scale *Articulation subtest of Preschool Language Scale 	<ul style="list-style-type: none"> *34>1SD below norm *37 articulation deficit *Poor neuro & delayed motor functioning at 1 yr signif. related to lowered IQ, expressive lang. delay & articulation deficit *Lower mental ability signif. predicted expressive lang. delay & articulation deficits 	<ul style="list-style-type: none"> *More than 80% of children classified as normal/ abnormal in mental ability, neuro functioning or cerebral palsy status remained in those categories at 3-4 yrs *Improvement in neuro. maturation may be related to physical therapy recommended for all infants neuro abn at 1 yr *16 diagnosed with cerebral palsy 8 children diagnosed as CP at 1 yr but neurologically normal at 3 yrs were signif. more likely to have lower IQs than those in the "always normal" group (P,.006) & significantly more likely to have articulation deficit (p,.05) *Mental ability more likely influenced by social and environmental factors than is neurological status 	<ul style="list-style-type: none"> *Lack of normal control group *Limited communication assessments *Use of corrected ages may have inflated results

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Mohay et al 1985	•118 <1500 or required prolonged mechanical ventilation	•1,4,8,12, 24 mths corrected	<ul style="list-style-type: none"> •Identification of factors predictive of speech & lang. problems. •Test scores from all assessments except LARSP recorded & grouped on basis of SD. LARSP group in 6 mthly intervals •Correlations then obtained with Griffiths 	•Griffiths Scale of mental abilities	•Not reported, however, state that mean was within the average range at each age	<ul style="list-style-type: none"> •Edinburgh Articulation Test •Reynell Developmental Scale-comprehension Scale A •LARSP 	<ul style="list-style-type: none"> •Scores not reported •10/102 identified as having abnormal comprehension skills at 3 yrs; 20/102 had abnormal expressive language skills; 17/102 had abnormal articulation skills •None of 1 or 12 mth Griffiths scores was signif. related to lang. development at 3 yrs; • Signif relationship b/w locomotion development at 4 mths & expressive lang. at 3 yrs . •No significant relationship b/w lang & other locomotion or finemotor manipulatory skills. •Scores at 8 & 24 mths had highest correlation with lang. scores. •Hearing & speech subscale had highest correlation. • GQ was signif. related to all aspects of lang. development. •Social/ personal subscale had significant correlation to receptive & expessive lang. all weak correlations indicating that infant test scores a/c for small proportion of variance in lang. development. 	<ul style="list-style-type: none"> •Results suggest that the best predictors of S & L dev at 3 yrs are measures of S & L in infancy. •Suggest that infants who have low scores on S & L measures at 8 and 24 mths are a high risk group for later S & L problems 	<ul style="list-style-type: none"> •12 mths delay used as criteria for delay on LARSP; concern that this with correction, inflates abilities of these infants. •Lack of control group for comparison. Using their criteria over 80% had normal lang. development at 3 yrs. •No indication of which subjects had impairment in one or more areas. Numbers with Speech & Lang. impairment may be larger if same children didn't have impairment in all areas. •No measures of environmental influences on outcomes

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Ross 1985	<ul style="list-style-type: none"> •92 infants •46 preterm BW=1310+353.4 Gest=29.9 +1.9 •46 full term BW=3564 +301.5 Gest=39.6 +1 •Matched on social class, sex and birth order 	•1 yr-corrected age	<ul style="list-style-type: none"> •Only middle class families selected for study •Examiner blind to study •All assessed within 1 week of 1 year post term 	•Bayley scales of Infant Development- MDI & PDI	<ul style="list-style-type: none"> •Both groups achieved mean scores within the normal range on both the MDI and PDI •Full term scored signif. better on both MDI & PDI than the preterm infants •Preterm infants evidenced greater disparity b/w MDI & PDI scores than Full term infants •Preterm & Full term infants performed better on MDI than the PDI •Preterm infants exhibited greater variability than term infants in their performance on both scales 	<ul style="list-style-type: none"> •Kohen-Raz subscales of the Bayley Mental scale •No specific speech language assessments used 	<ul style="list-style-type: none"> •Imitation-comprehension was significantly poorer for the preterm than full term group •Vocalisation-social contact-active vocabulary was significantly poorer for the preterm than the full term group 	<ul style="list-style-type: none"> •Preterm infants with lower than normal Bayley's were more likely to have had low Appgars at 1 min & more extensive ICH 	<ul style="list-style-type: none"> •Limited follow-up •Lack of comprehensive communication assessments •Use of corrected ages could have inflated results for preterm group.
Hubatch et al 1985	<ul style="list-style-type: none"> •10 preterm BW=1197 Gest=30 wks •Subjects had to have a Bayley score of >80 for inclusion in the study •10 full term controls, had to pass Denver •Eliminated SGA, IVH 	•Approx 2 yrs	•Control solicited from newspapers stating they required children for 18-20 months in a single word stage of speech & lang development for a study	•Bayley scales of Infant development	•Mean MDI= 91.1	<ul style="list-style-type: none"> •Receptive Vocabulary Test •Linguistic concept test •Parent-child language sample 	<ul style="list-style-type: none"> •Control subjects demonstrated superior performance on all receptive lang. & child verbosity measures despite their younger age •Age was the most powerful variable in separating the two groups, the RDS subjects being older. •At the time of single word utterances, the adjusted ages of the preterm RDS children exceeded the ages of the control group by 4 months 	<ul style="list-style-type: none"> •Suggest that RDS children may be less efficient in abstracting essential common features necessary for concept information and/or for learning the name of a concept once formed. •Important to notice that all of RDS had average performance on tests of mental development for inclusion in the study- yet they had comprehension deficits. 	<ul style="list-style-type: none"> •Continued use of corrected ages for preterm group may have minimised their delay •No indication of the impact of environmental influences on outcomes. •Limited follow-up

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Volhr & Coll 1985	<ul style="list-style-type: none"> *42LBW <15001gms *No full term controls 	*3 to 4,5 & 7yrs	<ul style="list-style-type: none"> *Hollingshead four factor index; during first year, infants classified as normal, suspect, abnormal (CP, blind, deaf)- basis for dividing into 3 study groups: *22 normal *12 suspect *8 abnormal *No significant difference between groups on birth weight, gestation, sex , & Hollingshead index. *Questionnaire completed by schools on resource needs, special ed. placement & academic performance 	<ul style="list-style-type: none"> *At 1 yr: Bayley Scale of Infant Development- MDI and PDI *3 to 5 yrs: Stanford-Binet Intelligence Scale *For subjects who were blind; Psychological Stimulus Response Evaluation and the verbal portion of WPPSI *At 7 yrs: Stanford Binet Intelligence Scale, the Beery Visual Motor Intelligence Test & the Wide range Achievement Test for reading Block design from the WISC-R 	<ul style="list-style-type: none"> *Mean MDI for the abnormal group at 1 yr was signif. lower than mean for the normal group *Mean IQ of the abnormal group remained signif. lower than the normal group at 3-4,5 & 7 years *Despite IQ in normal range, all but 4 of 42 had an increased incidence of learning problems, esp. visual-motor integration: *45% of the normal group had visual-motor integration scores that fell below the 50 percentile, although 90% had age appropriate reading skills; *75% of suspect group had visual- motor integration scores that fell below the 50 percentile, & 58% had reading skills below the 50 percentile; *All 5 in the abnormal group had visual- motor integration scores that fell below the 50 percentile, & 4/5 had reading skills below the 50 percentile. 	*No specific language assessments used	<ul style="list-style-type: none"> *None reported, however, oral motor skills were poorest for the abnormal group; query articulation development for this group *7 of the 42(16.6%) were having speech and language therapy 	<ul style="list-style-type: none"> *All 8 infants identified as abnormal at 1 yr of age remained abnormal through out t the period of the study. *At 7 yrs, soft neuro signs were present in 5 of the 22 classified as normal at 1 yr; *Gross motor performance of the suspect group was significantly less proficient than that of the normal group; *There was a significant difference between the Normal and Abnormal group on all subtests of the Riley Motor examination: oral motor, fine motor, gross motor and overall. *Overall, 47% of children required alternative education plans at 7 years: 27% of normal group 50% of suspect group and only 87% of the abnormal group 	<ul style="list-style-type: none"> *Lack of control group. *Small sample size particularly for abnormal & suspect groups *Lack of communication assessments

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Meisels et al 1986	<ul style="list-style-type: none"> •37 <2501 •20 RDS: BW=1527+302(SD) Gest:31.5wks+1.5(SD) •17 BPD: BW:1292+519(SD) Gest:30.1+2.8(SD) •Excluded any with: CNS, neuromuscular or sensory disorders; hydrocephalus; IVH>Gii severe SFD <10%; severe congenital deformities severe hyperbilirubinemia; metabolic disorders. No full term control group 	<ul style="list-style-type: none"> •Subjects studied at either 12 or 18 months post hospital discharge •12 months PHD: 10 RDS 9 BPD •18 mth: 10 RDS 8 BPD 	<ul style="list-style-type: none"> •Assessments carried out over 2 days separated by 7-10 day period •All assessments performed by blind examiners 	<ul style="list-style-type: none"> •Bayley Scales of Infant Development: MDI PDI •5 of 7 Uzgiris and Hunt Scales •Scores corrected for prematurity 	<ul style="list-style-type: none"> •No signif. difference in results of ventilated vs nonventilated RDS subjects •Developmental outcomes of BPD infants signif. poorer than RDS infants •Signif. difference b/w BPD & RDS infants for: <ol style="list-style-type: none"> i. MDI (p<.0005) ii. PDI (p<.05) iii. Uzgiris & Hunt avg deviation (p<.001) •BPD infants: Mean MDI= 86.1+13.7(SD) 35% had a delay of >1SD on MDI Mean PDI= 90.1+17.1(SD) 47% had a delay of >1 SD on PDI •RDI infants: Mean MDI= 106.9+16(SD) 5% had a delay of >1 SD on MDI Mean PDI= 102.6+19.4(SD) 10% had a delay of >1 SD on PDI 	<ul style="list-style-type: none"> •REEL 	<ul style="list-style-type: none"> •Signif. difference b/w scores on REEL (p<.05) •RDS: 105.4 +19.1 (SD) •BPD: 90.6+22(SD) 	<ul style="list-style-type: none"> •The use of TPD for assessment resulted in infants with BPD being older than RDS group •The use of TPD may have contributed to higher scores for BPD group because it provided these infants with more time for recovery from their postnatal illness. 	<ul style="list-style-type: none"> •Lack of normal control group for comparison •No information on social variables •Reliability & validity of the REEL questionable •Limited communication assessments •The use of corrected ages may have inflated the scores for both groups •No indication of the numbers excluded from the study according to selection criteria-

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Byers-Brown et al 1986	<ul style="list-style-type: none"> *33 LBW <1500 gms GEST= 27-33 wks *No normal control group 	*9-22 months corrected	<ul style="list-style-type: none"> *Subjects divided into 2 groups: *21 IVH (x= 1206) *12 non-IVH (x=1094) *Ultrasound studies performed *3 situations: Free play Visual stimulation in experimental condition standardised testing 	*Bayley Scales of Infant Development	*Scores not reported	<ul style="list-style-type: none"> *SICD *Speech Sound rating Scale 	<ul style="list-style-type: none"> *Score not reported Significant correlation between speech rating and expressive SICD ($r=0.80$; $p<.001$) *Both IVH and non-IVH groups had delayed speech sound development c.f with that reported in literature *IVH group significantly more delayed than non-IVH group - marginally significant ($p<.06$) *IVH have a wider range of speech ages and speech delays (16 to -4 months) than non-IVH (6 to -1 months) 	*IVH group had significantly more medical complications	<ul style="list-style-type: none"> *No full term control group for comparison *No indication given of the receptive skills of these infants *Use of corrected ages may have inflated results for preterm infants *Cognitive scores not reported limiting interpretation of results. *Lack of long term follow-up
Eilers et al 1986	<ul style="list-style-type: none"> *33 < 1250 gms *Control group-siblings 	*5-8 yrs	<ul style="list-style-type: none"> *Teacher questionnaires: classroom grade; type of classroom, remedial/special ed classes, standardised testing rating of academic performance *Physician questionnaires 	*One measure not used for all subjects	*Not reported	*One measure not used for all subjects	*Not reported	<ul style="list-style-type: none"> *16 of the 33 (48%) were functioning at Grade level with no remedial instruction. *14 in regular classrooms with remedial instruction *3 in classes for children with major handicaps *Only 3 (27.2%) of the 11 SFD in regular classrooms cf 13 of 22 appropriate for gestational age ($p<.05$) *Although 91 % of VLBW in regular classrooms, 47% required remedial instruction cf 19.9% of general population *Children not requiring remedial instruction were born to older mothers ($p<.05$) and came from higher SE households ($p<.10$) thus children with younger mothers and from lower SE households had an increased need for remedial instruction 	<ul style="list-style-type: none"> *Standardised testing not performed on all subjects *Siblings acted as controls but no data provided on them *Lack of consistent communication assessment *Lack of consistent cognitive assessment for all subjects. *Lack of true normal control group. *No indication of impact of environmental variables on outcomes.

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Holwerda-Kuipers 1987	<ul style="list-style-type: none"> •30 preterm <34wks & bw>10 percentile for dates •40 SFD <34 & <2.3 percentile for dates •105 controls matched for sex, age, birth order & SES •Severe handicap excluded. •Included neuro. abnorm. or suspect. 	•4.5 to 6yrs uncorrected	<ul style="list-style-type: none"> •Assessed prior to entering first grade of primary school •Controls divided into 6 groups according to weight & neuro status at birth •4 study groups on the basis of gestation, weight & neuro status at birth 	<ul style="list-style-type: none"> •Leidse Diagnostische Test 1976- 7 subtests used- lang. skills •spatial insight/ understanding tasks & memory tasks •Piaget tests: i. degree to which child could make use of ideas such as more, less, shorter longer ii. Capacity of the child to seriate on the basis of ideas such as length, weight and width 	<ul style="list-style-type: none"> •No signif. difference in IQ between LBW, SFD or control groups. •Combined results of Piaget tests and IQ, LBW significantly poorer than Term, on-weight and neurological normal •Signif. difference in IQ b/w neurologically normal group & neurologically suspect/abnormal group (both NBW & LBW) •No signif. difference b/w LBW & neurologically abnormal children 	•No specific language assessments used	•No results reported	<ul style="list-style-type: none"> •The authors suggest that although such a developmental lag may ultimately be outgrown in the area of rational thinking it may effect the development of other cognitive areas such as language skills, spatial and social understanding 	<ul style="list-style-type: none"> •No indication given of the number of subjects in each of the analysis groups. •No indication given as to whether any of the children had received intervention •No specific communication measures used.
Stevenson et al 1988	<ul style="list-style-type: none"> •19 preterm GEST=34 31-36wks: BW=2118g 1460-2420g •19 full term GEST=40w (38-43 wks: BW=3530g 2849-4408 •Matched for education levels- from lower to upper middle class caucasian families 	•8 months corrected	<ul style="list-style-type: none"> •Two visits approx 1 week apart made to laboratory play room-feeding situation/ assessment of cognitive and communication skills 	<ul style="list-style-type: none"> •Subscales of Uzgisir & Hunt's Scales -Development of the permanence of objects -Development of operational Causality -Development of means for obtaining desired environmental events -Construction of object relations in space 	•Preterm infants had signif. higher scores on understanding causality than full term infants	<ul style="list-style-type: none"> •Receptive tasks: -the names of familiar people -named toys -names of absent people -verbal cues for games such as pat-a-cake -participation in familiar games with verbal and action cues •Production tasks: Count of number of infant vocalisations within 100 mother utterances •Number of recognisable words 	<ul style="list-style-type: none"> •Infant receptive language was signif. correlated with cognitive performance, infant sociability & birth status •Productive lang. was signif. correlated to cognitive performance. •Signif. correlation b/w performance on Construction of object relations in space •understanding of names of objects •understanding of games presented with words & actions •Preterm infants had signif. higher scores on the measure of understanding peoples names •Signif. correlation b/w the number of words used by the infant & performance on object permanence task 	<ul style="list-style-type: none"> •Differences between preterm and term groups may reflect over correction of preterm group- preterm may have receptive language advantage due to additional extrauterine experience: Authors state that this finding echoes the suggestion by hunt and Rhodes (1977) of the dangers of over correction 	<ul style="list-style-type: none"> •Although authors comment on the effect of extra-uterine experience on receptive language no measures of environmental influences on outcomes included in the study. •Interpretation of results limited by the lack of long term follow-up of these subjects. •Small sample size limits generalisability

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Lewis and Bendersky 1989	<ul style="list-style-type: none"> *32 LBW <1500 *19 IVH BW=1216 +136.7 GEST=29 +1.43 *13 non-IVH BW=1101 +190 GEST=30.5 +1.76(SD) *No full term control group 	*Mean age =15 mths	*Assessment of information processing ability in habituation/ recovery paradigm & Standardised testing of mental, motor and lang. development were performed in a laboratory	<ul style="list-style-type: none"> *Bayley Scales of infant Development MDI and PDI *Scores corrected for prematurity *Information processing ability in habituation/ recovery paradigm 	<ul style="list-style-type: none"> *IVH group: Mean MDI= 71.84+17.83(SD) Mean PDI= 69.63+18.09(SD) *Non-IVH group Mean MDI= 102.69+14.8(SD) Mean PDI= 96.62+16.92(SD) Scores for non-IVH group were within normal range when corrected (as above) but not for IVH group Severe IVH performed significantly poorer than non-IVH No significant differences in attention measures 	*SICD	<ul style="list-style-type: none"> *IVH group: Mean CQ= 0.83+0.21(SD) *Non-IVH group: Mean CQ=1.03+0.16(SD) significant difference between groups. *Scores for non-IVH group within normal range when corrected for prematurity as above. 	<ul style="list-style-type: none"> *SES was correlated with language as well as response recovery *Significant relationship b/w lang. & medical complications, consistent with Landry et al (1990) *Lang. ability which was correlated to IVH status was no longer rated when variance attributable to SES & other medical complications was removed. 	<ul style="list-style-type: none"> *Use of corrected age may have inflated results for preterm groups *No full term control *Lack of long term follow-up limits interpretation of results

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Achenbach et al 1990	<p>3 group: *32 <2250 BW= 1540.8 +385.2 GEST= 32+2.7</p> <p>*24<2250 (intervent'n) BW=1637.9+418 Gest=32.3+2.1</p> <p>*37 >2800 controls BW= 3475.8 +429.5 Gest= 39.9+1.2</p>	*7 yrs uncorrected - all assessed in summer of 7th birthday	<p>*Hollingshead (1957)</p> <p>*Home observation during first year.</p> <p>nurses ratings of mothers responses</p> <p>mothers self rating of behaviours</p> <p>*Assessments performed in children's homes.</p>	*Kaufmann Assessment Battery for children (1983)	<p>*LBW control Mean Kaufmann: Achievement 101.7+14.3(SD) Mental Processing Composite 96.6+11.5(SD) Sequential 98.4+13.7(SD) simultaneous 96+11.5(SD)</p> <p>*Normal Birth weight: Mean Kaufmann: Achievement 104.3+14(SD) Mental Processing Composite 106.1+11.2(SD) Sequential 105.6+13.4(SD) simultaneous 105.4+11.2(SD)</p> <p>*When adjusted for Hollingshead socioeconomic status by Ancova, there was a significant difference between the Kaufmann MPC, Sequential & Simultaneous Scales for the LBWC & the NBWC</p>	*Peabody Picture Vocabulary Test-Revised	<p>*LBW control Mean=103.5 +17.9(SD)</p> <p>*Normal Birth weight: Mean=111.2+17.5(SD)</p>	<p>*Authors acknowledge the difficulties of not having the same assessment tools throughout the study (referring to use of Bayley and McCarthy scales during the first 4 yrs)</p> <p>*Although the scores were corrected, the authors comment that it had little effect on the standard scores obtained</p> <p>*LBW controls had signif. lower Hollings head class score than the normal birth weight group</p>	<p>*Limited communication assessments-receptive lang. only no indication of expressive language skills</p> <p>*No indication of the need for special education</p>

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Landry et al 1990	<p>*25 high risk LBW (BPD &/or IVH G111 &GIV) BW=1240+327(SD) GEST=29.5+2.4(SD)</p> <p>*23 Low risk LBW BW=1277+239(SD) GEST=31.2+1.81(SD)</p> <p>*21 Full term BW=3200+760(SD) GEST=41+2.1(SD)</p> <p>*5% of the sample excluded because of gross sensory handicaps or severe CP</p>	*3yrs	<p>*Children videotaped with their mothers in a playroom: two situations</p> <ol style="list-style-type: none"> 1. Mo assisting child construct puzzle 2. Tea party <p>*A 2 person team coded maternal & child behaviours</p> <p>*No signif. difference in demographic or medical variables were found b/w those infants who participated in the study & those that did not.</p> <p>*Preterm infants attended follow-up at 6,12, 24,36 mths of age</p>	*Stanford-Binet Intelligence Scales	<p>*High risk (HR): Mean IQ=79.04+16.82</p> <p>*Low risk (LR): Mean IQ= 100.39+14.96</p> <p>*Full term (FT): Mean IQ= 111.43+16.61</p> <p>*HR had signif. lower IQ than LR & FT; with mean HR in the below average range of intelligence.</p> <p>*LR had signif. lower scores than FT but were within 1 SD of mean for test</p>	<p>*Interaction between mother and child coded across two situations</p> <p>*Coded maternal behaviours related to each maternal attention directing attempt made by the infant</p> <p>*Each time the mother directed the child, or restricted the child, the child's behaviour was recorded for compliance or non-compliance:</p>	<p>*Degree of medical risk was found to be associated with impairments in self directed behaviour & the quality of response to maternal directives;</p> <p>*HR had signif. less frequent self-directed behaviours than the LR group in both cognitive & social contexts</p> <p>*HR had greater proportion of inappropriate behaviours than the LR & FT groups</p> <p>*Authors state that this type of abnormal social response has been associated with CNS insult & is a form of noncompliance that probably reflects not understanding maternal requests rather than refusing to comply</p>	<p>*Negative association found b/w maternal directiveness & children's self-directed behaviours ($p<0.006$);</p> <p>*Mother's praise showed a signif. positive relation to self-directed behaviour ($p<0.001$).</p> <p>*Mo of both LBW groups provided fewer choices than Mo of full term infants;</p> <p>*Authors state that the high level of cooperation & infrequent refusals in response to Mo requests show normal development of certain social abilities despite severe, neonatal medical risk.</p> <p>*Differences in HR social behaviours not only related to lower IQ & directiveness but also to medical risk, suggests that their cognitive limitation had resulted in fewer opportunities for social interactions & more difficulty learning from these experiences.</p> <p>*Mothers perceived that HR infants were less persistent & less intense in response to stimulation, consistent with problems evident in social interactions</p>	<p>*No formal assessments of communication outcomes to enable comparison with other studies.</p> <p>*Unclear if preterms assessed at 3 years C.A. or corrected age.</p> <p>*No indication of the impact of environmental influences on outcomes.</p>

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Williamson et al, 1990	*61 VLBW BW= 1082+221 GEST= 28.9+2 *Criteria for inclusion: 1. general dev. within 2 SD of test mean on Bayley & McCarthy Scales 2. Absence of major motor or sensory impair'mts *28 full term infants assessed at 12 mths only	*3 yrs Preterm group	*Developmental profile of infants assessed as non-handicapped at 12 mths	*Revised Gesell at 12 mths C.A. Term:47 +7.5 Preterm: 53+5(uncorrect) 42+5 (corrected) *Bayley scales of Infant Dev. at 21mths C.A. *McCarthy Scales of Children's Abilities at 3 yrs	*Results of Bayley Scales & McCarthy scales are not reported as constitute inclusion criteria *DQ for control group was marginally signif. higher than corrected DQ for VLBW group.(p=0.057) *Profiles of groups were different: VLBW more likely to have discrepancy b/w fine motor or lang. abilities & early problem solving skills as measured by Adaptive scale of Gesell *Across all fields of behaviour (adaptive, gross motor, fine motor lang. personal /social, LBW scored signif. below full term	*No specific assessment;	*Language scores on Gesell particularly correlated with intracranial haemorrhage BW & Sex *Even with correction 11 VLBW had lang. delay ed >8 wks; 20 had 4-7 week delay only 30/61 had no delay *Developmental profiles of non-handicapped VLBW infants c.f. full term infants revealed that: 1. VLBW more likely to have a discrepancy b/w fine motor &/Or lang. abilities and early problem solving 2. VLBW scored more poorly than full term infants on most measures	*Signif. variability in fine-motor-adaptive & lang.-adaptive profiles of with term infants *1/3 of infants had signif. delays in lang. &/ or fine motor performance of adaptive functioning	*Correction for prematurity may have inflated results for preterm infants *Sample sizes for the LBW & full term groups very different *Control group only assessed at 12 mths *Lack of specific communication measures used *No indication of the influence of environmental influences on outcomes *No indication of full term results at 3 years.
Kilbride 1990	*60 LBW born 1983-1985	*12-36 mths	*Comparison of survival & outcome of infants 1980-82 & 1983-85;	*Bayley Scales of Infants Development MDI only after 30 mths: *Stanford Binet Intelligence Scale both corrected for prematurity	*12 mths (n=29): MDI= 86+18(SD) *36 mths (n=17): IQ=92+12(SD) *46% neuro-dev. normal at mean age of 27 +8 mths *Major disability defined as severe visual or hearing impairment, CP excluding mild cases, or CMDI or CQI <68.	*Not reported	*Not reported however, report that verbal skill delayed in "most" patients *High incidence of conductive hearing loss	*1980-1982: 67% had a major disability; 67% had CMDI of <84; 33% CMDI<68 , only one considered "normal" *1983-85: 13% 6/46 had major disability *Data reflects signif. increase in survival & improved outcomes for this population	*No control group *No indication of SES etc *Use of corrected ages may have inflated scores *No communication measures *

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Casiro et al, 1990	<ul style="list-style-type: none"> *32 VLBW BW=1174 +264 GEST=29 +2 *33 controls BW=3320 +340 GEST=39 +1 *Excluded 2 VLBW with severe neurological handicaps & DQ<70. 	*12 mths CA	<ul style="list-style-type: none"> *SES assessed using Hollingshead Scale *Scores for paternal & maternal ed, computed for each family. *Corrected age used to calculate scores for VLBW groups *Neurodev assessment carried out by paed *Speech & lang. assessments performed by speech path. blind to study *Hearing assessed by an audiologist using sound field, behavioural, observational & visual reinforcement audiometry as well as acoustic impedance measures 	<ul style="list-style-type: none"> *Gesell-revised *Definitions for degree of neuro abnormality based on Nelson & Ellenberg (1982) 	<ul style="list-style-type: none"> *Although the DQ for both the VLBW & Control groups was within the normal range, VLBW infants had signif. lower DQ than Controls despite correction for prematurity *5/32 had adjusted adaptive DQ >70 & <85. 	<ul style="list-style-type: none"> *REEL *Reynell 	<ul style="list-style-type: none"> *Control group had signif. higher scores than the VLBW group on the receptive & expressive scales of the REEL and the Reynell *For VLBW infants lang. quotients directly associated with gest. age & 5 min apgar & inversely related to severity of IVH, BPD & length of hospital stay. *Variability in VLBW group greater than for control group. *39% of VLBW had signif lang delays *VLBW had shorter attention span, were less likely to understand simple questions, to recognise objects or body parts when named, to initiate speech-gesture games, to follow simple commands and to imitate or use words consistently. *VLBW small for gestational age had more advanced lang. skills than VLBW appropriate for gestational age. *6/19 VLBW infants with normal neuro. had lang. delays. *5/9 with abnorm neuro. had lang delays. 	<ul style="list-style-type: none"> *9/32 VLBW had bilateral abnormal impedance tympanometry, 1/32 had a unilateral abnormality. *4/32 abnormal impedance tests associated with abnormal bilateral soundfield audiometry responses while none had unilateral deficits. *9/40 full term controls had bilateral abnormal impedance tympanometry, 3/33 had unilateral abnormality *Controls with abnormal audiometry had signif. lower lang. scores than those with normal audiometry, however, no signif difference for the VLBW group. *7/28 VLBW infants had mild & 2/28 had moderate neuro. abnormalities. *Authors conclude that influence of prematurity & VLBW on lang. dev. is complex & multifactorial. 	<ul style="list-style-type: none"> *Correction for prematurity may have inflated results for preterm group *Need for further long term follow-up. *Lack of comprehensive communication assessment *No indication of the number of Control group subjects with abnormal neuro.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Grunau et al (1990)	*23 ELBW BW= 792 +84 GEST= 26 +1.0 *23 full term controls	*ELBW 3 yrs corrected *Controls- 3 yrs	*Subjects matched by sex, corrected chronological age & maternal ed. *ELBW given a full hearing evaluation by an audiologist *Controls were required to pass a hearing screening *Hollingshead rating of SES on all subjects.	*Stanford-Binet-revised	*Full term controls had signif. higher composite and individual scale scores (except for vocabulary) than the ELBW infants despite correction for prematurity.	*PPVT-L *30 minute lang. sample taken with the examiner was analysed using the Systematic analysis of language transcripts programme (Miller & Chapman, 1985) MLU Sentence complexity,	*All measures were signif. lower for the ELBW infants except for MLU (both corrected & uncorrected) *1/3 of the variance in vocabulary scores was accounted for by IVH alone. *Only mother's ed was related to MLU accounting for 49% of the variance. *ELBW used less complex expressive lang.	*No signif. difference between the groups on demographic variables *All ELBW infants were approximately 3 mths older than the controls due to matching by CCA. *There were no signif. correlations b/w language measures & BW, gestation, or number of days on ventilation. *IVH was signif. correlated with lang. measures. *Correlations were marginally higher for chronological age than for corrected chronological age. *Mother's ed was signif. correlated with overall verbal intellectual ability	*Small sample size *No measures of parent/infant interaction- lang. sample taken with experimenter. *No indication of pragmatic skills of infant
Casiro et al (1991)	28 VLBW BW= 1174+264 GEST= 29+2 Incl: 9 SGA 8BPD 9 neuro abnorm. *No control group at 3 yrs	*28 at 1yr & 23 at 3 yrs	*Hollingshead scale used to assess SES *Hearing assessed by audiologist *Scores corrected for prematurity *Standard neurological assessment,	*Gesell Developmental Scales	*12 mths: 97+ 16 *3 yrs: 97+11	at 1 yr: *REEL *Reynell at 3 yrs: Preschool lang. scale (PLS) (lang. quotients calculated) *Lang. delay defined as REEL lang Q<85 Reynell score > 1 SD below mean	*At 12 mths Receptive REEL: 94 +26 Expressive REEL: 91 + 27 At 3 yrs: PLS-auditory 124 + 16 comprehension Q PLS-verbal ability 103 +21 Q	*Only 15% had lang. delay c.f. 39% at 12 mths of age; *Most signif. improvement evident in infants with early delays, however, the authors comment that they continue to lag behind those with normal lang. scores *Found no perinatal characteristics predictive of continuing lang delay	*No control group for 3 yrs assessments limits ability to interpret these results; *Small sample size *Use of corrected ages may have inflated results for preterm infants *No indication of the impact of environmental factors on outcomes

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Aram et al 1991	<p>•249 VLBW BW= 1177 +218 Gest= 29.7+ 2 363 Controls- normal weight/ full term (no bw or gest info)</p> <p>•24 VLBW identified with major neuro/ sensory abnorm.: 10 spastic diplegia 4 hemipleg. 5 spastic quad. 1 severe hearing loss 1 Tourettes syndrome</p>	<p>•LBW= 106+4.8 corrected Controls= 107+4.6</p>	<p>•Speech & language assessments conducted by speech pathologists- 5-6 hours of assessments</p> <p>•Hearing assessed</p> <p>•Social factors did not differ between VLBW and control</p>	<p>•Wechsler Intelligence Scale for children- Revised</p>	<p>•All IQ indices signif. lower for VLBW than control irrespective of whether or not 24 with major neuro abnorm included in VLBW group</p>	<p>•Language comprehension: PPVT-R Token IV and V</p> <p>•Language Production: Rapid Automized Naming task (total seconds) CELF-model sentences substest</p> <p>•Speech: PAT syllable rate</p>	<p>•On all measures except the PPVT-R & syllable repetition task, VLBW performed statistically poorer than controls</p> <p>•When major neuro abnorm excluded: mean performance for VLBW improved & variability decreased but differences remained significant</p> <p>•13.3% VLBW discrepancies of >2 SD & accompanied by PIQ of <85 of 6.9% of controls</p> <p>•14.5% VLBW specific language impairment cf 18.7% of controls</p>	<p>•8 yrs old children with BW <1500g had significantly poorer lang comprehension, production and speech abilities than heavier controls.</p> <p>•Social class did not account for the variance in scores as there were no significant differences between the groups on measures of SES.</p> <p>•VLBW were no more likely to present with negatively skewed speech & lang scores than controls</p> <p>•Lang deficits for VLBW accompanied low IQ, hearing impairment & neuro. deficits.</p>	<p>•Continued correction for prematurity may have led to an underestimation of the proportion of VLBW with speech & language impairment. This may reflect the higher proportion who had received S and L therapy- 27.5% of VLBW compared to 13.9% of controls</p> <p>•No attempt made to account for the potential effects of any intervention programmes on the performance of either group</p> <p>•124 families declined to participate as controls - there may have been an overrepresentation of families concerned about S and L in control group</p> <p>•No assessment of discourse or abstract language made</p>

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Karna 1991	*16/33 infants with low free T4 during the first 2 weeks 8 BW= 1028+12 8 BW= 1458+25 *All ventilated for > 5 days	*4-5yrs; mean 4.6 yrs	*Comparison of infants with low (less than 0.8ng/dl) and normal (0.8ng/dl or higher) free T4 during the first 2 weeks of life	*Stanford-Binet Intelligence Scale	*Mean 101+8.6(SD) in low free T4 group and 97.3+13.7 in normal T4 group *Scores for both groups within the normal range without significant difference between the two groups	*PPVT	*Scores not reported, but did report that scores were age appropriate for 11/16 infants. *5/16 with language difficulties included two with low free T4 and 3 with normal T4, indicating a general risk for preterm infants unrelated to thyroid status	*No signif. difference b/w groups in somatic growth, gross & fine motor dev. at 4.6 yrs *Normal free T4 were bigger at birth.	*No indication of the impact of environmental influences on outcomes *Small sample size *Lack of full term control *Lack of scores for comparison *Use of corrected age may have resulted in infants coming in normal range that aren't *Communication assessments limited to receptive lang.
Doyle et al 1991	*59 consecutive survivors <1000	*8 yrs corrected	*Comparison of outcome in relation to ventilation & oxygen therapy: *divided subjects into 4 groups according to days IPPV & duration of Oxygen	*WISCR	*Mean: Group 1=97+17(SD) Group 2=99.4+21.8(SD) Group 3=98.3+10.4(SD) Group 4=93.6+ 13.1(SD) *No<71 Group 1=1/11 Group 2=1/15 Group 3=0/14 Group 4=1/19	*Not reported	*Not reported	*5/59 (8%) had Cerebral palsy at 8 years *4/5 had moderate/ severe disabilities associated with CP, all from group 4 (lowest IPPV and Days O2 Thus found lower rates of poor growth & adverse neuro outcomes with longer durations of ventilation & O2 in newborn period	*Continued use of corrected ages at 8 years, may have inflated scores *Reliance on global measures, no measures of specific skill areas such as language. *No full term control group *No indication of influence of environmental factors on outcomes

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McCormick et al 1992	<ul style="list-style-type: none"> 4 groups: 1. 247 <1000gms 2. 364 >1001<1500 gms 3. 724. >15001<2500gms 4. 533 >2500gms Subjects selected from 2 previously studied multi site cohorts. Heavier weight children from a stratified random sample of births 	*8-10yrs	<ul style="list-style-type: none"> Multi centre study; combination or telephone interview and home/clinic visits. Studied presence or absence of 17 specific conditions, limitations to ADL due to health, mental health and for a subset, IQ scores 	*WISC-R, mean of 100, SD of 15	<ul style="list-style-type: none"> Mean IQ: Group 1: 87.9+18.2(SD) Group 2: 96.5+17.5(SD) Group 3: 96.3 +16.8(SD) Group 4: 103.1 +15.6(SD) % with IQ scores: <70 Group 1: 13.3 Group 2: 5.0 Group 3: 4.6 Group 4: 0 70-84: Group 1: 28.7 Group 2: 19.4 Group 3: 16.6 Group 4: 13.4 Total <85 Group 1: 42 Group 2: 24.4 Group 3: 21.2 Group 4: 13.4 	*Not reported	*Not reported	<ul style="list-style-type: none"> LBW at increased risk for behaviour problems & more likely to have problems in more than one area Substantial differences in IQ (15 to 47 points) were noted for children with BW >1000 b/w those with the least & those with the most highly ed. mothers. More advanced maternal ed. eliminated the difference in IQ by BW for all but the smallest infants 	<ul style="list-style-type: none"> No indication of neonatal complication of 4 groups Potential effect of disproportionate loss of lower SES biases study group toward greater health & higher function, comparability with smaller studies does reinforce confidence LBW not same age as heavier BW, LBW were older, thus the results for the LBW group may have been inflated. Lack of communication assessments High reliance on maternal report
Scottish low birth weight study group, 1992	<ul style="list-style-type: none"> 611/636 <1750 means not provided No full term control group 	*4.5 yrs	<ul style="list-style-type: none"> Assessed to determine the prevalence of cognitive, language, & behavioural problems Divided into 3 groups on the basis of birth weight: <1000; 1000-1499; 1500-1749 	*British ability scale	<ul style="list-style-type: none"> Mean IQ= 92.4 +14.7 5% had IQ <70 & 3% could not be tested due to physical disability. No signif difference b/w weight groups 	<ul style="list-style-type: none"> Renfrew action picture test Bus story of continuous speech. 	<ul style="list-style-type: none"> Actual scores not reported Articulation deficit was identified in 20 % of the children (no articulation measure reported) 	<ul style="list-style-type: none"> Language development was signif. related to birth, gestational age and social class for comprehension, less so for expressive language. 	<ul style="list-style-type: none"> Use of corrected age may have distorted correlations. Actual scores for language measures not reported limiting interpretation of results Lack of control group No articulation measure reported

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Koons et al 1993	<ul style="list-style-type: none"> •127 Preterm infants •60 h AOP BW = 1469+533 GEST= 31+3 •47 asymptomatic BW= 1586+581g GEST= 31+3wk •Matched for gestational age and degree of neonatal illness •No full term controls 	•12-24 mths	<ul style="list-style-type: none"> •Multidisciplinary follow-up programme Psychological, neurological & speech & hearing examinations. •Assessments were blind 	•Bayley Scales of Infant Development corrected for prematurity	<ul style="list-style-type: none"> •No significant difference in cognitive outcome of two groups •50/60 infants with AOP had an MDI>85 Mean=112.18 •39/47 controls had MDI>85 Mean=112+113 17% of study group and 17% of control group had MDI <85 •36% of the study group and 22% of the control group had a PDI<85 	<ul style="list-style-type: none"> •No information provided on what language assessments were performed. •Language delays defined as performance <2 mths below expected norms corrected for prematurity 	<ul style="list-style-type: none"> •Reported that 12/60 (20%) of the study group and 11/47(23%) of the control group had speech/language impairment 	<ul style="list-style-type: none"> •Higher percentage of motor delays were experienced in both groups, but more evident in study group •Incidence of Cerebral Palsy was 8% in both groups 	<ul style="list-style-type: none"> •No full term control group for comparison •No indication of SES or maternal education •Use of corrected scores may have inflated results •Lack of long term follow-up limits generalisation of results •No indication of the influence of environmental factors on outcomes.

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Weissglas-Kuperus et al, 1993	<ul style="list-style-type: none"> •79 high risk, VLBW infants BW= 1136+21.3(SD) GEST= 30.4 +2.3(SD) •No control group 	•3.6 yrs corrected	<ul style="list-style-type: none"> •Neonatal cerebral ultrasound & neurological score were indicators of biological risk •HOME scale used as measure of social risk 	<ul style="list-style-type: none"> •Bayley Scales of Infant Development at 1 & 2 yrs •Kaufmann Assessment Battery for children at 3.6 yrs 	<ul style="list-style-type: none"> •12 mth: mean MDI=96+19(SD) range=57-137 •24 mths; mean MDI=86+26(SD) range=52-141 •3.6 yrs: mean Intelligence score =87+13(SD) range=55-113 mean Achievement score =86+14(SD) range =55-115 	•Not reported	•Not reported	<ul style="list-style-type: none"> ■No signif. correlation b/w biological (neonatal ultrasound & neuro score) & social factors (socio-demographic risk score & home environment) ■Signif. correlation b/w biological factors & cognitive dev. at all ages ■At age 3.6, signif. correlation b/w biological factors & intelligence score but not with achievement. ■Social factors signif. correlated with cognitive skills from 2 yrs ■Mental dev. at 12 mths correlated with biological but not social factors ■Achievement at 3.6 yrs correlated with social factors not biological factors ■Neonatal cerebral ultrasound & socio-demographic risk together were best producers of MDI at 2 yrs & intelligence at 3.6 ■At 1 yr no signif. difference in MDI of children in high, intermediate & low levels of stimulation ■At 2 yrs, MDI for children in intermediate or low groups was signif. lower than for the highly stimulating group. ■From 2 yrs best predictor of cognitive development were neuro & HOME scores 	<ul style="list-style-type: none"> •No full term control group •No communication assessments •Use of corrected ages may have inflated results for VLBW infants

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Bowen et al 1993	<ul style="list-style-type: none"> *52 ELBW infants BW =858+99 Gest=27.5+2.2(SD) *No full term control 	*3yrs corrected age	<ul style="list-style-type: none"> *Data collected on perinatal & neonatal characteristics; *all assessed for evidence of IVH 	<ul style="list-style-type: none"> *Griffiths Mental Development Scales administered to all with normal vision. (n=50) *Reynell-Zinkin Developmental scales administered to visually handicapped infants (n=2) 	<ul style="list-style-type: none"> *35(67%) of infants had no neuro-sensory impairment & GQ>85. *Practical reasoning quotient was signif. higher than the mean GQ suggesting that this is an area of relative strength. *The mean for eye -hand coordination was signif. lower than the mean GQ. 	*No specific test	<ul style="list-style-type: none"> *Reported that the mean hearing & speech quotient was signif. higher than the mean GQ; suggesting that this was an area of relative strength. 	<ul style="list-style-type: none"> * Overall, 17 (33%) had some degree of neurodev. impairment: *6 (12%) - severe; *11 (21%) - mild to moderate *All with severe impairment had been in O₂ for >28 days & had some degree of ROP. *No child with severe impairment was SGA * Authors compared results to sample of normal children in Great Britain. Found that the mean hearing & speech quotient was not substantially different to that of the British children who have shown improvement in lang. skills since the test was standardised. This may have lead to inflated HS Quotients (Hanson and Aldridge Smith 1987 	<ul style="list-style-type: none"> *Use of corrected ages for calculation of DQ may have inflated scores *Lack of control group for comparison limits generalisability-reliance on the speech & language scale of the Griffiths as a measure of speech & language function is questioned as it tends to over estimate ability.
Byrne et al, 1993.	<ul style="list-style-type: none"> *71 LBW *Excluded: signif. global delay based on Bayley MDI; sensory impairment *No full term control 	<ul style="list-style-type: none"> *12 mths (n=36) *24 mths (n=35) 	<ul style="list-style-type: none"> *Assessed at corrected age *No subjects had received speech pathology intervention. *Different subjects assessed at 12 & 24 mths of age 	*Bayley Scales of infant development	<ul style="list-style-type: none"> *12 mths: MDI: 105.36+15.8 PDI: 94.8 +20.9 *24 mths: MDI: 104.3+15.9 PDI: 93.8 +16.6 *Note: infants with delay on MDI excluded from study 	<ul style="list-style-type: none"> *SICD-R delayed if >1.5 SD below test mean *ELM *Mean length of response (MLR) 	<ul style="list-style-type: none"> *Actual scores not presented *At 12 mths: 3/36 had expressive delay none had receptive delay *At 24 mths: 10/35 had expressive delay 2/35 had receptive delay Only 61% of infants at 24 mths had > 50 utterances; only 32% of the sample had a MLR within the normal range. 	<ul style="list-style-type: none"> *The authors comment that the fact that almost one third of the 24 mths olds are exhibiting delayed expressive language skills is clinically disconcerting, particularly as all of children are without serious sensory impairment or mental handicap. *The difference in rates at 12 mths and 24 mths of delayed lang, may reflect sensitivity of the assessment tools at various ages. 	<ul style="list-style-type: none"> *Lack of full term control *Length of follow-up. *No indication of the influence of environmental influences on outcomes *Actual scores not reported limiting interpretation & comparison with other studies.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Kirby et al 1993	<ul style="list-style-type: none"> *985/ 4551 LBW BW< 2500 Gest<37 weeks *Excluded maternal drug/ alcohol abuse, poor English skills; >60 days hospital; after 40wks corrected gest. age; severe sensory/ neuro. abnorm; multiple chromosomal syndromes *1/3 randomly assigned to intervention - Not discussed in this paper *No full term control group 	*3 years corrected	<ul style="list-style-type: none"> *Multi site (8) collaborative prospective intervention programme: *Risk factors studied: 1. Established risk (chromosomal, structural abnormalities) 2. Biological 3 environmental 	Stanford-Binet Intelligence Test	*No scores given	*No specific measures	*No scores given	<ul style="list-style-type: none"> *148(26.3%) had poor 36 mth developmental outcomes: Stanford-Binet IQ<70; used hearing aides, severe eye condition; abnormal neuro; Cerebral Palsy, severe chromosomal abnormality. *Biologic risk factors had low sensitivity but higher than for established risk factors . *Few individual risk factors were associated with poor dev. outcome. Characteristics with PPV greater than 30% were highly specific but involved few cases. *Excluded infants with no major neuro, which would have increased number with problems, *Core group of biological factors were consistently associated with poor outcome:birth asphyxia IVH and hypoglycemia 	<ul style="list-style-type: none"> *Only those outcomes that clearly qualify children for special services included, no indication of lesser impairments such as speech and language deficits; *No full term control group *Scores for cognitive assessment not reported *No communication measures *Use of corrected ages may have inflated results for preterm group.

Study	Subjects	Age at follow-up	Methodology	Cognitive measures	Cognitive outcomes	Communication measures	Communication Outcome	Comments	Limitations
Khadilkar et al 1993	<p>*90/107 VLBW <1500 gms 15 dystonic</p> <p>*75 non-dystonic (as assessed at 4 months)</p>	*<9yrs	*Physical, neurological, neuro-sensory & psychometric testing	General cognitive Index (GCI) of the McCarthy Scales of children's abilities	<p>*Dystonic infants had signif. lower mean GCI than non-dystonic group ($p<.001$).</p> <p>Dystonic: Mean GCI=94.7 No <84=4</p> <p>Non-dystonic: Mean GCI=110.2 No <84=3</p>	*Not reported	<p>*Results of the Rutter questionnaire at 9 yrs indicated that 2 of dystonic group & 4 of non-dystonic group had a "speech problem"</p>	<p>*Results of the Rutter questionnaire at 9 yrs indicated that only 1 of the dystonic & 16 of the non-dystonic group were classified as "normal"; 4 of the dystonic & 16 of the non-dystonic were classified as having a "learning difficulty", however, all of the nondystonic group & 80% of the dystonic group were given a Kitchen disability grading of normal/mild.</p> <p>*Perhaps Rutter child behaviour questionnaire is picking up problems not identified with the limited testing performed earlier;</p>	<p>*It is interesting to note that the authors state that the mean CGI children whose parents responded to Rutter questionnaire was signif. higher than for children whose parents did not respond. Thus figures could be seen as a underestimation of problems being encountered at 9 yrs of age.</p>
Hack et al 1994	<p>*Regional cohort</p> <p>*68 <750 BW=670+66(SD) GEST=25.7+2(SD)</p> <p>*65 >750, <1499 BW=1174+215(SD) Gest=29.4+2(SD)</p> <p>*61 full term BW=3300+600</p>	*7 yrs		*Kaufmann Assessment Battery MCP	<p>*All scored on basis of postnatal age</p> <p>*<750g = 87+15</p> <p>*>750, <1499= 93+14</p> <p>*Full term= 100+13</p>	<p>*Clinical Evaluation of Language Fundamentals Revised:</p> <p>-Oral directions, Sentence structure, recalling sentences subtests;</p> <p>*Expressive Oneword Picture vocabulary test, pseudoword repetition test. Photoarticulation test</p>	<p>*Scores not reported</p> <p>*Reported that the infants <750gms had signif. poorer scores on all lang. measures than the full term group</p> <p>*Infants <750gms had signif. poorer scores than larger LBW group on lang. processing skills</p>	<p>*Academic achievement results indicate that VLBW children are at serious disadvantage in every skill required for adequate school performance</p> <p>*14(21%) had MPC <75 indicative of dev. disability & 45% required some special education in school</p> <p>*No difference b/w groups wrt Mo education, marital status or racial background, social disadvantage. Study suggests that major dev. outcomes more associated with neonatal complications than with social disadvantage.</p> <p>*major neurosensory impairment</p> <p><750g = 10 (15%) 750-1499= 5 (8%) Full term= 0</p>	<p>*Use of post natal age may have inflated the results of the preterm infants</p> <p>*Communication outcome scores not reported limiting interpretation of the results & comparison with other studies.</p>

APPENDIX C

THE LIVERPOOL HEALTH SERVICE

THE EARLY IDENTIFICATION AND TREATMENT OF COMMUNICATION DISORDERS IN INFANCY

Explanation of Information and Consent forms.

1. There are five different Information Sheets, one for each of the experimental groups.

Form 1 - Group 1 ("at risk" control group, assessed at 4, 8 and 12 months)

Form 2 - Group 2 (Normal Control Group, ie. infants with uneventful perinatal histories to be assessed only, at 4, 8 and 12 months).

Form 3 - Group 3 ("at risk" intervention group, attend intervention programme and are assessed at 4, 8 and 12 months)

Form 4 - Group 4 ("At risk" assessment control group, assessed only at 12 months)

Form 5 - Group 5 (Normal assessment control group, infants with uneventful perinatal histories assessed only at 12 months)

2. There are 3 different consent forms. They are as follows:

Form 6 Groups 1 and 2

Form 7 Group 3

Form 8 Groups 4 and 5

Where the parent does not speak English, an interpreter was used to translate the material contained in the appropriate information sheet and consent form.

THE LIVERPOOL HEALTH SERVICE

PATIENT INFORMATION

INFANT COMMUNICATION STUDY

MAIN INVESTIGATOR: Teresa Anderson, Chief Speech Pathologist

A research project is being conducted by the Liverpool Health Service, a Unit of the South Western Sydney Area Health Service, and the Linguistics Department of Macquarie University.

The study is interested in the examining the communication development of infants who have needed care in the Special Care nursery. We would like to invite you to participate in the study.

The main aims of the study are:

1. To increasing our understanding of communication development in the first twelve months
2. To assess the usefulness of the Developmental clinic in identifying infants with communication problems

WHY ME?

As with all infants who come through the Special Care Nursery, your infant has been given an appointment for the Developmental Clinic. The Clinic is run by the Director of Paediatrics and the Chief Speech Pathologist in conjunction with other members of the Paediatric team (including a Physiotherapist, Occupational Therapist, Dietitian and other Paediatricians). At this clinic a general assessment of your infant's development is made by the Speech Pathologist, in addition to specific assessment of your infant's communication development. The assessments are made at 4, 8 and 12 months. If any problems are identified, referral is made to the appropriate health professional in consultation with your paediatrician or local doctor. We need your feed back on how useful you found the Clinic.

IF I SAY 'YES' WHAT WILL HAPPEN?

With your agreement, the assessments that your infant has in the Developmental clinic will be videotaped. These tapes will be used to provide us with detailed information of your infant's communication development and other related skills.

You will also be asked to complete an evaluation questionnaire at the end of your infant's 12 month assessment.

The results of your infant's assessment will be used with that of other infants to enable us to better understand the communication development of infants who have required care in the Special Care Nursery.

IF I SAY 'NO' WHAT WILL HAPPEN?

There is no problem if you say no, that is your right. Your infant will receive the best care we can give regardless of whether you participate in the study or not. If you decide to participate you are free to change your mind and withdraw at any time. If you do withdraw for participation there will be no affect on your future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

WHAT ABOUT MY PRIVACY?

Anonymity: Your infant's name and address will be known to the researchers but this information will be kept separate from your research forms. Your infant's assessment will be given numbers and all the data will be put together for group analysis. The videotape will be labelled only with your infant's research number.

Confidentiality: It will not be possible to identify any individual in the written reports of the research project. Only the researchers and the assistant will see your infant's assessment.

ARE THERE ANY RISKS FOR ME?

No, there are no risks of any sort to participants in the project.

WHAT DO I GET OUT OF IT?

1. You will receive a copy of the videotape of your infant's assessments at 4, 8, and 12 months to keep.
2. You will also be making a valuable contribution to our understanding of how communication develops in the first 12 months and eventually to improved methods of intervention with infants who have communication impairments.

HOW CAN I GET MORE INFORMATION?

Teresa Anderson, the main researcher would be happy to answer any of your questions. You can contact her on **828 4703** or after your Developmental clinic sessions. She is happy to talk to you at any time during the project.

WHAT NOW?

After you have finished reading this Patient Information Sheet and the consent form, tell Teresa Anderson, whether you want to participate or not and if you want more information.

THANK YOU

THE LIVERPOOL HEALTH SERVICE

PATIENT INFORMATION

INFANT COMMUNICATION STUDY

MAIN INVESTIGATOR: Teresa Anderson, Chief Speech Pathologist

A research project is being conducted by the Liverpool Health Service, a Unit of the South Western Sydney Area Health Service, and the Linguistics Department of Macquarie University.

The study is interested in examining infant communication development. By having a better understanding of the origins of communication, we should be able to more effectively provide services to those infants who have communication impairments. We would like to invite you to participate in the study.

The main aims of the study are:

1. To increase our understanding of the communication skills of 12 month old infants who required care in the Special Care Nursery.
2. To develop methods of identifying infants who are "at risk" of developing communication impairments

WHY ME?

Your baby was born at the Liverpool Hospital and required care in the Special Care Nursery.

IF I SAY 'YES' WHAT WILL HAPPEN?

With your agreement, your infant's communication and related skills will be assessed at 4, 8, and 12 months of age. With your permission, these assessments will be videotaped to provide us with detailed information of your infant's development.

You will also be asked to complete an evaluation questionnaire at the end of your infant's 12 month assessment.

The results of your infant's assessment will be used with that of other infants to enable us to better understand the communication skills of 12 month old infants.

IF I SAY 'NO' WHAT WILL HAPPEN?

There is no problem if you say no, that is your right. Your infant will receive the best care we can give regardless of whether you participate in the study or not. If you decide to participate you are free to change your mind and withdraw at any time. If you do withdraw your participation there will be no affect on your future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

WHAT ABOUT MY PRIVACY?**Anonymity:**

Your infant's name and address will be known to the researchers but this information will be kept separate from your research forms. Your infant's assessment will be given numbers and all the data will be put together for group analysis. The videotape will be labelled only with your infant's research number.

Confidentiality:

It will not be possible to identify any individual in the written reports of the research project. Only the researchers and the assistant will see your infant's assessment.

ARE THERE ANY RISKS FOR ME?

No, there are no risks of any sort to participants in the project.

WHAT DO I GET OUT OF IT?

1. You will receive a copy of the videotape of your infant's assessment at 4, 8, and 12 months to keep.
2. You will be given information on your infants communication development. If a problem is identified you will be referred to the appropriate health professional.
3. You will also be making a valuable contribution to our understanding of how communication develops in the first 12 months and eventually to improved methods of intervention with infants who have communication impairments.

HOW CAN I GET MORE INFORMATION?

Teresa Anderson, the main researcher would be happy to answer any of your questions. You can contact her on **8284703** or after your assessment. She is happy to talk to you at any time during the project.

WHAT NOW?

After you have finished reading this Patient Information Sheet and the consent form, tell Teresa Anderson whether you want to participate or not and if you want more information.

THANK YOU

THE LIVERPOOL HEALTH SERVICE

PATIENT INFORMATION

INFANT COMMUNICATION STUDY **EARLY INTERVENTION PROGRAMME**

MAIN INVESTIGATOR: Teresa Anderson, Chief Speech Pathologist

A research project is being conducted by the Liverpool Health Service, a Unit of the South Western Sydney Area Health Service, and the Linguistics Department of Macquarie University.

The study is interested in the examining the effectiveness of the "Learning to Communicate" programme which was specifically designed for infants who have needed care in the Special Care nursery. We would like to invite you to participate in the study.

The aims of the programme:

1. To provide parents with information on the normal development of Communication and related skills
2. To provide parents with information of things that they can do to encourage their baby's development
3. To provide parents with information on the types of toys and play materials that are appropriate at each stage of development.
4. To give parents the opportunity to practice and discuss these things.

As you are aware the "**Learning to Communicate**" programme runs once per month for 12 months, beginning when your baby is one month old and ceasing when your baby is 12 months old. Each session lasts for one and a half hours. Each session involves discussion of normal development, ways of stimulating development and appropriate play materials for each stage of development.

Each session includes observation of videos focusing on specific age groups. Parents are given handbooks which include the information covered in each session to take home and share with your family.

As with all infants who come through the Special Care Nursery, your infant has been given an appointment for the **Developmental Clinic**. At this clinic your infants development is assessed at 4, 8 and 12 months. If any problems are identified, referral is made to the appropriate health professional in consultation with your paediatrician or local doctor.

WHY ME?

You are currently participating the "Learning to Communicate" programme and we need your feedback on its usefulness.

IF I SAY 'YES' WHAT WILL HAPPEN?

With your agreement, the assessments that your infant has in the Developmental clinic will be videotaped. These tapes will be used for two purposes:

1. To assess your infants development
2. To provide you with a record of your infants development over the 12 month period.
3. You will be given a copy of the video to keep.
4. You will also be asked to complete an evaluation questionnaire at the end of each session.
5. The results of the evaluation and your infant's assessments will be used to assess the effectiveness of the programme.

IF I SAY 'NO' WHAT WILL HAPPEN?

There is no problem if you say no, that is your right. You will receive the best care we can give regardless of whether you participate in the study or not. If you decide to participate you are free to change your mind and withdraw at any time. If you do withdraw for participation there will be no affect on your future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

WHAT ABOUT MY PRIVACY?**Anonymity:**

Your name and address will be known to the researchers but this information will be kept separate from your research forms. You infants assessment will be given numbers and all the data will be put together for group analysis. The videotape will be labelled only with your research number.

Confidentiality:

It will not be possible to identify any individual in the written reports of the research project. Only the researchers and the assistant will see your infant's assessment.

ARE THERE ANY RISKS FOR ME?

No, there are no risks of any sort to participants in the project.

WHAT DO I GET OUT OF IT?

1. You will receive a copy of the videotape of your infants assessments at 4,8, and 12 months to keep.
2. You will also be making a valuable contribution to the development of services for other infants and eventually improved methods of intervention.

HOW CAN I GET MORE INFORMATION?

Teresa Anderson, the main researcher and Wendy Young, who runs the "Learning to Communicate" Programme, would be happy to answer any of your questions. You can contact us on 828 4703 or after any of your group sessions. We are happy to talk to you at any time during the project.

WHAT NOW?

After you have finished reading this Patient Information Sheet and the consent form, tell Wendy Young or Teresa Anderson whether you want to participate or not and if you want more information.

THANK YOU

THE LIVERPOOL HEALTH SERVICE

PATIENT INFORMATION

INFANT COMMUNICATION STUDY

MAIN INVESTIGATOR: Teresa Anderson, Chief Speech Pathologist

A research project is being conducted by the Liverpool Health Service, a Unit of the South Western Sydney Area Health Service, and the Linguistics Department of Macquarie University.

The study is interested in examining infant communication development. By having a better understanding of the origins of communication, we should be able to more effectively provide services to those infants who have communication impairments. We would like to invite you to participate in the study.

The main aims of the study are:

1. To increase our understanding of the communication skills of 12 month old infants who required care in the Special Care Nursery.
2. To develop methods of identifying infants who are "at risk" of developing communication impairments

WHY ME?

Your baby was born at the Liverpool Hospital and required care in the Special Care Nursery.

IF I SAY 'YES' WHAT WILL HAPPEN?

With your agreement, your infant's communication and related skills will be assessed at 12 months of age. With your permission, this assessment will be videotaped to provide us with detailed information of your infant's communication skills.

You will also be asked to complete an evaluation questionnaire at the end of your infant's 12 month assessment.

The results of your infant's assessment will be used with that of other infants to enable us to better understand the communication skills of 12 month old infants.

IF I SAY 'NO' WHAT WILL HAPPEN?

There is no problem if you say no, that is your right. Your infant will receive the best care we can give regardless of whether you participate in the study or not. If you decide to participate you are free to change your mind and withdraw at any time. If you do withdraw your participation there will be no affect on your future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

WHAT ABOUT MY PRIVACY?**Anonymity:**

Your infant's name and address will be known to the researchers but this information will be kept separate from your research forms. Your infant's assessment will be given numbers and all the data will be put together for group analysis. The videotape will be labeled only with your infant's research number.

Confidentiality:

It will not be possible to identify any individual in the written reports of the research project. Only the researchers and the assistant will see your infant's assessment.

ARE THERE ANY RISKS FOR ME?

No, there are no risks of any sort to participants in the project.

WHAT DO I GET OUT OF IT?

1. You will receive a copy of the videotape of your infant's assessment at 12 months to keep.
2. You will be given information on your infants communication development. If a problem is identified you will be referred to the appropriate health professional.
3. You will also be making a valuable contribution to our understanding of how communication develops in the first 12 months and eventually to improved methods of intervention with infants who have communication impairments.

HOW CAN I GET MORE INFORMATION?

Teresa Anderson, the main researcher would be happy to answer any of your questions. You can contact her on 8284777 or after your assessment. She is happy to talk to you at any time during the project.

WHAT NOW?

After you have finished reading this Patient Information Sheet and the consent form, tell Teresa Anderson whether you want to participate or not and if you want more information.

THANK YOU

THE LIVERPOOL HEALTH SERVICE

PATIENT INFORMATION

INFANT COMMUNICATION STUDY

MAIN INVESTIGATOR: Teresa Anderson, Chief Speech Pathologist

A research project is being conducted by the Liverpool Health Service, a Unit of the South Western Sydney Area Health Service, and the Linguistics Department of Macquarie University.

The study is interested in examining infant communication development. By having a better understanding of the origins of communication, we should be able to more effectively provide services to those infants who have communication impairments. We would like to invite you to participate in the study.

The main aims of the study are:

1. To increase our understanding of the communication skills of 12 months old infants
2. To develop methods of identifying infants who are "at risk" of developing communication impairments

WHY ME?

Your baby was born at the Liverpool Hospital and had no problems associated with his birth.

IF I SAY 'YES' WHAT WILL HAPPEN?

With your agreement, your infant's communication and related skills will be assessed at 12 months of age. With your permission, this assessment will be videotaped to provide us with detailed information of your infant's communication skills.

You will also be asked to complete an evaluation questionnaire at the end of your infant's 12 month assessment.

The results of your infant's assessment will be used with that of other infants to enable us to better understand the communication skills of 12 month old infants.

IF I SAY 'NO' WHAT WILL HAPPEN?

There is no problem if you say no, that is your right. Your infant will receive the best care we can give regardless of whether you participate in the study or not. If you decide to participate you are free to change your mind and withdraw at any time. If you do withdraw for participation there will be no affect on your future treatment or your relationship with any person or service in the South Western Sydney Area Health Service.

WHAT ABOUT MY PRIVACY?

Anonymity: Your infant's name and address will be known to the researchers but this information will be kept separate from your research forms. Your infant's assessment will be given numbers and all the data will be put together for group analysis. The videotape will be labelled only with your infant's research number.

Confidentiality: It will not be possible to identify any individual in the written reports of the research project. Only the researchers and the assistant will see your infant's assessment.

ARE THERE ANY RISKS FOR ME?

No, there are no risks of any sort to participants in the project.

WHAT DO I GET OUT OF IT?

1. You will receive a copy of the videotape of your infant's assessment at 12 months to keep.
2. You will also be making a valuable contribution to our understanding of how communication develops in the first 12 months and eventually to improved methods of intervention with infants who have communication impairments.

HOW CAN I GET MORE INFORMATION?

Teresa Anderson, the main researcher would be happy to answer any of your questions. You can contact her on **828 4703** or after your Developmental clinic sessions. She is happy to talk to you at any time during the project.

WHAT NOW?

After you have finished reading this Patient Information Sheet and the consent form, tell Teresa Anderson, whether you want to participate or not and if you want more information.

THANK YOU

THE LIVERPOOL HEALTH SERVICE

INFANT COMMUNICATION STUDY

CONSENT FORM

I, _____

of _____

consent to the participation of _____
in a research study to be undertaken by the Liverpool Health Service and Linguistics
Department of Macquarie University. I understand that the purpose of the research is to study
communication development in infancy.

I acknowledge that I am participating of my own free will.

My agreement is based on the understanding that:

1. _____'s involvement in the study entails:
 - a) that he/she will attend three sessions at 4, 8, 12 months; at which a general developmental assessment will be performed, in addition to specific assessment of his communication skills.
 - b) each session will take approximately 45 minutes and will be videotaped.
2. Any data including the videotapes will be coded and my infant's name and address kept separately.
3. If any problems are identified at the assessments, _____ will be referred to the appropriate Health Professional following discussion with his/her paediatrician.
4. I understand that the assessments are brief and non-invasive.
5. I understand that I will be provided with information on the out-comes of the assessments.
6. I understand that the videotapes are for analysis only and will not be shown publicly without my specific written consent.

I further acknowledge that:

1. My decision whether or not to participate will not affect my future relationship with any part of the South Western Sydney Area Health Service or any institution cooperating with this study. If I decide to participate, I am free to withdraw my consent and to discontinue my

participation at any time. Any such withdrawal will not affect my future treatment or my relationship with the South Western Sydney Area Health Service or any person treating me.

2. Any information I provide will not be made public in any form that could reveal my infants identity.

I have read the Patient Information Sheet and the Consent form and understand the purpose of the study and that there are no risks to my infant by participating.

PARENT

WITNESS

(print name)

(print name)

(signature)

(signature)

THE LIVERPOOL HEALTH SERVICE

INFANT COMMUNICATION STUDY

CONSENT FORM

I _____

of _____

consent to the participation of _____
in a research study to be undertaken by the Liverpool Health Service and Linguistics Department of Macquarie University. I understand that the purpose of the research is to study the communication development in infancy and the effectiveness of the "Learning to Communicate" programme.

I acknowledge that I am participating of my own free will.

My agreement is based on the understanding that:

1. I will attend the "Learning to communicate" programme, which involves twelve, monthly sessions, each lasting 1 1/2 hours.

2. _____'s involvement in the study entails:

a) that he/she will attend three sessions at 4, 8, 12 months, at which a general developmental assessment will be performed, in addition to specific assessment of his/her communication skills.

b) each session will take approximately 45 minutes and will be videotaped.

2. Any data including the videotapes will be coded and my infant's name and address kept separately.

3. If any problems are identified at the assessments, _____ will be referred to the appropriate Health Professional following discussion with his/her paediatrician.

4. I understand that the assessments are brief and non-invasive.

5. I understand that I will be provided with information on the out-comes of the assessments.

6. I understand that the videotapes are for analysis only and will not be shown publicly without my specific written consent.

I further acknowledge that:

1. My decision whether or not to participate will not affect my future relationship with any part of the South Western Sydney Area Health Service or any institution cooperating with this study. If I decide to participate, I am free to withdraw my consent and to discontinue my participation at any time. Any such withdrawal will not affect my future treatment or my relationship with the South Western Sydney Area Health Service or any person treating me.
2. Any information I provide will not be made public in any form that could reveal my infants identity.

I have read the Patient Information Sheet and the Consent form and understand the purpose of the study and that there are no risks to my infant by participating.

PARENT

WITNESS

(print name)

(print name)

(signature)

(signature)

THE LIVERPOOL HEALTH SERVICE

INFANT COMMUNICATION STUDY

CONSENT FORM

I, _____

of _____

consent to the participation of _____
in a research study to be undertaken by the Liverpool Health Service and Linguistics
Department of Macquarie University. I understand that the purpose of the research is to study
communication development in infancy.

I acknowledge that I am participating of my own free will.

My agreement is based on the understanding that:

1. _____'s involvement in the study entails:

a) that he/she will attend one session at 12 months; at which a general developmental
assessment will be performed, in addition to specific assessment of his/her communication
skills.

b) the session will take approximately 45 minutes and will be videotaped.

2. Any data including the videotapes will be coded and my infant's name and address kept
separately.

3. If any problems are identified at the assessments, _____ will be referred to
the appropriate Health Professional following discussion with his/her paediatrician.

4. I understand that the assessments are brief and non-invasive.

5. I understand that I will be provided with information on the out-comes of the assessments.

6. I understand that the videotapes are for analysis only and will not be shown publicly without
my specific written consent.

I further acknowledge that:

1. My decision whether or not to participate will not affect my future relationship with any part of the South Western Sydney Area Health Service or any institution cooperating with this study. If I decide to participate, I am free to withdraw my consent and to discontinue my participation at any time. Any such withdrawal will not affect my future treatment or my relationship with the South Western Sydney Area Health Service or any person treating me.
2. Any information I provide will not be made public in any form that could reveal my infants identity.

I have read the Patient Information Sheet and the Consent form and understand the purpose of the study and that there are no risks to my infant by participating.

PARENT

WITNESS

(print name)

(print name)

(signature)

(signature)

HOME INVENTORY: Score sheet**Subject No:**

I. Emotional and Verbal responsivity of mother		Yes	No	iv. Provision of appropriate play materials		Yes	No
1. Mother spontaneously vocalises to child at least 2x during visit				26. Child has some muscle activity toys or equipment			
2. Mother responds to child's vocalisations with a verbal response				27. child has push or pull toy			
3. Mother tells the child the name of some object during visit or says name of person or object in a "teaching style"				28. child has stroller or walker, kiddie car, scooter or tricycle			
4. Mother's speech is distinct, clear and audible				29. Mother provides toys or interesting activities for child during interview			
5. Mother initiates verbal interchanges with observer...asks questions, spontaneous comments				30. Provides learning equipment appropriate to age-cuddly toy, role playing toy			
6. Mother expresses ideas freely and easily and uses statements of appropriate length for conversation				31. Provides learning equipment appropriate to age-mobile, table and chairs, high chair play pen			
7. Mother permits child occasionally to engage in messy play				32. Provides hand eye coordination toys items to go in and out of receptacle. fit together toys and beads			
8. Mother spontaneously praises child's qualities or behaviour twice during the visit				33. Provides hand eye coordination toys that permit combination.. stacking or nesting toys blocks or building blocks			
9. When speaking to the child the mother voice conveys positive feeling				34. Provides toys for literature or music			
10. Mother caresses or kisses child at least once during the visit				Total			
11. Mother show some positive emotional response to praise of child offered by the visitor				v. Maternal involvement with child			
Total				35. Mother tends to keep child within visual range and to look at him often			
ii. Avoidance of restriction and Punishment				36. Mother talks to child while doing her work			
12. Mother does not shout at child during visit				37. Mother consciously encourages developmental advance			
13. Mother doesn't express overt annoyance with or hostility toward child				38. Mother invests maturing toys with value via her attention			
14. Mother neither slaps or spansks child during the visit				39. Mother structures child's play periods			
15. Mother reports that no more than one instance of physical punishment occurred during the past week				40. Mother provides toys that challenge child to develop new skills			
16. Mother does not scold or derogate child during visit				Total			
17. Mother does not interfere with child's actions or restrict child's movements more than three times during visit				vi. Opportunities for variety in daily stimulation:			
18. At least ten books are visible and present				41. Father provides some caretaking every day			
19. Family has a pet				42. Mother reads stories at least three times weekly			
Total				43. Child eats at least one meal per day with mother and father			
iii. Organisation of Physical and Temporal environment:				44. Family visits or receives visits from relatives			
20. When mother is away care is provided by one of three regular substitutes				45. child has three or more books of his own			
21. Someone takes child into grocery store at least once per week				Total			
22. child gets out of the house at lest four times per week							
23. Child is taken regularly to doctor's office or clinic							
24. child has a special place in which to keep his toys or treasures							
25. child's play environment appears safe and free from hazards							
Total							

EARLY COMMUNICATION PROFILE

(Experimental version)

A tool for the assessment of early communicative and prelinguistic behaviours.

CLIENT DETAILS			
NAME:		DATE ASSESSED:	
M.R.N		DATE OF BIRTH:	
EXAMINER:		AGE AT ASSESSMENT	

SUMMARY TABLE:	
SCALE	HIGHEST BEHAVIOUR OBSERVED
1. Request for service	
2. Request for object	
3. Request for non-object service	
4. Informing/giving	
5. Rejecting	
6. Conversational skills	
7. Turn-taking skills	
8. Joint Attention skills	
9. Vocalisations	
10. Response to sound	
11. Response to verbal stimuli	
COMMENTS:	

This profile has been developed for the research study "The Early Identification and Treatment of Communication Disorders in Infancy" which is part of a Phd in Linguistics at Macquarie University. All rights are retained by the author, Teresa Anderson C/o The Linguistics Department, Macquarie University.

OVERALL COMMUNICATION LEVEL												
		Highest level achieved on each scale										
Level	Type of Behaviour	1	2	3	4	5	6	7	8	9	10	11
6	Evidence of alternative plans to achieve a goal (Intentional communication-: language)											
5	Evidence of alternative plans to achieve a goal (Intentional communication)											
4	Evidence of a co-ordinated plan to achieve a goal (Intentional communication)											
3	Evidence of a simple plan to achieve a goal (Intentional behaviours)											
2	Evidence of an awareness of a goal (Reactive behaviours)											
1	No awareness of a goal (Reflexive behaviours)											
COMMENTS:												

EARLY COMMUNICATION PROFILE											
6	15	14	14	14							
	14	13	13	13							
5	13	12	11	12							
	12	11	10	11							
	11	10	10	10							
	10			9							
4	9	9	8	8							
	8	8	7	7							
	7	7	6	6							
3	6	6	5	5							
	5	5	4	4							
	4	4	4	4							
2	3	3	3	3							
	2	2b	2	2b							
	2a	2a	2a	2a							
1	1	1	1	1							
Level Scale	1	2	3	4	5	6	7	8	9	10	11

Plot highest value achieved for each scale

1. DEVELOPMENT OF REQUEST FOR SERVICE: Stimulus: E produces an interesting spectral				
L E V E L	BEHAVIOUR	STIMULUS/ EVENT		
1	1. No response			
2	2. Attends only			
	3. Attends /changes movement/ no single act dominant			
3	4. Procedure			
	5. Reaches toward spectacle			
	6. Vocalises toward spectacle			
4	7. Procedure/alternates eye contact			
	8. Reaches toward spectacle/ alternates eye contact			
	9. Vocalises (NL)/ alternates eye contact			
5	10. Vocalises/reaches toward spectacle/alternates eye contact			
	11. Touches E/ reaches toward spectacle/alternates eye contact			
	12. Gives object to E/ alternates eye contact			
	13. Gives object to E/ alternates eye contact/vocalises (NL)			
6	14. Reaches toward spectacle/ alternates eye contact/ vocalises(L)			
	15. Gives object to E/ alternates eye contact/vocalises (L)			
	16. Other			
COMMENT:				

2. DEVELOPMENT OF REQUEST FOR AN OBJECT: Situation: toy out of reach/ E present				
L E V E L	BEHAVIOUR	STIMULUS/ EVENT		
1	1. No response			
2	2a. Attends to object only			
	2b. Attends to E only			
	3. Attends to object/ change in movement/no single act dominant			
3	4. Procedure/looks toward object			
	5. Reaches toward object			
	6. Vocalises toward object			
4	7. Procedure/alternates eye contact (E and object)			
	8. Reaches toward object/ alternates eye contact (E and object)			
	9. Vocalises (NL)/alternates eye contact (E and object)			
5	10. Vocalises(NL)/reaches toward object/alternates eye contact			
	11. Vocalises(NL)/points toward object/alternates eye contact			
	12. Touches E/ vocalises(NL)/points toward object/alternates eyecontact			
6	13. Reaches toward object/ alternates eye contact/ vocalises(L)			
	14. Points toward object/ alternates eye contact/vocalises (L)			
	15. Other			
COMMENT:				

3. DEVELOPMENT OF REQUEST FOR A NON-OBJECT SERVICE: Situation: motor-vocal game with E					
L E V E L	BEHAVIOUR	STIMULUS/ EVENT			
1	1. No response				
2	2. Attends only while game is in motion				
	3. Changes movement during pauses/ no single act dominant				
3	4. Procedure during pauses				
	5. Reaches toward E				
4	6. Procedure/ alternates eye contact (E and object)				
	7. Performs part of the game in the pauses				
	8. Performs part of the game/ alternates eye contact (E & object)				
5	9. Performs part of the game/ vocalises(NL)/ alternates eye contact (E and object)				
	10. Performs part of the game/ repeats performance when E fails to respond/ alternates eye contact				
	11. Performs part of the game/ repeats performance when E fails to respond/ vocalises(NL)/ alternates eye contact				
6	12. Initiates game/ repeats if E fails to respond				
	13. Initiates game/ repeats if E fails to respond/ alternates eye contact/ vocalises				
	14. Initiates game/ repeats if E fails to respond/ alternates eye contact/ vocalises				
	15. Other				
COMMENT:					

4. DEVELOPMENT OF INFORMING/ GIVING: Situation: play with a toy/ E present					
L E V E L	BEHAVIOUR	STIMULUS/ EVENT			
1	1. No response				
2	2a. Regards toys only				
	2b. Regards E only				
	3. Changes movement/ no single act dominant				
3	4. Manipulates object				
	5. Vocalises while manipulates object				
4	6. Alternates eye contact while manipulates object				
	7. Reaches toward E as manipulates object/ alternates eye contact				
	8. Vocalises(NL) while manipulates object/ alternates eye contact				
5	9. Holds object toward E/ no release/ alternates eye contact				
	10. Holds object toward E/ releases/ alternates eye contact				
	11. Holds object toward E/ no release/ alternates eye contact/ vocalises(NL)				
6	12. Holds object toward E/ releases/ alternates eye contact/ vocalises(NL)				
	13. Holds object toward E/ no release/ alternates eye contact/ vocalises(L)				
	14. Holds object toward E/ releases/ alternates eye contact/ vocalises (L)				
	15. Other				
COMMENT:					

5. DEVELOPMENT OF REJECTING:					
Stimulus: object/action given to child					
L E V E L	BEHAVIOUR	STIMULUS/ ACTION			
1	1. No response				
2	2. Attends briefly/ turns head away				
	3. Attends briefly/turns head away/ whinges				
3	4. Attends briefly/ turns head to side/ pulls hands back				
	5. Attends briefly/ turns head to side/ pulls hands back/ whinges				
4	6. Attends briefly/ turns head to side/ alternates eye contact				
	7. Attends briefly/shakes head/ pulls hands back/ alternates eye contact				
	8. Attends briefly/turns head to side/whinges (NL)/ alternates eye contact				
5	9. Attends briefly/ shakes head/ alternates eye contact/ vocalises (NL)				
6	10. Attends briefly/ shakes head/ alternates eye contact/ vocalises(L)				
	11. Other				
COMMENT:					

7. DEVELOPMENT OF TURN-TAKING:					
Stimulus: E vocalises/ performs an action with and without a toy/					
L E V E L	BEHAVIOUR	STIMULUS/ EVENT			
1	1. No response				
2	2. Attends briefly				
	3. Attends/ changes movement in pauses/ no single act dominant				
3	4. Procedure during pauses				
	5. Produces similar act during pauses				
4	6. Procedure during pauses/ alternates eye contact				
	7. Responds only with similar act during pauses/ alternates eye contact				
5	8. Responds with similar act in pauses/ alternates eye contact/ repeats if E fails to respond				
	9. Responds with similar act during pauses/ alternates eye contact/ repeats if E fails to respond/ vocalises (NL)				
	10. Initiates turns/ waits/ repeats with alternating eye contact if E fails to respond				
	11. Initiates turns/ waits/ repeats with alternating eye contact if E fails to respond/ vocalises (NL)				
6	12. Responds with similar act during pauses/ alternates eye contact/ repeats if E fails to respond/ vocalises (L)				
	13. Initiates turns/ waits/ repeats with alternating eye contact if E fails to respond/ vocalises (L)				
	14. Other				
COMMENT:					

8. DEVELOPMENT OF JOINT ATTENTION SKILLS:					
Situation: E places toy or book in front/to side of child					
L E V E L	BEHAVIOUR	STIMULUS			
1	1. No response/ no interest				
2	2. Brief regard only				
	3. Sustained regard				
3	4. Attends /changes movement/ no single act dominant				
	5. Looks where own hand is				
4	6. Looks to where E points				
	7. Looks to where E points/ alternates eye contact				
	8. Reaches toward or touches object/ alternates eye contact				
5	9. Looks to where E looks / alternates eye contact				
	10. Points/ alternates eye contact				
	11. Points/ vocalises (NL)/ alternates eye contact				
6	12. Points/ vocalises(L)/ alternates eye contact/				
	13. Looks where E looks/ alternates eye contact/ vocalises (L)				
	14. Other				
COMMENT:					

9. DESCRIPTION OF VOCALISATIONS:				
Transcribe infants vocalisations during the following situations				
L E V E L	VOCAL BEHAVIOUR	SITUATIONS		
		Play by self	Play with carer	Play with E
1	1. No vocalisations			
	2. Crying			
2	3. Small throaty sounds (not crying)			
	4. Single vowel like sound			
	5. Two different vowel like sounds			
3	6. Laugh/giggle			
	7. Series of same sound			
	8. Squeal			
	9. Four different sounds (separately)			
4	10. Series of different sounds			
	11. Babbles- consonant + vowel syllable (eg/ba/, /ka/, /da/)			
	12. Two syllable babble-same (eg /dada/)			
	13. Consonant plus vowel plus consonant (eg /dad/)			
	14. Two syllable babble -different (eg /maba/)			
5	15. Three syllable babble			
	16. Jargon, with inflection			
	17. Mumma or dadda specifically in response to mother or father			
6	18. Single words other than mumma and dadda			
	19. Two word combinations			
	20. Other			
COMMENT:				

10. RESPONSE TO SOUND:								
Stimulus: Stimulus sounds a,b,c are produced to either side of infant's head, just behind each ear, out of the visual field. Familiar and non-familiar voices/noises (d,e,f,g) are produced behind and to the side of the infant, out of the visual field (on either side).								
L E V E L	BEHAVIOUR	STIMULUS						
		a)Bell	b)Rattle	c)Music	Familiar		Non-familiar	
					d)Voice	e)Noise	f)Voice	g)Noise
1	1. No response							
2	2. Startle							
	3. Startles/stops movement							
3	4. Startle/stops movement/searches (eyes only)							
	5. Stops movement/searches (turns head)							
	6. Searches directly							
4	7. Stops movement/searches directly/localises							
	8. Searches directly/localises							
5	9. Turns directly to sound							
	10. Turns directly to sound/ reaches							
	11. Turns directly to sound/ reaches/ vocalises (NL)							
6	12. Turns directly to sound/reaches/ vocalises (L)							
COMMENT:								

11. RESPONSE TO VERBAL STIMULI:										
Stimulus: E sits across table from infant with ball, cup/bottle and car on the table in front of infant.										
Infant seated on mum/dad's lap.										
L E V E L	BEHAVIOUR	STIMULUS								
		Name	Mummy/ daddy	Give ball	No	Juice/ milk/ drink	Where Car	Where nose/ mouth	Clap hands	Wave bye bye
1	1. No response									
2	2. Change of movement									
	3. Startles/ stops movement									
3	4. Stops movement/ searches (eyes only)									
	5. Stops movement/ searches (turns head)									
	6. Stops movement/ searches, looks to speaker									
4	7. Looks to speaker/ eye contact/ searches									
	8. Looks to subject									
5	9. Follows instruction									
	10. Other									
COMMENT:										

APPENDIX D

APPENDIX D:
REGRESSION TABLES FOR EIGHT
MONTH OUTCOMES

COGNITIVE OUTCOMES:

Table D1: Linear Regression Analyses: Relationship between Initial status variables and Bayley MDI.

Bayley MDI				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	0.009 p=0.002
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	-1.283 p=0.050	N.S.	N.S.	-0.701 p=0.024
8. Mo Ed	N.S.	3.832 p=0.017	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.785	0.668	0.642	0.518

Table D2: Linear Regression Analyses: Relationship between Initial status variables and Causality Scale of Uzgiris and Hunt Scales.

Causality				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.646 p=0.012	N.S.
3. Apgar 1 min	N.S.	N.S.	-0.847 p=0.009	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	-0.277 p=0.006	N.S.
8. Mo Education	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.436	0.350	0.814	0.070

Table D3: Linear Regression Analyses: Relationship between Initial status variables and Objects in Space Scale of Uzgiris and Hunt scales.

Objects in space				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.617 p=0.001	0.329 p=0.029
3. Apgar 1 min	N.S.	N.S.	-0.599 p=0.036	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.579	0.528	0.696	0.210

Table D4: Linear Regression Analyses: Relationship between Initial status variables and Object Permanence scale of Uzgiris and Hunt scales.

Object Permanence				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	2.544 p=0.025	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Education	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.667	0.449	0.768	0.350

Table D5: Linear Regression Analyses: Relationship between Initial status variables and Means ends Scale of Uzgiris and Hunt scales.

Means ends				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	-0.001 p=0.002	N.S.	N.S.	N.S.
2. Gestation	0.140 p=0.038	N.S.	N.S.	N.S.
3. Apgar 1 min	0.370 p=0.001	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	1.890 p=0.001	N.S.	N.S.	N.S.
6. NESB	N.S.	-3.434 p=0.035	2.923 p=0.042	N.S.
7. Mo age	N.S.	N.S.	N.S.	-0.127 p=0.021
8. Mo education	-0.147 p<0.001			N.S.
8. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.959	0.590	0.642	0.356

Table D6: Linear Regression Analyses: Relationship between Initial status variables and Vocal Imitation Scale of Uzgiris and Hunt scales.

Vocal imitation				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	-3.85 p=0.004	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.320	0.314	0.619	0.250

Table D7: Linear Regression Analyses: Relationship between Initial status variables and Gestural Imitation Scale of Uzgiris and Hunt scales.

Gestural imitation				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	-0.001 p=0.003	N.S.	N.S.	N.S.
2. Gestation	0.295 p<0.001	N.S.	N.S.	N.S.
3. Apgar 1 min	0.258 p<0.001	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	0.738 p=0.006	N.S.	N.S.	N.S.
6. NESB	0.759 p=0.002	N.S.	N.S.	N.S.
7. Mo age	-0.149 p<0.001.	N.S.	N.S.	-0.069 p=0.044
8. Mo education	N.S.	N.S.	N.S.	N.S.
9. No siblings	0.438 p<0.001.	N.S.	N.S.	N.S.
Rsqr (7)	0.983	0.270	0.554	0.292

Table D8: Linear Regression Analyses: Relationship between Initial status variables and Schemes Scale of Uzgiris and Hunt scales.

Schemes				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	0.166 p=0.030	N.S.	0.300 p=0.010	0.196 p=0.004.
3. Apgar 1 min	N.S.	N.S.	-0.284 p=0.035	-0.195 p=0.022.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	-1.412 p=0.008	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	-0.199 p<0.001	N.S.	N.S.	-0.083 p=0.001
8. Mo education	N.S.	N.S.	N.S.	N.S.
9. No siblings	0.434 p=0.017	N.S.	N.S.	N.S.
Rsqr	0.950	0.510	0.856	0.641

COMMUNICATION OUTCOMES:

Table D9: Linear Regression Analyses: Relationship between Initial status variables and Request Service Scale.

Request Service				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.346 0.015	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	0.102 p=0.047	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.463	0.370	0.728	0.248

Regression Tables - Eight Month

Table D10: Linear Regression Analyses: Relationship between Initial status variables and Request Object Scale.

Request Object				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	0.188 p=0.008
9. No siblings	N.S.	0.496 p=0.046	N.S.	N.S.
Rsqr	0.295	0.528	0.546	0.336

Table D11: Linear Regression Analyses: Relationship between Initial status variables and Request Non-object Service Scale.

Request Non-object service				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	-0.527 p=0.02	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.735	0.639	0.614	0.297

Regression Tables - Eight Month

Table D12: Linear Regression Analyses: Relationship between Initial status variables and Informing Scale.

Informing				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	-0.428 p=0.012	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.863	0.440	0.591	0.396

Table D13: Linear Regression Analyses: Relationship between Initial status variables and Rejecting Scale.

Rejecting				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	9. No siblings	N.S.
3. Apgar 1 min	N.S.	N.S.	-0.309 p=0.018	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	-1.506 p=0.015	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	-0.761 p=0.021	N.S.
Rsqr	0.458	0.527	0.758	0.207

Regression Tables - Eight Month

Table D14: Linear Regression Analyses: Relationship between Initial status variables and Conversation Scale.

Conversation				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.281 p=0.018	N.S.
3. Apgar 1 min	N.S.	N.S.	-0.309 p=0.03	-0.164 p=0.053
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	-1.506 p=0.015	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	0.338 p=0.045	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.543	0.374	0.667	0.287

Table D15: Linear Regression Analyses: Relationship between Initial status variables and Turn-Taking Scale.

Turn-taking				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	0.001 p=0.028
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	0.29 p=0.047
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	-1.871 p=0.050	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	0.453 p=0.032	N.S.	N.S.	0.122 p=0.045.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.602	0.305	0.492	0.239

Table D16: Linear Regression Analyses: Relationship between Initial status variables and Joint Attention Scale.

Joint attention				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	0.159 p=0.025
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	0.321 p=0.022
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsqr	0.453	0.240	0.713	0.415

Table D17: Linear Regression Analyses: Relationship between Initial status variables and Vocalisations Scale.

Vocalisations				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	-3.433 p=0.046.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	0.712 p=0.036	N.S.	0.684 p=0.009
Rsqr	0.626	0.740	0.358	0.300

Table D18: Linear Regression Analyses: Relationship between Initial status variables and Response to Sound Scale.

Response to sound				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsq	0.583	0.425	0.420	0.197

Table D19: Linear Regression Analyses: Relationship between Initial status variables and Response to Verbal Stimuli Scale.

Response to verbal stimuli				
Coeff P value	Group 1	Group 2	Group 3	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	0.084 p=0.030	N.S.	N.S.	N.S.
4. Apgar 2 min	-0.154 p=0.016	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	0.105 p=0.027	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.
Rsq	0.996	0.584	0.709	0.268

REGRESSION TABLES FOR TWELVE MONTH OUTCOMES

COGNITIVE OUTCOMES:

Table D20: Linear Regression Analyses: Relationship between Initial status variables and Bayley MDI.

Bayley MDI						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	0.009 p=0.002
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	-06.961 p=0.05	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsq	0.42	0.38	0.45	0.58	0.19	0.21

Table D21: Linear Regression Analyses: Relationship between Initial status variables and Causality Scale of Uzgiris and Hunt Scales.

Causality						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	0.002 p=0.046	0.001 p=0.001
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsq	0.38	0.58	0.45	0.56	0.48	0.29

Table D22: Linear Regression Analyses: Relationship between Initial status variables and Objects in Space Scale of Uzgiris and Hunt scales.

Objects in space						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	0.005 p=0.016	0.002 p=0.031
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	-0.156 p=0.049.
8. Mo education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.54	0.44	0.46	0.66	0.67	0.21

Table D23: Linear Regression Analyses: Relationship between Initial status variables and Objects Permanence scale of Uzgiris and Hunt scales.

Objects Permanence						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	-0.002 p=0.05	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.37	0.55	0.48	0.68	0.4	0.13

Table D24: Linear Regression Analyses: Relationship between Initial status variables and Means ends Scale of Uzgiris and Hunt scales.

Means ends						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	0.001 p=0.033
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	-0.67 p=0.40
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.48	0.4	0.05		0.26	0.11

Table D25: Linear Regression Analyses: Relationship between Initial status variables and Vocal Imitation Scale of Uzgiris and Hunt scales.

Vocal imitation						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	0.513 0.018.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	-0.504 p=0.043	N.S.	N.S.	N.S.	N.S.
Rsqr	0.67	0.65	0.69	0.37	0.28	0.11

Table D26: Linear Regression Analyses: Relationship between Initial status variables and Gestural Imitation Scale of Uzgiris and Hunt scales.

Gestural imitation						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S
2. Gestation	N.S.	N.S.	0.391 p=0.047	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	-2.511 p=0.036.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.55	0.54	0.63	0.59	0.16	0.18

Table D27: Linear Regression Analyses: Relationship between Initial status variables and Schemes Scale of Uzgiris and Hunt scales.

Schemes						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo education	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.43	0.21	0.5	0.28	0.314	0.15

COMMUNICATION OUTCOMES:

Table D28: Linear Regression Analyses: Relationship between Initial status variables and Request Service Scale.

Request Service						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	0.001 p=0.006
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	-0.804 p=0.044	N.S.
4. Apgar 2 min	N.S.	-3.245 p=0.019	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	0.410 p=0.016	N.S.	N.S.	0.27 p=0.036	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.36	0.68	0.33	0.71	0.48	0.22

Table D10: Linear Regression Analyses: Relationship between Initial status variables and Request Object Scale.

Request Object						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	0.416 p=0.035	N.S.	0.001 p=0.018
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	0.795 p=0.020	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	-1.825 p=0.010	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	-0.204 p=0.026	0.19 p=0.020	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	-0.375 p=0.05	
Rsqr	0.27	0.36	0.19	0.71	0.67	0.18

Table D30: Linear Regression Analyses: Relationship between Initial status variables and Request Non-object Service Scale.

Request Non-object service						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	0.001 p=0.039
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	-0.886 p=0.034	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	-0.184 p=0.005	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.56	0.23	0.73	0.31	0.52	0.08

Table D31: Linear Regression Analyses: Relationship between Initial status variables and Informing Scale.

Informing						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	-0.567 p=0.038	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	-1.809 p=0.021	N.S.	0.597 p=0.040	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	-0.169 p=0.040	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.41	0.64	0.44	0.76	0.44	0.19

Table D32: Linear Regression Analyses: Relationship between Initial status variables and Rejecting Scale.

Rejecting						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.248 p=0.05	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	-1.433 p=0.019	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.42	0.2	0.65	0.76	0.28	0.12

Table D33: Linear Regression Analyses: Relationship between Initial status variables and Conversation Scale.

Conversation						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	0.210 p=0.026
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	0.063 p=0.024
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	-0.218 p=0.043
Rsqr	0.4	0.41	0.43	0.49	0.26	0.18

Regression Tables - Twelve Month

Table D34: Linear Regression Analyses: Relationship between Initial status variables and Turn-Taking Scale.

Turn-taking						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	0.242 0.043	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	0.068 p=0.035
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.3	0.52	0.59	0.43	0.41	0.2

Table D35: Linear Regression Analyses: Relationship between Initial status variables and Joint Attention Scale.

Joint attention						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	0.093 p=0.046
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	-0.449 p=0.013
Rsqr	0.41	0.41	0.47	0.48	0.35	0.12

Table D36: Linear Regression Analyses: Relationship between Initial status variables and Vocalisations Scale.

Vocalisations						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	N.S.	-3.25 p=0.045	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsqr	0.54	0.39	0.58	0.46	0.27	0.08

Table D37: Linear Regression Analyses: Relationship between Initial status variables and Response to Sound Scale.

Response to sound						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	3.196 p=0.026	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	1.713 p=0.003	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	-0.582 p=0.031	N.S.	N.S.
Rsqr	0.5	0.59	0.31	0.66	0.19	0.07

Table D38: Linear Regression Analyses: Relationship between Initial status variables and Response to Verbal Stimuli Scale.

Response to verbal stimuli						
Coeff P value	Group 1	Group 2	Group 3	Group 4	Group 5	Total
1. Birth weight	N.S.	N.S.	N.S.	N.S.	0.002 p=0.024	N.S.
2. Gestation	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
3. Apgar 1 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
4. Apgar 2 min	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
5. Resp Distress	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
6. NESB	N.S.	-1.136 p=0.048	N.S.	N.S.	N.S.	N.S.
7. Mo age	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
8. Mo Ed	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
9. No siblings	N.S.	N.S.	N.S.	N.S.	N.S.	N.S.
Rsq	0.13	0.06	0.43	0.61	0.44	0.16

APPENDIX E

Volume 2

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LEARNING TO COMMUNICATE

A Guide to infant communication

TEACHING MANUAL

THE PROGRAMME

INTRODUCTION:

The "Learning to Communicate" Programme was developed to help parents to understand how their baby learns to communicate and how they can encourage that development. It covers normal development from birth to twelve months and includes information on each aspect of development which has a significant impact on communication development. This programme is based on an Interactional model of communication, which is outlined in the following section (refer to background information).

The major aim of the programme is to improve the ability of parents to provide appropriate stimulation for their babies, which will facilitate their baby's communication development.

The objectives of the programme are to provide parents with:

- Information on the normal development of communication
- Information on ways that they can encourage their baby's development.
- Information on the types of toys and play materials that are appropriate at each stage of their baby's development.
- The opportunity to practice and discuss the above.

The programme aims to teach parents how to communicate more effectively with their infants and to stimulate their infant's communication development through natural daily activities. As intervention will be occurring within the child's environment, it is hoped that the impact of intervention will be much greater than with individual therapy.

STRUCTURE OF THE PROGRAMME:

"Learning to Communicate" has been developed as a small group education programme to encourage participation, enable the use of practical case studies and group problem solving. The programme consists of twelve, monthly, parent training group sessions, beginning when

the baby is one month and ceasing when the baby is twelve months. It is divided into 6 parts according to age groups. Each part focuses on two months of development.

Session One	PART 1:	Introduction. Development from Birth to two months
Sessions Two and Three	PART 2:	Development from two to four months.
Sessions Four and Five	PART 3:	Development from four to six months.
Sessions Six and Seven	PART 4:	Development from six to eight months.
Sessions Eight and Nine	PART 5:	Development from eight to ten months.
Sessions Ten and Eleven	PART 6:	Development from ten to twelve months.
Session Twelve	CONCLUSION	

Each part has three sections:

Development - See what I can do!

Mum and Dad help baby to learn.

Things that make learning fun.

It is essential that the programme is carried out according to the guidelines provided. Teaching guides, parent handbooks, video- tapes and overheads are provided for each session.

GROUP COMPOSITION AND ORGANISATION OF SESSIONS:

There should be four to eight parents in each group, preferably six. Both parents should be encouraged to attend each session. Parents should also be requested to bring their babies to each session.

Each session is not to be organised as a formal lecture. To increase parental involvement it is important for the sessions to be as informal as possible, while still providing parents with appropriate information. Participants should sit in a semi-circle with the Programme leader amongst them. Parents should be encouraged to participate in changing and writing on overheads, starting the video etc. and should be actively encouraged to express their ideas and feelings throughout the sessions.

The sessions should be held in an appropriately set up group room with a pleasant atmosphere. Morning or afternoon tea should be provided to foster a relaxed ambience.

FORMAT OF SESSIONS:

The content of each session is clearly outlined in the Teaching notes, Teaching points and Overheads provided. During the sessions parents will be given information about the development of prelinguistic skills (such as turn-taking, joint attention, eye contact and early communicative functions such as requesting, informing and rejecting) and on cognitive skills (such as imitation, object permanence, problem solving, cause-effect relationships and play); how they develop and why they are important to later communication development.

Parents will be shown how to stimulate and facilitate these skills in their normal every day activities with their infants. As part of each session they will be given information about the appropriate play materials for their baby and also will have a chance to try to make some play materials.

Parents will be shown videotaped examples of these skills at the relevant age groups. They will be required to discuss the examples and will have the opportunity to practice the different ways of stimulating their babies.

MATERIALS:

Materials for each session are provided. They include teaching notes, session outlines, overheads, parent handouts, play materials.

The videotapes were specifically developed for this programme. Each tape runs for 15-20 minutes and should be played in the sections indicated in the teaching guides.

Apart from the first video on new born infants, all of the following video tapes will be shown twice, for example, the two month video will be shown in sessions two and three. Following the first viewing of each videotape, the parents should discuss their infants development and the information provided during the session. Following the second viewing one month later, the parents should then discuss their infants development and any changes they have seen over that month. They should also discuss their success with the stimulation techniques shown.

BACKGROUND INFORMATION:

How do human beings learn to communicate?. This question is central to any study of communication. While earlier theories such as those proposed by Skinner (1957) and Chomsky (1959) concentrated on language development, recent theories/ models have focused more on communication development (Bates et al, 1975; Bruner, 1983; Sugarman, 1983).

For assessment and intervention of communication impairment to be effective, they must be based on a model of communication which is rich enough to account not only for the unique properties of communication but also the development of communication and its major elements, including language.

Communication is the process of exchanging information between participants. It is...

"any means by which an individual relates experiences ideas, knowledge and feelings to another; this includes speech, signs, language, gesture and writing. It is the process by which meanings are exchanged between individuals through a system of symbols".
(Nicolosi et al, 1978)

Early intervention is based on the assumption that there is continuity between prelinguistic communicative behaviours and later communication via language.

The literature on communication development supports an interactional model of communication development, where communication is on the interface of a child's linguistic, social and cognitive systems, and is influenced not only by the natural endowments of the child, but also the environment into which the child is born (figure 1).

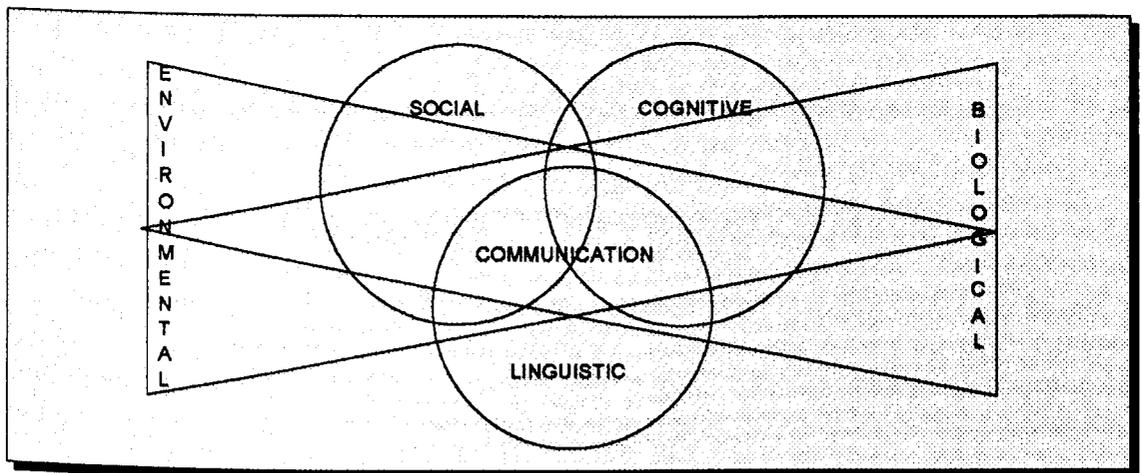


Figure 1.1: Interactional model of Communication
(adapted from Parsons, 1985)

An interactional model is supported by the work of McLean and Snyder-McLean (1978) who stated:

"By nature of its content, language carries within it the products of the cognitive development domain, by the nature of its function, language carries with it the products of human social development, by the nature of its form, language carries

within it the complex products of all the inputs identified..... plus the effect of nature and functions of the human physiological and neurological systems." (p43)

Results of cross cultural studies by Brown (1973), Slobin (1973) and Bowerman (1973) indicate that children learn basic relationships between entities within the environment (for example, relationships between people and actions, people and objects, actions and locations), which are then reflected in the semantic structures produced (agent plus action - man go; action plus location - jump here; agent plus object - mummy car). Children thus talk about what they know.

"children do not learn language and then use it to express relationships, rather, they learn entity relationships and express that knowledge in language that they learn subsequently" (Owens, 1984, p 73).

Thus children first learn about the relationship between entities, people, objects, events, in their environment and later use language to express these relationships.

Cognitive abilities are seen to develop in the first year of life. The child's sensorimotor interactions form a process that helps the child to organise the incoming stimuli. The child must then abstract basic relationships from the physical environment and rules from the linguistic environment. The relationships are subsequently internalised and categorised to appear later in the child's expressive language. Linguistic development is seen as the product of the strategies and processes of general cognitive development, though not a direct manifestation of it.

Sugarman (1973) found that the development of co-ordinated person-object in social interaction was linked to the emergence of language.

THE PROCESS OF COMMUNICATION DEVELOPMENT:

The process of communication development proposed by Harding (1983), is based on an interactional model. Harding felt that communication development during the first year sets the stage for language, in addition to other factors. She argued that the process of communication development leading to the use of vocalisations as a means of intentional communication is a necessary condition for the acquisition of words.

Harding described three characteristics of communication:

- 1) The simplest is the notion that communication can be defined as one organism having an effect on another organism, for example, the nursing event would be considered communication (Konner, 1979).
- 2) The second notion is the inference of meaning in another behaviour. Although implicit in the inference of meaning is the notion of communicative effect, this notion includes the interpretation by at least one of the organisms involved that "communication" is occurring. This aspect of communication has been defined by speech act theorists, as perlocutionary, that one partner interprets and reacts to the behaviour as communicative even though the other is not necessarily intending to communicate (Bruner, 1975 a,b; Bates et al, 1975; Sugarman, 1973; Snyder 1978).

3) The second notion leads directly to the third, intentional communication.

Harding argued that although all of these characteristics have been used by researchers to describe communication, these characteristics actually outline the developmental process of communication. She described five levels of communication development:

Level 1: Procedural Behaviours:

Communicative behaviours which are used as part of global body movements. They may have a communicative affect (eg. vocalising while banging and kicking on the high chair) but do not appear to be used for communication.

Level 2: Instrumental Behaviours:

Behaviours directed at the object or mothers hand in an instrumental way, either in an attempt to actually get the object or to set the mothers hand in motion - there is no indication of intention to communicate, instead the child trying to achieve a toy through instrumental means (Piaget, 1954).

Level 3: Intentional Gestures:

Behaviours that are a coordination of a gesture with eye contact with the mother and looking back and forth between her and the desired object (see Jones, 1978; Bruner, 1975; Bates et al, 1975; White, 1971).

Level 4: Intentional Vocalisations:

Vocalisations in coordination with eye contact with the mother and looking back and forth between her and the object. Harding argued that since gestures such as reaching had earlier been used as instrumental means for achieving the toy, an a priori hypothesis was that intentional reaching would be observed prior to the intentional use of vocalisations which provide no instrumental connection with achieving the toy (White, 1971);

Level 5: Coordinated Gestures:

Reaching, vocalising and looking used in coordination as intentional communication. Behaviours assigned to this group are used sequentially by the infant and appeared to represent alternate means the infant had for communicating (see Harding, 1981).

The process of communication development proposed by Harding is outlined in Figure six. This process emphasises both the biological and environmental factors influencing communication development.

Initially the newborn infant is seen as simply reacting to stimuli in the environment. This has communicative effect as the mother reacts to the infants behaviours. As the infant develops cognitively, the infants behaviours become more goal directed. The infant looks at, moves toward and/or reaches for objects. Sometimes the infant may also vocalise while attempting to achieve a goal. At this stage the mother begins to infer that the infant's behaviours are communicative and helps him to get the object or whatever it is that she interprets that the infant wants. She consistently responds to vocalisations as meaningful conversations on the infants part. As the infant develops cognitively so that he can sequence causal events and recognises causal agents, the infant begins to use behaviours such as

reaching and vocalising with the mother as a means of communicating with her, this stage marks the beginning of intentional communication. The mother then responds to the infant's intentional communication but "raises the ante" requiring vocalisations and later words. The infants then slowly begins to use words as a means to communicate.

This process of a gradual unfolding of intentional communication from an awareness of a goal and later to the recognition of a person as a communicative partner, and the coordination of behaviours to signal a person in pursuit of a goal (be it object or social) has been supported by the works of other researchers (Bates et al, 1979, Sugarman, 1983).

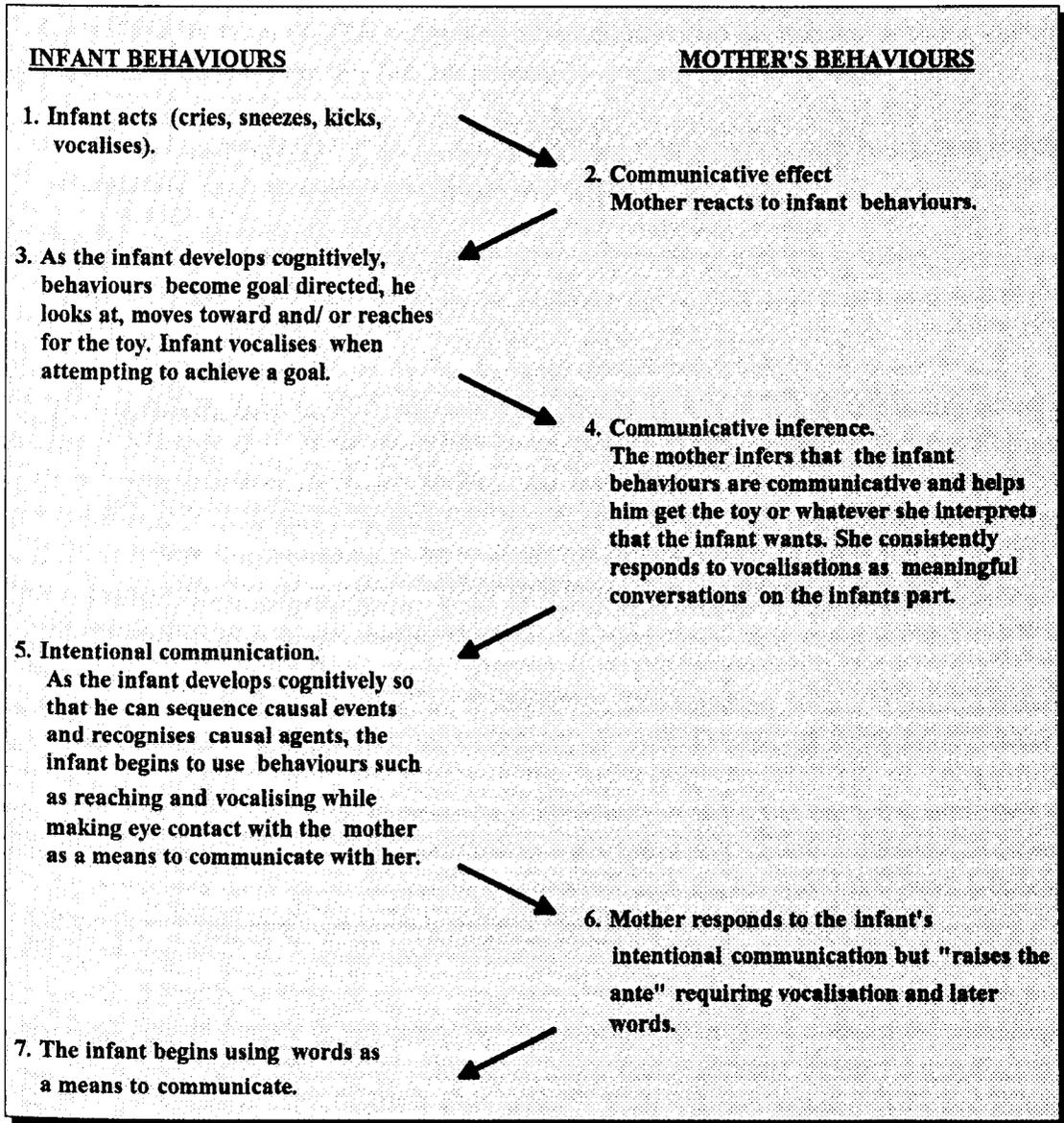


FIGURE 1.2:
(Source: Harding 1983, p 95)

Following on from the work of Austin and Searl, some linguists such as Ross (1970) and Fillmore (1968) claimed that every sentence contains two parts, a propositional component (the locution) and the performative component (the illocution). The propositional component

contains the sentences meaning, while the performative component contains the speaker's intention.

Milestones in Development:

In their 1975 study, Bates et al (1975) attempted to chart the development of performatives during the first year, inferring the intention to communicate from its first manifestations in gesture, eye control, prelinguistic vocalisations. Using Austin's (1962) concepts, they went on to propose that the development of communication proceeds through the following stages:

Stage One, in which the child has a systematic effect on his listener without having an intentional, aware control over that effect;

Stage Two, in which the child intentionally uses nonverbal signals to convey requests and to direct adult attention to objects and events;

Stage Three, in which the child constructs propositions and utters speech sounds within the same performative sequences that he previously expressed nonverbally" (p207).

Basing their study on Piaget's' stage theory, Bates et al (1975) then attempted to relate these developments to the child's cognitive development. They examined the development of two performatives, imperatives (commands) and declaratives. They defined imperatives as " the use of the adult as a means to a desired object" and declaratives as " the use of an object to obtain adult attention. In this manner, they traced the development of these performatives from their early prelinguistic roots in sensorimotor actions to their realisation in symbolic form ie. in words with corresponding propositional value.

Observable milestones in the child's performative development were reported (Bates et al 1975). Initially the declarative was indicated by the child's use of prototypic behaviours, characterised by physical contact with the adult and a differentiated set of behaviours (for example, showing off). This was subsequently followed by the child showing and then giving /pointing to the object of his shared attention with the adult. These schemes later became paired with ritualised vocalisation. Finally, a symbolic referent emerged and was employed to attract the adult's attention to the object, person or activity concerned.

McLean and Snyder McLean (1987) suggested a subdivision of the Perlocutionary stage (preintentional communication) described by Bates et al (1975) into a Reactive perlocutionary stage and a Proactive perlocutionary stage. Coupe and Goldbart (1988) identified a third subdivision, a Reactive Perlocutionary stage. Thus three stages of pre-intentional communication (Stage 1) have been identified. These are:

Stage 1a: Reflexive: the infants reflexes and early responses to internal and external stimuli serve as signals to familiar adults who interpret them.

Stage 1b: Reactive: the infants reactive responses to stimuli serve as signals to others who assign communicative significance to them.

Stage 1c: Proactive: the infant's goal directed for example intentional motor acts on objects/or people serve as signals to others who assign communicative intent to them.

Note the similarities of these descriptions to those given by Harding (1984) in her description of Communication development.

COMMUNICATIVE PARTNERS:

In Harding's (1983) study, the mothers consistently inferred intention to communicate on the part of the infant as early as 6 months. The mothers also reacted consistently to their infants behaviours, particularly eye contact and vocalising. As soon as eye contact occurred the mother reacted with comments and/or actions as if in response to intentional communication. Jones (1980) also noted this in his study.

Harding argued that the communication reaction of the mothers to the apparently coincidental occurrence of eye contact and vocalisation prior to the infants coordination of them, supported her hypothesis that the mother's inference of intent may precede and contribute to the development of intentional communication.

The description of communication development in terms of intention and inferences, is supported by the work of Sperber and Wilson (1986) and Grice (1957). Sperber and Wilson reason that communication is successful, not when hearers recognise the linguistic meaning of an utterance, but when they infer the speaker's 'meaning' from it.

This view is supported by studies of parent-child interaction which show that parents of young children reinforce children's utterances for truthfulness not grammatical correctness. (Brown, and Hanlon, 1970; Bruner, 1983).

Thus the primary communication context of interest is the mother-child or caregiver child dyad. It is the interactions that occur within this context which lead to language learning.

"As caregiver's respond to their infant's early reflexive behaviours, the infants learn to communicate their intentions. Gradually, the infants refine these communication skills through repeated interactions." (Owens, 1984, p 82).

McLean and Snyder McLean (1978) argued that *"an adequate description of language acquisition must include the basic nature and purpose of the children's communicative transactions within the social context in which they reside or function"* (p 41).

In Harding's study, mothers also reacted most often to vocalisations as communicative and used verbal responses and comments as they interacted communicatively with their infants.

Thus the mother was seen as playing an important role in the development of vocalisations as communicative behaviours. (Harding 1983).

Harding felt that although the intentional use of vocalisations does not necessarily imply the acquisition of words, the encouragement and repetition used by mothers as they respond to their infants vocalisations indicate that early in development mothers begin to selectively "teach" their infants to become word users.

It is through participating with their mothers in preverbal communicative exchanges that babies learn their roles as conversational partners. By consistently initiating and maintaining the conversation model, the mother is unwittingly highlighting the salient aspects of the basic communicative partnership. During these exchanges, the child learns to take turns (Bricker and Carlson 1979; MacDonald 1982).

"It is only because he has been treated as a communicative partner that he learns the essential art of communication" (Newson, 1978,p.42)

Nino and Bruner (1976) also found participation in ritualised dialogues rather than imitation to be the major mechanisms by which labelling was achieved. The child's lexical labels were regarded as more adult like substitutions for earlier communicative forms that he utilised in the dialogue. These were smiling, reaching, pointing, babbling, and vocalising which were consistently interpreted by the mother as expressing the child's intention of requesting a label or providing one.

Within the communicative context, the mother assumes that her child is attempting to communicate meaningfully and interprets the infant's behaviour. The importance of the mother's interpretation of the infants action has been stressed by many researchers (Harding, 1981; Nelson, 1973; Ryan, 1974; Bruner, 1975a, 1975b; McDonald, 1982).

Ryan (1974) noted *"that much of what a child utters in the early stages is difficult to understand, if not unintelligible"*, however, *"the child's speech and other vocalisations take place within a context of interaction with adults who are motivated to understand the child's utterances"* (p 199). She also stated that *"many young children experience extensive verbal interchanges with their mothers. During these the mother actively picks up, interprets, comments upon, extends, repeats and sometimes misinterprets what the child has said"* (p199).

In interpreting the child's communicative intent either correctly or incorrectly, the mother has a rich variety of cues to go by. If the mother is consistent in her response, the child gives cues that are predictable consequences as far as her behaviour is concerned. (Bruner, 1975b).

"The maintenance of communication....is only accomplished by the fact that one of the communicating persons is socially sensitive to the affect (sic) of what is happening to the other moment by moment" (Nelson 1979, p 213). The mother is seen to tailor her responses to the child's level of apparent competence and context. *"The mothers learn this skill in order to sustain and exchange and to hold attention."* (Owens, 1984, p 119).

Scouvillee (1983) felt that communicative intentionality may be more appropriately considered to be a property of adult perception of infant behaviour than of the child himself.

Communication skills are thus seen to develop within the mother - infant dyad and provide the basis for the infants learning the linguistic code (Bruner, 1975 a,b; Kaye, 1979).

One problem with Harding's proposal is that not all cultures treat their infants as communicative partners. Schieffelin (1983) reports that Kaluli caregiver's are less directive of communicative interaction during the preverbal period than western mothers. They do not interpret their infant behaviours (including babbling) as meaningful, they rarely address speech to infants, and to the extent that they do address them, they do not leave room for the child to respond. This pattern then reverses in the language period.

Results of early communication studies suggest that development of preverbal intentional (coordinated person-object) communication may be necessary but not sufficient, for the emergence of language (Sugarman, 1973; Bates et al, 1975, 1979; Harding & Golinkoff, 1979).

Sugarman (1973) felt that they may both be normal manifestations of a higher order chain that consists of general cognitive and social development. If the broader developments are proceeding normally, and if there is adequate social and linguistic input from the environment, then children will exhibit intentional communication at around 12 months and language shortly after. However, the emergence of language may not depend on the previous development of any behaviours manifest of intentional communication. Sugarman argued that fully coordinated preverbal communication may be optional rather than a requisite stepping stone to language in normal development.

Sugarman suggested that facilitation of preverbal communication might prompt attainment of language in cases of disorder. Urwin (1978) and Bower (1974) also supported the notion that facilitation of earlier "non-necessary" behaviours may accelerate the development of other related behaviours.

The implication of studies by Jacob (1988), Schieffelin (1983), and Urwin (1979) is that there may be more than one route to language. The path one takes may be determined by the interplay between cultural, biological and environmental factors.

CONCLUSION:

What then can one conclude about the nature of communication development in the first year and how it relates to later communication and language development?

It appears that communication development in the first year "*sets the stage*", as Harding (1983) aptly stated, for more formal communication by language. Cognitive, biological and environmental/social factors all play an intricate role in the development of communication and language, neither one is satisfactory in itself to explain communication and language development. Only when they are all considered together do we begin to gain a full picture of

this process. Only an interactional model of communication development is able to satisfactorily account for the development of communication as a multi-dimensional phenomenon. The acquisition of formal communication via language is tied either directly or indirectly to earlier forms of social effective, communicative and cognitive behaviour (Bates 1979; Nelson 1979; Bricker and Carlson 1982).

This position, *"does not attempt to imply that early social communication and cognitive skills determine the acquisition of language in that prelinguistic behaviours are directly continuous with semantic or grammatic structures. Rather, early social communication and cognitive experiences are viewed as providing a basis for the acquisition of more formal language structures."* (Bricker and Carlson, 1982, p292). This model provides a sound basis on which to develop an intervention programme for early communication development.

LEARNING TO COMMUNICATE

SESSION ONE

TEACHING NOTES

(refer to Session One teaching points)

INTRODUCTION:

Introduce yourself- encourage parents to introduce themselves and their babies. All parents are to be given name tags to encourage interaction.

AIMS OF THE PROGRAMME:

Outline the aims of the programme (Overhead 0.1)

EXPECTATIONS:

Outline the expectations of the programmes. Inform parents that they need to attend all of the sessions. If they miss one they can make it up with another group. If unable to attend they need to inform you ASAP.

COMMUNICATION:

Present the following information:

As we said, we will begin our programme by talking about communication.

Your baby began learning about his new world from the day that he was born. Over the next 12 months, he will learn many things that will have a major effect on the rest of his development. He is like an explorer who is on a voyage of discovery. Along the way, he will soon begin to learn to use his senses of taste, touch, smell, hearing and sight in order to make sense of this exciting new world.

One of the most important things that he will learn is how to communicate. Many people mistakenly think that babies don't begin to communicate until they start to talk in single words. This is not the case. By the time your baby has his first birthday, he will have learnt all of the main rules of communicating.

(Ask the group:)

"What is communication?"

(Write down their responses on Overhead 1.1)

Although we all communicate to each other every-day, we rarely stop to think about what it is and why it is so important to us. Without communication we wouldn't be able to interact

with our family and friends, we wouldn't be able to work and we certainly wouldn't be able to share a joke. Can you imagine your life without communication?

Summarise:

Overhead 1.2:

Communication is:
any means by which a person exchanges a
message with another person

It is important to realise that speech is not the only way that we communicate. We also communicate by writing, drawing, making gestures, facial expression, our body language, our tone of voice and even how close we stand to people.

Think of all the different ways that you communicate each day.

(Write them down on overhead 1.3- discuss)

It is also important to think about why we communicate with each other. Basically, communication is a way of achieving our goals. By communicating, we can get things that we want such as objects and information; or we can get people to do things for us.

Although language is the main way that we communicate to each other, the other ways of communicating are just as important. We often use a variety of different ways of communicating to convey a message, for example, drawing a map while giving directions.

Babies first learn to communicate non-verbally, that is without language. Your baby will first learn the functions of communication, for example, to request a toy, and will then gradually develop the language skills to express those functions.

There are three main functions which form the basis of most of our later communication. These are requesting, informing and rejecting.

(Overhead 1.4)

Requesting: This is basically asking someone for something. We can request objects (such as biscuits); actions (such as asking someone to drive us to the shop) and information (such as asking the name of an object)

Informing: This is giving information about objects, people and events (such as telling someone that its very cold outside). It includes commenting about things, showing things and answering questions.

Rejecting: This is indicating that you either don't want something, don't want to do something or that you disagree with something.

Your baby will first learn to communicate these functions with his body movements, actions and vocalisations.

Summarise:

Overhead 1.4:
Communicative functions:

- requesting
- informing
- rejecting
- any means by which a person exchanges a message with another person

Three skills which are essential to communication development in the first 12 months are: eye contact, joint attention and turn-taking.

(Overhead 1.5)

Eye Contact:

You will notice that from a very early age that your baby is attracted to your eyes. When your baby makes eye contact with you, it makes you feel that he wants to talk to you. This is because eye-contact signals to us that someone is "ready" to communicate with us. Think about how you feel when you are talking to someone who doesn't make eye-contact with you, someone who looks all around the room and never at you. Basically you feel that the person isn't interested in talking to you. You probably also feel very uncomfortable with that person.

The first step in communicating with someone effectively is to make eye-contact with them. By doing this we know that the person is ready to communicate, that he listening to what you are going to say. Eye contact is also used to direct someone's attention.

Your baby will first learn to communicate by using his eye-contact to indicate to you what he wants. Later he will begin to combine actions and vocalisations with his eye-contact in order to communicate with you.

Joint Attention:

Joint attention is when two people attend to the same thing at the same time. Without it people would never talk about the same things. In order to have an effective conversation, we need to talk about the same topic. Can you imagine us trying to have a conversation if you were talking about one thing and I was talking about something else. Let's try it.

(Ask one of the parents to talk about the weather and as another to talk about the football in response.....)

It is through your joint activities with your baby that he will learn to communicate. Through play, your baby will first learn to attend to objects or toys that you place in front of him. He will then begin to use his hands to direct his own attention to things and will begin to follow where you point. By 12 months, he will have learnt how to direct your attention by pointing and will even begin to look where you look.

Turn-Taking:

In order to have a conversation, we need to be able to take-turns. Turn-taking begins very early in your baby's development. Initially your baby will simple use general body movements as his turn. As you interact and talk to him you will notice that he will look at your face intently. He will go very quiet and still while you talk and will begin to move around when you stop. At first there will be a little overlap with your turns but as he develops his turns will become more definite. It is essential that you give your baby the opportunity to take turns early in his development. You can do this be "waiting" after you've said something so that he has the chance to respond. Babies need time to respond.

As your baby develops, his turns will become more like yours. When you talk to him, he will tend to use vocalisations more and when you do actions, he will also tend to respond with actions. Games such as pat-a-cake are very good for encouraging turn-taking.

Summarise:

Overhead 1.5:
Important skills for communication development:

- eye contact
- joint attention
- turn-taking

(Play videotape section " Learning to communicate 1" (.00.00 -4.30). Discuss.....).

DEVELOPMENT AT BIRTH

It would be easy to think that your new baby does little other than to sleep and feed all day, but if you watch him carefully, you will notice that he can actually do many things. Your baby started to develop skills while still in the uterus. Most of his early skills are there to help him to survive.

(Ask the parents what skills they think a new born baby has- write on blank overhead)

MOTOR DEVELOPMENT:

(Overhead 1.6)

Your new born baby has very little control over his body. He is unable to support his own head and most of his early movements are governed by his reflexes. These reflexes are present to help him to survive. He has rooting and sucking reflexes to help him to feed and gag and cough reflexes to protect his airway. He has many other reflexes which are also important to his development. Your doctor will check these when your baby is 6-7 weeks old.

The "rooting reflex" is very important for helping your baby to attach to the breast or a bottle. It can be activated by stroking the side of his face. When you do this he will turn his head toward that side and open his mouth, particularly on the side he was touched. You should always try to activate this reflex when you are about to feed your baby.

He also has a "sucking reflex" which is activated when anything is put into his mouth, particularly if it touches his palate. Like you, your baby has "cough" and "gag" reflexes to stop food going the wrong way.

Although his movements are random at first, he will quite quickly begin to gain more control over them, he will move his limbs more and will begin kicking. He will also start to straighten up, trying to lift his head.

His hands will tend to be closed at first and will gradually begin to open up more as he starts to touch things that are around him, his clothes, your clothes, your face.

Summarise:

Overhead 1.6:

Motor skills

- unable to support his head
- body movements random and controlled by flexes
- hands closed

LOOKING:*(Overhead 1.7)*

At this age your baby can see 7 -10 inches away. Anything further away than this is a "blur" to your baby. He is unable to make out fine detail, seeing only the main parts of things. He is very attracted to bright colours such as yellow and red and particularly likes objects which have contrasts of colour. He is even able to follow bright objects briefly with his eyes. He will quickly become fascinated with your eyes because they are so different from the rest of your face and are just the right distance away from him when you are feeding him.

*Summarise:***Overhead 1.7:****Looking skills:**

- can focus 7-10 inches from face
- is attracted to brilliant colours
- is attracted to contrasts
- will fix on and follow bright objects briefly

LISTENING:

At this age your baby is very sensitive to noise and will startle to loud noises. You will find that he is attracted to human voices very early and will settle to soothing voices and music. Your baby is too young to be able to locate where sounds are coming from. Your early childhood nurse will regularly screen your baby's hearing.

*Summarise:***Overhead 1.8:****Listening skills**

- startles to loud noises
- is attracted to voices
- is attracted to music

UNDERSTANDING OF THE WORLD:

Your baby is beginning to learn about his new world through touching, tasting, smelling, feeling, listening and looking. As his senses develop he is able to explore his surrounding more. Each day his experiences are adding to his knowledge about how the world works. At this stage he is simply reacting to things that are happening around him.

Summarise:**Overhead 1.9:****Understanding of the world:**

- has little understanding yet
- reacts to what is happening around him

COMMUNICATION SKILLS:

As you are aware, your new born baby is unable to communicate with you, however, he has already begun to develop skills (such as looking, giving you eye-contact and listening) which will help him to communicate. Your baby will soon begin to take-turns when you are talking to him. See how he wriggles around when you stop talking. This is the beginning of his journey toward communication.

Summarise:**Overhead 1.10:****Early communication skills:**

- primitive turn-taking using general body movements
- attracted to eyes
- starting to attend to objects

*(Play videotape section "Development at Birth- see what I can do!" (00.00 to 00.00)
Discuss.....)*

HELPING YOUR BABY TO LEARN

(Discuss the importance of mum and dad in helping baby to learn).

Everything that you do can help your baby to learn. You don't have to set aside a special times of the day to "teach" your baby, he is learning all of the time. He learns best simply by being with you and having the opportunity to experience new things.

WHERE SHOULD BABY PLAY:

You need to lie your baby in different positions for short periods during the day to help to strengthen his muscles. Lying him on his tummy will help to encourage him to lift his head up and will help to strengthen his neck and back muscles. Lying him on his back will encourage him to move his arms and kick his legs. It will also allow him to move his head from side to side easier and to follow objects. Different positions give him different views of the world and allow him to better explore his environment.

Summarise:

Overhead 1.11:

Where should baby play:

- near you
- in a variety of positions each day to help strengthen his muscles

ROUTINE ACTIVITIES WHICH HELP BABY TO LEARN:

There are several routine activities that you carry-out with your baby every day which provide ideal opportunities for you to interact with your baby.

Summarise:

Overhead 1.12:

These are:

- feeding
- nappy changing
- bath time

Feeding:

You probably feel that besides sleeping, your baby does little else but feed. It is during feeding that your baby has the best opportunity to interact with you. During feeds your face is close to your baby's. He can look at your eyes, hear your voice as you talk to him and feel you close to him. Your baby likes to be held firmly against you so that he can feel your heart beat. In this position he feels secure and comforted.

Nappy changing:

You have many nappy changes to look forward to in the next 12 months, so its important to make the most of them. Nappy changes not only provide you with a good opportunity to have a chat to your baby but also to monitor his motor development.. Talk to him about how he is growing and moving his body, remember to lean over him so that he can focus on your face. If your too far above him, you'll be a blur. You will notice that he will begin pushing and kicking more with his legs. Encourage him to have kicks with his nappy off.

Bath-time:

Like nappy changing, bath-times give you the opportunity to see how your baby is developing. Although babies tend to enjoy their baths, they don't take kindly to being dressed and undressed. You will most likely find that your baby will move his legs and arms around a lot in the water and will find it quite relaxing. Again it is good to get into the habit of talking to your baby while you are bathing and changing him.

SPECIFIC ACTIVITIES THAT HELP YOUR BABY TO LEARN:

(Give parents the skill and ask them to think of activities to think of activities which could encourage its development. Get on of them to write them down on the overhead. Discuss and add any of the following that they may have missed).

To encourage conversations:***(Overhead 1.13)***

It is never too early to begin having conversations with your baby. Here are some ways that you can help your baby to learn how to have a conversation:

- ensure that your baby is close enough to you to see your face!
- talk to him during all your routine activities such as bathing, nappy changing dressing etc.
- remember to give your baby the opportunity to respond to you. Wait for him to respond before you continue to talk.
- remember that initially he will take turns using general body movements
- use a lot of inflection in your voice as your baby is more attracted to variations in sound.

To encourage listening:***(Overhead 1.14)***

It is important to give your baby the opportunity to respond to different sounds. You will find that he will respond differently to different sounds. He will startle to loud sounds and will settle to others especially your voice or music. Here are some ways that you can encourage your baby to listen:

- sing while gently rocking your baby in time to the music
- speak softly while you are bathing or feeding him
- avoid sudden loud noises
- gently shake different sorts of noise makers eg. rattles, bells
- sing him lullabies and simple rhymes
- activate a music box
- play different sorts of music

To encourage looking:***(Overhead 1.15)***

There are many things that you can do to encourage your baby's looking skills. Again many of these things can be done during routine activities. Here are some things to encourage looking:

- put objects 7-10 inches away from baby's face, tilt them so that he can see them properly
- attach toys, mobile to the sides of the cot
- change toys regularly
- pick toys, pictures with bright contrasting colours
- ensure that your face is close to his to encourage him to look at you while you are talking to him
- hold a bright toy above baby's face and move it to attract his attention, slowly move the toy from side to side, to encourage him to follow it with his eyes.
- place a mobile over your baby's cot

To encourage touching:**(Overhead 1.16)**

You can encourage your baby to touch and explore his environment by doing the following:

- touch your baby's face with your hands
- use a washer during bath times, to brush over baby's face and body
- massage baby, stroking his arms, legs, body and face
- kiss baby's hands, let him feel your face and mouth
- touch baby's palms with objects and cloths of different textures (rattles, face cloths, toys)
- dress baby in cloths made of different materials or with different textures on them
- wear clothes with different textures, encourage baby to touch them (eg. a soft scarf and a woollen jumper)

Play videotape section "Mum and Dad help me to Learn" (09.00 - 14.00) Discuss.....

THINGS THAT MAKE LEARNING FUN

At this age your baby isn't able to play with many things as he hasn't yet sufficient control over his body. You are the best and most accessible toy that he has at this stage. As your baby begins to develop, he will begin taking more notice of this around him. The toys that you introduce at this age should encourage:

Overhead 1.17:
Toys should encourage:

- listening,
- looking,
- touching.

- Appropriate toys for this age group are:
- noise makers such as small rattles
- music boxes and chimes

- bright and contrast coloured mobiles and pictures
- toy frames for basinetts and Fraser chairs
- play mats with a variety of different textured panels
- wrist rattles
- teethers
- soft small toy animals with different textures

(Play videotape section "Things that make learning fun" (00.00 to 00.00) Discuss.....)

LEARNING TO COMMUNICATE

SESSION TWO

TEACHING NOTES

(refer to Session Two teaching points)

INTRODUCTIONS:

Encourage parents to introduce themselves to each other again. All parents are to be given name tags to assist interaction.

Ask each parent in turn to tell the group one thing that their baby is now doing that he/she wasn't doing last session.

Ask the parents if they have any questions from the last session and the handouts that they were given?

Try to answer the question as best you can. If you are unsure of the answer, say: "That is a good question, we do not have time to discuss that today. We will talk about that next session" or "I will give you a ring and talk to you about it later" or some such thing. This will allow you time to consult with the Main Researcher.

DEVELOPMENT AT TWO MONTHS:

Present the following information:

Today we will be focusing on development at 2 months. You will have noticed that your baby is now able to do many more things than he/she could last session.

At this age, much of your baby's day is spent sleeping or feeding, although, he is beginning to spend more and more time awake. During these waking times he is starting to take more notice of the world around him.

MOTOR DEVELOPMENT:

(Overhead 2.1)

Although his muscles have grown stronger over the last two months, he still does not have very much control over them. You will have noticed that although he is moving his arms and legs more, his movements are still quite random.

He likes to watch his own movements, but he hasn't yet realised that he is actually making them! At first you might see him looking at one of his outstretched hands for a moment or his foot while your changing his nappy.

He is now able to hold his head up for short periods, and when he lies on his back, he can look upward for some time without his head flopping to the side.

Although his hands are now much more open, he isn't able to hold objects placed in them and hasn't yet started to reach for things.

Summarise:

Overhead 2.1

Motor skills:

- muscles are stronger
- is more active, kicking, moving arms around
- movements are still random
- able to hold his head up for short periods
- hands are more open
- is unable to hold objects placed in hands

LOOKING:

(Overhead 2.2)

Even though your baby is still only able to see relatively short distances away, he is starting to take much more interest in things around him. He is beginning to follow moving objects briefly with his eyes. He is also starting to become quite fascinated with bright objects. Soon he will start to stare for quite long periods at objects out of reach. He has started to develop a keen interest in faces, particularly mouths and eyes.

When you go out for walks you will notice that he is starting to take more interest in things, particularly things that move, such as, people moving past his pram or the movement of trees in the wind.

Summarise:**Overhead 2.2****Looking skills:**

- is more interest in surroundings
- is able to briefly follow moving objects with eyes
- is fascinated by bright colours
- is interested in faces, particularly eyes & mouths

LISTENING:**(Overhead 2.3)**

Sounds are very important to your baby at this age. Because he is unable to move around, he depends on his sight and his hearing to explore his environment. Although he still startles to loud noises, he is much more attentive to sounds that occur around him. He is particularly interested in voices at this age. He will quieten and often stop sucking when he is spoken to. Because he is too young to be able to work out where sounds are coming from, he will not try to search for them.

Summarise:**Overhead 2.3****Listening skills:**

- depends on sounds to explore his environment.
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds
- depends on sounds to explore his environment.
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds

UNDERSTANDING OF THE WORLD:***(Overhead 2.4)***

As you are aware, your baby's knowledge about the world in which he lives is still very limited. Each day he learns a little more to add to his jigsaw puzzle. At this stage your baby is starting to develop little goals, that is, he has started to realise that there are things that he wants. His understanding of the world hasn't yet developed enough for him to work out how he can get these things. You will see him staring at objects for quite long periods. You can imagine him saying: "I'd really like that but how can I get it?". He doesn't yet know that he can use his body or other people to get things that he wants, even things that are in reach.

At this age he doesn't yet have an understanding of cause and effect relationships. Although he can notice changes occurring around him, he doesn't yet know how to produce changes himself.

His play is very limited at this age because he doesn't yet have enough control over his hands to hold toys or to manipulate them. He does, however, like to look at toys and bright objects. You can encourage his interest by hanging toys from a frame or across his crib. Hanging frames are very useful for babies at this age.

Summarise:**Overhead 2.4****Understanding of the world:**

- is very limited
- is beginning to develop goals
- is unable to work out how to get what he wants
- notices changes around him
- play is limited

COMMUNICATION DEVELOPMENT:***(Overhead 2.5)***

Your baby is beginning to be much more responsive and communicative by this age. You will notice that he really enjoys having conversations with you. The importance of eye contact is something your baby learnt weeks ago. When you are talking to him, notice how he looks at you and smiles. Encourage him to participate in your conversations by taking turns with him. Although he can't talk yet, he can take turns by simply moving his body. Sometimes he might also vocalise during his turn. His vocalisation will mostly consist of open mouth sounds like "ah" or grunting sounds. This is because he hasn't yet developed very much control over his mouth. You might hear him practicing different sounds in his cot when he first wakes up.

Summarise:**Overhead 2.5****Communication skills:**

- is more responsive
- enjoys conversations
- maintains good eye contact when spoken to
- takes turns with general body movements
- vocalisations limited to open mouth sounds
- is starting to practice sounds

(Play videotape section "Development at 2 months- See what I can do." (00.00-00.00). Discuss.....)

HELPING YOUR BABY TO LEARN

It is important to remember that you provide your baby with opportunities to learn new things by simply having him with you while you undertake your normal, everyday activities. It is good to set aside a little time each day to have a quiet time with your baby, however there are many routine things you do each day which can help your baby to learn.

WHERE SHOULD BABY PLAY:

Now that your baby is taking more notice of things, it is a good time to introduce him to a reclining chair. These provide good support for baby and enable him to have a good view of things around him. You can move the chair around the house with you so that he can watch what is going on. Remember, it should never be placed on a table or work bench. Always use the harness to secure your baby in the reclining chair.

A rug or sheet that you can spread out on the floor is essential for this age group. Remember it is important to continue to lie your baby in different positions during the day. This will help to strengthen his muscles and will also give him different views of the world. While laying on his tummy, he can practice lifting up his head and looking around.

Summarise:**Overhead 2.6:****Where should baby play:**

- near you
- in a reclining chair
- in a variety of positions each day

ROUTINE ACTIVITIES THAT HELP BABY TO LEARN:

Don't forget that there are many routine activities that you do with your baby everyday which provide important opportunities for him to learn and interact with you.

Overhead 2.7

Feeding
Nappy Changing
Bathing

Feeding:

Feeding is still one of the most special times of the day that you spend with your baby. It provides you with an ideal opportunity to develop your relationship with him. While being held close to you during his feed, he can feel your heart beat, the warmth of your body and can clearly see your face. Make the most of these times by using them to communicate with your baby. Talk to him quietly about his day, how he is growing or even use the time to quietly sing him a lullaby. Your baby will learn a great deal from these quiet times together.

Nappy changing time:

By this stage you probably feel that you do little else but change nappies! Nappy changing does not have to be an unpleasant chore, that you have to do as quickly as possible. Of course there will be times where you will need to rush, however, at other times use it as a special time to spend with your baby. You will find that now your baby is more alert and responsive, nappy changing can be quite enjoyable. It provides a wonderful opportunity to talk to him, to play with him and to simply be with him.

Remember that you will still need to lean over him so that he can clearly see your face. Again, talk to him about what he is doing, how he is growing. Although he can't understand

the words you are saying, he will respond to how you are saying them. Nappy changing times will also give him the opportunity to have kicks without his nappy on.

Bath-time:

At this age baby still may not always be keen to be undressed and dressed. Generally your baby will find the warm water very relaxing. He can kick and move his arms freely in the water. Remember to talk to him as you bath and dry him. It is through these conversations that your baby will learn about his body parts and his actions. He is also learning many other skills such as taking turns, attending to the same thing.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Now that your baby is taking more notice of things around him, you can place his reclining chair near you while you perform your normal daily activities. For example, he'll be very interested in the things he can see and smell and hear in the kitchen while you prepare dinner. When the family are sitting down to dinner, don't forget to include baby. He will enjoy being with you, listening to your conversations, and even participating at times.

He will also enjoy going outside for short periods of time. At this age you can begin lying him on a rug or in his reclining chair on the grass. Talk to him about the things he can hear and see outside, such as the birds flying over head, the trees and the colour of the flowers. Talk about things in which you notice he shows interest. For example, if he stares at the dog, talk to him about it and pretend that he is talking back to you.

He will also start to take more notice of things around him as you take him out in his pram. Try to go for a walk at least once a week. It will be good exercise for you and a great adventure for him. Again, don't forget to talk to him about all of the things that you can see and hear as you go.

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

(Give parents the skill and ask them to think of activities which could encourage the development of that skill. Ask one of the parents to write them down on an overhead. Discuss and add any of the following that they may have missed. Use the printed overhead to summarise)

To encourage conversations:

(Overhead 2.8)

By this age your baby is becoming more alert and responsive. Through your conversations with him, he will learn so many things. Here are some more ways that you can help your baby to learn how to have conversations:

- remember that your baby needs to be able to see your face while you talk to him.

- talk to him during your routine activities with him. You don't need to set aside "special" times to talk to him.
- use variety in the tone and inflection of your voice.
- give him the opportunity to take a turn in the conversation. Initially accept any movement or sound as his attempt to have a turn. The more you do this, the more deliberate his turns will become.
- pretend that he is talking to you! When he makes sounds, talk back to him as if he is starting up a conversation with you. By doing this, you are reinforcing the sounds that he makes.
- remember to give him eye contact when you talk to him.
- encourage other people to talk to him. This will help him to become familiar with other people and will also add to his general experiences.

To encourage listening:***(Overhead 2.9)***

Now that he is becoming more alert, you will notice that he is taking more notice of the different sounds around him. Continue to add to his listening experiences:

- introduce him to different sounds in his environment by moving him around the house to where all the activity is.
- sing him songs, lullabies and simple rhymes with actions.
- show him brightly coloured rattles with different noises. Move them in front of him while they rattle.
- place a music box or pull musical toy in front of him and activate. When the sound stops, wait for him to respond before activating it again.
- play different types of music on the radio or record player.

To encourage looking:***(Overhead 2.10)***

At this age, your baby is very attracted to bright colours. He is particularly interested in things which have distinctive contrasts in shapes and colours such as black and white, red and blue.

- remember that baby can see objects best 20- 30 cm from his face.
- hang toys from a frame over his reclining chair or cot. Place them close enough for him to accidentally touch them if he moves his hand. This will also encourage him to reach.

- change toys regularly to retain his interest.
- place bright prints or magazine pictures on the wall near his cot, at eye level.
- move bright objects in front of him to encourage him to follow them with his eyes.
- sit him up on your lap or in his reclining chair or hold him upright in your arms to give him a better view of his environment.

To encourage touching:

(Overhead 2.11)

Although he doesn't have a lot of control over his hands as yet, he is beginning to use his hands more to explore his environment. You can encourage this:

- continue to give your baby massages. This will be enjoyable for both of you.
- dress baby in clothes made from a variety of materials or with different textures. Move his hand across them so that he can feel them.
- wear clothes yourself that have contrasting texture; encourage baby to touch them.
- place objects close enough for baby to touch them accidentally; encourage him to touch them by gently moving his hands across them.

(Play videotape Section "Mum and Dad help me to learn" (00.00-00.00). Discuss...)

THINGS THAT MAKE LEARNING FUN

(Overhead 2.12.)

Your baby's most important play thing is still you! Although he is still unable to play with toys, he is more aware of them. The most important functions of toys at this age are still to encourage listening, looking and touching. Toys that are appropriate for this age include:

- noise makers such as rattles, bells; preferably small and brightly coloured.
- teethers in a variety of shapes, textures and colours.
- wrist rattles
- toy frames to hang over the reclining chair (essential)
- bright and contrasting toys to hang from the toy frame
- a bright mobile to hang over the cot
- bright and contrasting prints or magazine pictures

- a roly poly
- pull music boxes and chimes.

(Play Videotape section "Things that make learning fun" (00.00-00.00). Discuss...)

LEARNING TO COMMUNICATE

SESSION THREE

TEACHING NOTES

INTRODUCTIONS:

Encourage parents to introduce themselves to each other again. All parents are to be given name tags to assist interaction.

Ask each parent in turn to tell the group one thing that their baby is now doing that he/she wasn't doing last session. Ask parents if they have any questions from the last session or the handouts that they were given.

Again, try to answer the question as best you can. If you are unsure of the answer, say. "That is a good question, we do not have time to discuss that today. We will talk about that next session" or "I will give you a ring and talk to you about it later" or some such thing. This will allow you time to consult with the Main Researcher.

The aim of this session is to reinforce what was learnt last session and to facilitate the parents understanding of their own infants development and ways that they can stimulate that development. This session should be interactive with the you facilitating discussion. If the parents do not cover all of the points under a section, you need to add them. In some instances you may be able to cue them through additional questioning.

DEVELOPMENT:

Provide the following information:

In our last session, we focused on development at 2 months. Let us now re-cap on what we learnt about baby's development.

We'll begin by watching the video again. As you watch it see if there is anything that you missed last time. Is your baby starting to learn the skills shown on the video? One of the aims of the video is to highlight behaviours to you that you might otherwise miss in your baby's development.

Play videotape section: "Development at 2 months- see what I can do" (00.00-00.00).

MOTOR DEVELOPMENT:*(Overhead 3.1)*

Let us start with motor development.

Question:

What motor skills do you see in a 2/3 month old baby? *Discuss...*

Cover the following:

- his muscles have grown stronger
- he does not have very much control over his muscles
- he is moving his arms and legs more
- his movements are still quite random.
- he likes to watch his own movements, but he hasn't yet realised that he is actually making them!
- at first you might see him looking at one of his outstretched hands for a moment or his foot while your changing his nappy.
- he is now able to hold his head up for short periods,
- when he lies on his back, he can look upward for some time without his head flopping to the side.
- his hands are now much more open,
- he isn't able to hold objects placed in them
- he hasn't yet started to reach for things.

Summarise:**Overhead 3.1****Motor skills:**

- muscles are stronger
- is more active, kicking, moving arms around
- movements are still random
- is able to hold his head up for short periods
- hands are more open
- is unable to hold objects placed in hands

Ask the parents if they have noticed the development of any of these skills in their babies.

LOOKING:

(Overhead 3.2)

Question:

In what ways are the looking skills of a 2 month old baby different than those of a new born baby? *Discuss*

Cover the following points:

- baby is still only able to see relatively short distances away,
- he is starting to take much more interest in things around him.
- he is beginning to follow moving objects briefly with his eyes.
- he is also starting to become quite fascinated with bright objects.
- soon he will start to stare for quite long periods at objects out of reach.
- he has started to develop a keen interest in faces, particularly mouths and eyes.
- when you go out for walks you will notice that he is starting to take more interest in things, particularly things that move, such as, people moving past his pram or the movement of trees in the wind.

Summarise:**Overhead 2.2****Looking skills:**

- is more interest in surroundings
- is able to briefly follow moving objects with eyes
- is fascinated by bright colours
- is interested in faces, particularly eyes & mouths

Question:

Have you noticed the development of these skills in your baby?

LISTENING:

(Overhead 2.3)

As we discussed last month, sounds are very important to your baby at this age. Can you remember why they are so important? *Discuss...*

Comment:

Because he is unable to move around, he depends on his sight and his hearing to explore his environment.

Question:

What other changes in his listening skills do we notice at this age? *Discuss...*

Parents should cover the following points:

- although he still startles to loud noises, he is much more attentive to sounds that occur around him.
- he is particularly interested in voices at this age. He will quieten and often stop sucking when he is spoken to.
- because he is too young to be able to work out where sounds are coming from, he will not try to search for them.

Summarise:**Overhead 2.3****Listening skills:**

- depends on sounds to explore his environment.
- depends on sounds to explore his environment.
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds

Question:

Is your baby attending more to sounds around him? What does he do that indicates this to you? *Discuss...*

UNDERSTANDING OF THE WORLD:

As we discussed last month, your baby's knowledge about the world in which he lives is still very limited at this age. Each day he learns a little more to add to his jigsaw puzzle. We discussed how babies begin to develop little goals, that is, they start to realise that there are things that they want.

Question:

Have you noticed your baby starting to develop little goals. What does he do that indicates this? *Discuss...*

Parents should indicate the following:

- stares at objects for long periods
- follows objects briefly with his eyes.

Comment:

Your baby's understanding of the world hasn't yet developed enough for him to work out how he can get these things. You will see him staring at objects for quite long periods. You can imagine him saying: "I'd really like that but how can I get it?". He doesn't yet know that he can use his body or other people to get things that he wants, even things that are in reach.

Remember that at this age he doesn't yet have an understanding of cause and effect relationships. Although he can notice changes occurring around him, he doesn't yet know how to produce changes himself.

Question:

What have you noticed about your baby's play over the last month? *Discuss...*

Parents may indicate the following:

- play is very limited at this age because he doesn't yet have enough control over his hands to hold toys or to manipulate them.
- he likes to look at toys and bright objects.

Question:

How have you encouraged his interest in toys? *Discuss...*

Summarise:**Overhead 2.4****Understanding of the world:**

- understanding very limited
- is beginning to develop goals
- is unable to work out how to get what he wants
- notices changes around him
- play is limited

COMMUNICATION DEVELOPMENT:**(Overhead 2.5)**

I'm sure that you have noticed that your baby is becoming much more alert and responsive. He is becoming more communicative. Does he seem to enjoy having conversations with you? *Discuss...*

Question:

Is your baby giving you more eye-contact now when you talk to him?

Comment:

The importance of eye contact is something your baby learnt weeks ago. When you are talking to him, does he look at you and smile?

Question:

Does your baby take turns with you? Have you noticed that he wriggles his body when you pause? Does he sometimes vocalise as well?

Comment:

Remember to encourage him to participate in your conversations by taking turns with him. Although he can't talk yet, he can take turns by simply moving his body. Sometimes he might also vocalise during his turn.

Question:

What sorts of sounds does your baby make?

Question:

Does he practice different sounds in his cot when he first wakes up? *Discuss...*

Summarise:**Overhead 2.5****Communication skills:**

- is more responsive
- enjoys conversations
- maintains good eye contact when spoken to
- takes turns with general body movements
- vocalisations limited to open mouth sounds
- is starting to practice sounds

HELPING YOUR BABY TO LEARN:

It is important to remember that you provide your baby with opportunities to learn new things by simply having him with you while you undertake your normal, everyday activities. It is good to set aside a little time each day to have a quiet time with your baby, however as we

said last session, there are many routine things you do each day which can help your baby to learn.

Play videotape section: "Mum and Dad help me to learn" (00.00-00.00)

WHERE SHOULD BABY PLAY:

Question:

Have you tried placing your baby in a reclining chair yet? *Discuss...*

Comment:

If you don't have one, you can try propping him up on pillows while your near him so that he can get a different view of the world. Reclining chairs or bouncers provide good support for baby and enable him to have a good view of things around him. You can move the chair around the house with you so that he can watch what is going on. Remember, it should never be placed on a table or work bench. Always use the harness to secure your baby in the reclining chair.

Question:

Does your baby spend any time on a rug or sheet on the floor? *Discuss...*

Comment:

Remember, it is important to continue to lie your baby in different positions during the day. This will help to strengthen his muscles and will also give him different views of the world. While laying on his tummy, he can practice lifting up his head and looking around.

Summarise:

Overhead 2.6

Where should baby play:

- near you
- in a reclining chair
- in a variety of positions each day

ROUTINE ACTIVITIES THAT HELP BABY TO LEARN:

Don't forget that there are many routine activities that you do with your baby everyday which provide important opportunities for him to learn and interact with you.

Summarise:**Overhead 2.7**

- Feeding
- Nappy Changing
- Bathing

Feeding:

Feeding is still one of the most special times of the day that you spend with your baby.

Question:

In what ways does it help your baby to learn?

Parents should cover the following:

- it provides you with an ideal opportunity to develop your relationship with him.
- while being held close to you during his feed, he can feel your heart beat, the warmth of your body and can clearly see your face.
- make the most of these times by using them to communicate with your baby. Talk to him quietly about his day, how he is growing or even use the time to quietly sing him a lullaby. Your baby will learn a great deal from these quiet times together.

Nappy changing time:**Question:**

Have you thought about how many nappies you've all changed so far? *Discuss...*

Comment:

Approximately 448 (if you average 8 a day). That is a lot of nappies! You probably feel that you do little else but change nappies!

Question:

Do any of you use that time to have a chat to your baby? *Discuss...*

Comment:

Now that your baby is more alert and responsive, nappy changing can be quite enjoyable. Remember that it does provide you with a wonderful opportunity to talk to him, to play with him and to simply be with him.

Remember that you will still need to lean over him so that he can clearly see your face. Again, talk to him about what he is doing, how he is growing. Although he can't understand

the words you are saying, he will respond to how you are saying them. Nappy changing times will also give him the opportunity to have kicks without his nappy on.

Bath-time:

At this age baby still may not always be keen to be undressed and dressed.

Question:

Does your baby like baths now? What does he do in the bath? Does he kick and move his arms freely in the water? Does he find the warm water very relaxing? *Discuss...*

Comment:

Remember to talk to him as you bath and dry him. It is through these conversations that your baby will learn about his body parts and his actions. He is also learning many other skills such as taking turns, attending to the same thing.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:**Question:**

Do you have your baby near you while you go about your normal daily activities?
Discuss...

Comment:

When the family are sitting down to dinner, don't forget to include baby. He will enjoy being with you, listening to your conversations, and even participating at times. He'll be very interested in the things he can see and smell and hear in the kitchen while you prepare dinner.

Question:

Have you spent any time outside? *Discuss...*

Comment:

Remember that he will also enjoy going outside for short periods of time. At this age you can begin lying him on a rug or in his reclining chair on the grass. Talk to him about the things he can hear and see outside, such as the birds flying over head, the trees and the colour of the flowers. Talk about things in which you notice he shows interest. For example, if he stares at the dog, talk to him about it and pretend that he is talking back to you.

He will also start to take more notice of things around him as you take him out in his pram. Try to go for a walk at least once a week. It will be good exercise for you and a great adventure for him. Again, don't forget to talk to him about all of the things that you can see and hear as you go.

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage conversation:***(Overhead 2.8)*

Through your conversations with him, he will learn so many things. Can you think of ways that you can help your baby to learn how to have conversations? *Discuss...*

Parents should cover the following points:

- remember that your baby needs to be able to see your face while you talk to him.
- talk to him during your routine activities with him. You don't need to set aside "special" times to talk to him.
- use variety in the tone and inflection of your voice.
- give him the opportunity to take a turn in the conversation. Initially accept any movement or sound as his attempt to have a turn. The more you do this, the more deliberate his turns will become.
- pretend that he is talking to you! When he makes sounds, talk back to him as if he is starting up a conversation with you. By doing this, you are reinforcing the sounds that he makes.
- remember to give him eye contact when you talk to him.
- encourage other people to talk to him. This will help him to become familiar with other people and will also add to his general experiences.

To encourage listening:*(Overhead 2.9)*

How can you encourage your baby's listening skills: *Discuss...*

- introduce him to different sounds in his environment by moving him around the house to where all the activity is.
- sing him songs, lullabies and simple rhymes with actions.
- show him brightly coloured rattles with different noises. Move them in front of him while they rattle.
- place a music box or pull musical toy in front of him and activate. When the sound stops, wait for him to respond before activating it again.
- play different types of music on the radio or record player.

To encourage looking:*(Overhead 2.10)*

- What do you find attracts your baby? *Discuss...*
- bright colours.
- things which have distinctive contrasts in shapes and colours such as black and white, red and blue.
- remember that baby can see objects best 20- 30 cm from his face.
- hang toys from a frame over his reclining chair or cot. Place them close enough for him to accidentally touch them if he moves his hand, This will also encourage him to reach.
- place bright prints or magazine pictures on the wall near his cot, at eye level.
- move bright objects in front of him to encourage him to follow them with his eyes.
- sit him up on your lap or in his reclining chair or hold him upright in your arms to give him a better view of his environment.

To encourage touching:*(Overhead 2.11)*

Although he doesn't have a lot of control over his hands as yet, he is beginning to use his hands more to explore his environment.

How can you encourage this? *Discuss...*

- continue to give your baby massages. This will be enjoyable for both of you.
- dress baby in clothes made from a variety of materials or with different textures. Move his hand across them so that he can feel them.
- wear clothes yourself that have contrasting texture; encourage baby to touch them.
- place objects close enough for baby to touch them accidentally; encourage him to touch them by gently moving his hands across them.

THINGS THAT MAKE LEARNING FUN

(Overhead 2.12)

Play videotape section: "Things that make learning fun". (00.00-00.00)

Remember that your baby's most important play thing is still you!

Question:

Is your baby becoming more aware of toys now? *Discuss....*

Question:

Can you remember what the functions of toys are at this age? *Discuss....*

Comment:

The most important functions of toys at this age are still to encourage listening, looking and touching.

Question:

What sorts of toys are appropriate at this age? *Discuss....*

Parents should include the following:

- noise makers such as rattles, bells; preferably small and brightly coloured.
- teethingers in a variety of shapes, textures and colours.
- wrist rattles
- toy frames to hang over the reclining chair (essential)
- bright and contrasting toys to hang from the toy frame
- a bright mobile to hang over the cot
- bright and contrasting prints or magazine pictures
- a roly poly
- pull music boxes and chimes.

LEARNING TO COMMUNICATE

SESSION FOUR

TEACHING NOTES

(Refer to Session Four Teaching Points)

INTRODUCTIONS:

Encourage parents to introduce themselves. All parents are to wear a name tag. Begin the session by asking parents if they have any questions from the last session. Answer them as best you can. If you have any difficulties tell the parents that you will get back to them with the answer when you have more time.

DEVELOPMENT AT FOUR MONTHS:

Present the following information:

By four months your baby has begun to learn that he can have an effect on the world around him. He is starting to be aware that he can cause things to happen through his actions.

Overhead 4.1:

Baby is learning that he can cause things to happen through his actions.

This is an important milestone in your baby's development.

MOTOR DEVELOPMENT:

(Overhead 4.2)

Your baby's head control is much more developed at this age. Although he still requires some back support, he can now keep his head up and can turn it from side to side to see what is happening around him. He will enjoy being propped up for short periods so that he can look around and use his arms more.

At 4 months, your baby is starting to discover his body. You may notice him looking at one of his outstretched hands for a short time, rotating it as he opens and closes it. He may even start to bring his hands together. Gradually he will develop more control over his hands. One of the most exciting skills your baby will learn at this age is how to reach for things that he

wants. Reaching involves many skills. For baby to be able to reach effectively, his muscles must be strong enough to support and turn his head, he must be able to focus on objects and he needs to have some control over his hands to guide them in the right direction.

At first your baby will tend to lean toward things that he wants and occasionally will accidentally touch objects placed in front of him. You will notice that his movements are becoming more purposeful. Through trial and error your baby learns that if he reaches out, he can often get things that he wants. Gradually, he will learn to guide his hand in the direction of the toy that he wants and close his hand around it.

Grasping is another important skill that your baby learns at this time. Initially he will only be able to hold an object placed in his hands for a very brief time. At this stage he often isn't aware that he is holding the object and will tend to drop it without noticing it fall. He will soon start to take more notice of an object placed in his hands and will move it so that he can see it better.

Once baby can reach out and grasp, he will start to do many more things with his hands. He will tend to mouth everything placed in his hands, he will start to bang and shake rattles and will soon begin holding toys in both hands. At this stage he is unable to transfer objects from one hand to the other.

Summarise:

Overhead 4.2:

Motor Development:

- head control is more developed
- discovering his body
- hands are coming together
- leans in the direction of things he wants
- beginning to reach
- beginning to grasp objects
- unable to transfer from one hand to the other

LOOKING:

(Overhead 4.3)

Bright colourful objects still attract your baby's attention the most. At this age he will take much more notice of objects placed in front of him, and will try to reach for them. You will also notice that when you are reading with him on your lap, he is beginning to take an interest in colourful pictures in your magazines and books.

As he is now able to see objects placed further away from him, you will notice that he is starting to become a little sticky beak, watching everything that is going on around him. He will enjoy watching you do your chores or other children playing near him. Moving objects are particularly fascinating at this age. Watch how he turns his head to follow objects as they move.

Your face is still one of the things that he likes to look at best. Because your eyes in contrast to the rest of your face, his eyes are naturally drawn to yours. Notice how well he now maintains eye contact with you.

Summarise:

Overhead 4.3

Looking:

- is still attracted to bright colours
- watches intently what is happening around him
- follows moving objects with his eyes
- maintains good eye contact with you

LISTENING:

(Overhead 4.4)

Four month old babies are fascinated by sounds, particularly voices. Notice how he stops moving (including sucking) when he hears a sound. He will now search by turning his head to find out where the sound is coming from. At this age he is attracted to sounds with lots of variety. You will notice that he will tend to listen intently and suck faster when he hears a new sound. Music is very interesting to baby's of this age. Watch how your baby reacts to different types of music.

Summarise:

Overhead 4.4

Listening:

- is fascinated by sounds
- stops moving, then sucks faster when he hears a new sound
- beginning to search for sounds by turning his head
- is attracted to sounds with variety
- is attracted to music

UNDERSTANDING OF THE WORLD:*(Overhead 4.5)*

What your baby knows about the world has a major effect on his communication skills. Initially your baby is like an observer, just watching what is happening around him. However, by four months your baby is starting to interact more with his world. He is beginning to learn about relationships between things and is beginning to realise that he can cause things to happen, that he can have an effect on his world.

There are several important skills that your baby will learn in order to develop an understanding of the world in which he lives. These are:

- Object permanence
- cause and effect relationships
- problem solving
- play
- imitation

Object Permanence:*(Overhead 4.5)*

This is a fancy name for knowing that things still exist when we can no longer see, hear or touch them. Most of the things that we talk about to each other are things that are not within our view, such as what we did at work, or what we are going to do tomorrow. We often ask people to get things for us from another room, or out of a cupboard. Without object permanence skills we would only be able to talk about things that we could still see or touch or hear.

To develop object permanence we must build up images or pictures of people, objects and events in our minds. This forms the basis of our memory banks.

Think of a car!

Do you imagine a mini, a commodore or another sort of car? The car that you imagined is probably different to the car that your friend imagined. This is because your different experiences effect the images that you build up in your memory banks.

At four months your baby has very primitive object permanence skills. He will follow moving objects with his head, however, will not continue to search for them once they are out of sight. Similarly, he will search for a sound while it is still happening, however, will stop searching when the sound stops. Because he hasn't yet developed images of objects, actions, or events, he does not search for objects that are either completely or partially hidden.

*Summarise:***Overhead 4.5****Object Permanence:**

- is not aware that objects still exist when he can longer see hear or touch them
- is beginning to search for sounds that he can hear
- follows moving objects to the point of disappearance
- does not search for objects which are fully or partially hidden

Cause and effect relationships:*(Overhead 4.6)*

At this stage your baby is learning about cause and effect relationships. He is learning that by his actions he can have an effect on his world.

You will notice that his actions are initially random. Occasionally he will accidentally hit something with his hand or his leg causing it to make a noise. Gradually his actions will become more deliberate as he begins to understand the connection between his actions and the noise.

Another useful thing he will learn at this age is that when he cries you come and pick him up, or when he makes a noise, you talk to him. Understanding these basic cause and effect relationships is essential to communication. Remember that one of the main reasons that we communicate is to have an effect on other people and our world. You can help your baby to understand cause and effect relationships by providing him with opportunities to experience them.

*Summarise:***Overhead 4.6****Cause and effect:**

- is learning that he can have an effect on his world
- is developing a connection between his actions and effects they have

Problem Solving:
(Overhead 4.7)

As your baby's understanding of the world develops and he begins to understand cause and effect relationships, he also begins to solve problems, such as "how can I get things that I want". He is now not only developing goals (that is, things that he wants), but is also starting to work out how he can achieve them. He is also beginning to be selective in his goals. He will tend to turn away from things that he doesn't want and will reach towards things that he does want. Watch how he now shapes his hand in anticipation of getting the object he wants.

At this stage he does not realise that he can use other people to help him get things that he wants. He has not yet developed a connection between people and objects. Over the next few months you will help your baby to develop this connection by:

- giving him things that he is reaching for;
- talking to him about objects that he is holding or looking at;
- encouraging your baby to look at you and the object.

Problem solving is basic to our communication. It is through communication that we achieve many of our goals. Through communication, we can get other people to help us to get things that we want.

Summarise:

Overhead 4.7

Problem Solving:

- beginning to use his own body (eg reaching) to get what he wants
- doesn't yet connect people and objects (doesn't know that he can use other people to get what he wants)

Imitation:

(Overhead 4.8)

It is through imitation that your baby learns the words that we use to communicate to each other. At four months your baby will tend to simply watch you carry out actions, he will find them fascinating. Soon he will learn to copy simple actions such as banging, shaking a rattle, splashing in the bath. or copying faces that you pull. Later he will progress to copying simple sounds that you make like "bububu".

Summarise:**Overhead 4.8****Imitation:**

- attends to actions that you perform
- will soon begin to copy simple actions such as banging and splashing

Play:**(Overhead 4.9)**

Your baby explores and learns about his world through play. At this age your baby's play with objects is limited to a few actions such as hitting, holding or mouthing. Soon he will start to shake and bang rattles and other noise makers. Gradually his play will become more complex. In this way he is gradually building up information in his memory bank about these objects and what they can do. To your baby, play is not a special time to sit down with toys, play is everything he does whenever he is awake. It is learning about his world through exploring.

Summarise:**Overhead 4.9****Play:**

- explores his world through play
- play is limited to a few actions, mouthing, banging, hitting.
- will soon start to shake noise makers

COMMUNICATION SKILLS:**(Overhead 4.10)**

Although your baby has not yet developed true communication skills, he is beginning to learn all the important rules he will need in order to be an effective communicator.

By this age your baby will maintain eye contact with you while you are having little conversations with him. Because he does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him get objects. Therefore when he wants something or is playing with a toy, he will tend to look only at that toy. Similarly, if he does

not want something or does not want you to do something, he will tend to pull his arms back and turn away without giving you eye contact.

As your baby's cause and effect and problem solving skills develop over the next few months, you will notice that your baby will begin to use eye-contact more in his communicative attempts. You can encourage this by talking to your child about what he is playing with and positioning yourself so that he can achieve eye-contact with you. You can also do this when he is reaching toward something:- talk to him, position yourself so that he can achieve eyecontact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

By this age your baby is learning to take turns in a conversation. He will vocalise to you and will stop when you talk and continue when you stop. He does not really start up conversations yet but will join in if you start one up.

Taking turns is important to any communication. We would not be very good communicators if one person always did all the talking. Over the next few months your baby will become much better at taking turns, he will overlap less with you and will also begin to start up conversations.

Your baby is also learning to take turns in games, which helps his turn-taking in conversations. If you play games like banging on the table, he will tend to wriggle his body or make a sound when you stop. He will stop wriggling when you bang again.

You can help your baby to develop turn-taking skills by playing games like this with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

You will also notice that your baby is beginning to make more sounds. At this stage he will tend to make more open mouth sounds such as "ah" or "eh". He may even use a few consonants such as "m" or "b".

Babies are very variable in the type and amount of sounds that they make at this age. Try not to compare your baby with other babies. Some babies are very talkative while others tend to be quieter. The most important thing is that your baby is experimenting with sounds, not the amount of sounds he is making.

He will enjoy lying in his cot or on the floor and discover all of the different sounds that he can make with his mouth. Listen to the different sounds that he can make!

At this age he will take a great interest in his own mouth and in your mouth especially when your talking. Encourage him by talking to him and letting him play with your mouth.

Summarise:**Overhead 4.10****Communication Development:**

- maintains eye contact when you are talking to him
- doesn't yet indicate to you things that he wants
- doesn't yet show you objects/things of interest
- is taking turns by moving his body and sometimes vocalising
- beginning to make more sounds
- using more variety in the sounds he makes
- shows an interest in his own and your mouths

Play videotape Section: "Development at 4 months- See what I can do" (00.00-00.00).

HELPING YOUR BABY TO LEARN:

Parents are the best people to help babies to learn. There are so many things that you do each day which provide your baby with ideal opportunities to learn about his world. Here are some ideas to help you:

WHERE SHOULD BABY PLAY:

The best place for your baby to learn is near you. He will enjoy watching you as you carry out your normal daily activities. Remember to place him in a variety of positions through out the day. This will help to strengthen different muscle groups and will also give him different views of the world.

Although he is unable to sit unsupported as yet, he will enjoy being propped up for short periods each day. In addition to allowing him to look around more, it will enable him to use his arms more. A reclining chair is very useful at this age.

He will also enjoy sitting on your lap at a table. Place toys in front of him to encourage him to reach. Because he is well supported in this position, he is able to easily move his arms around.

Summarise:**Overhead 4.11****Where can baby play:**

- near you!
- in a variety of positions, on his back, tummy, side, sitting propped up with support
- on the floor on a rug
- in a reclining chair
- on your lap, at a table
- in his pram

ROUTINE ACTIVITIES:

Now that your baby is taking more notice of what is happening around him, routine activities such as nappy changing, feeding and bathing take on a whole new meaning. Here are some more ideas on how you can use these times to help your baby to learn:

Nappy changing.

Nappy changing itself is not the most exciting activity in the world, however, it can be an enjoyable time spent interacting with your baby. Use the time to have a conversation with your baby. Watch how he uses his eyes and body movements to communicate with you. Play games with him, such as pat-a-cake or peek-a-boo. After several goes at the game stop midway and wait for your baby to respond before you continue.

Bath-time:

By four months your baby will start to enjoy his bath more. He won't mind being undressed as much as he did when he was younger. When dressing, undressing and bathing your baby, give him a chance to have a kick and to move his arms and body without the restriction of his clothes. Again use the time to have a conversation with him. Don't forget to allow him to have a turn in the conversation.

Dressing:

Remember to talk to your baby while you are dressing him. He can learn lots of interesting things about his body, his clothes and his world as you change him. Talk about what you are doing, how he is growing and the different parts of his body. Although he can't understand your words as yet, he is responding to the sounds that you are making. With your help, he will gradually begin to connect those sounds with things in his environment. This is how he begins to learn the meanings of words.

Feeding:

At this age your baby is still being fed very frequently. Feeding is a very special time to spend with your baby. During feeds your baby feels secure and content. Again make the most of these times by holding your baby close to you so that he can look into your eyes and, by quietly talking to him.

Your baby may start taking small amounts of solids over the next few months. The reclining chair is very useful for sitting baby in while he has his first solid meals. Remember to sit at baby's eye-level so that he can easily maintain eye-contact with you. He will feel intimidated if you lean over him. He will enjoy having a chat to you while you feed him.

EVERYDAY ACTIVITIES:

Make sure your baby has the opportunity to spend time in a variety of places during the day. Imagine how bored you would be if you were kept in the same room all day! At four months your baby will enjoy being moved around with you (both inside and out), while you carry out your normal daily activities. This is a good way to keep your baby entertained.

The washing:

Take your baby out-side with you while you hang out the clothes. Place a rug near you on the grass (in the shade). Baby can either lie on the rug or in his reclining chair. If he has a brother or sister, they might like to keep him entertained with some toys. Your baby will enjoy listening to all of the different sounds and seeing all of the different sights in the garden. Remember to talk to your baby about the things he can see or hear while he is out-side.

Doing the ironing:

While you are doing the ironing, why not place baby across the room from you so that you can talk to him while your doing it. Of course, you need to make sure he is not too close to the ironing board for safety reasons. He will find your actions entertaining and will enjoy the opportunity to chat to you. Place his toy frame across his reclining chair. so that he can play with it. Talk to him about what he is doing

The gardening:

Gardens are wonderful places for babies. These are so many interesting things to see in the garden! Place baby's rug near you while you do the garden. Talk to him about what you're doing, about the plants, the plane going over head, the birds sitting in the tree. He will enjoy feeling the breeze on his face, the grass under his hands and hearing all of the different noises: mowers, people talking, hammering, dogs barking.

Going for walks:

Walking is not only good exercise, it can be very relaxing for both you and your baby. Your baby will find the motion of the pram very soothing. It is often a good way to get a difficult sleeper to sleep! Baby will also find the walk very interesting. it gives him the opportunity to see new things and to hear new sounds. While walking point out to your baby the different things that you see. Remember that although he can't understand the words that

your saying, he will respond to your voice. Gradually he will come to connect the sounds that you make with the things around him.

Reading Books:

Although your baby is unable to actually read at four months, it is a good time to introduce him to baby books. Reading books with your baby helps to develop many skills such as attending to specific things, looking where someone else points, listening, taking turns, connecting sounds with pictures and pictures with objects.

At this age your baby will be attracted to books with big, bright pictures. Hard covered books are much easier for baby to handle than the cloth books. The best books are the hard cardboard books especially designed for babies. These usually have only one main picture on each page (this helps to focus baby's attention). The hard pages allow baby to turn them more easily. Most of these are also wipeable. Cheap baby board books (under \$3.00) are now available through most department and general book stores.

Good books to look out for:

- Brimax baby books such as-
 - Rogers .M. and Ricketts. M. "A first book- open and look"
 - Brimax Books, England, 1986.
 - Rogers .M. and Ricketts. M. "A first book- open and see"
 - Brimax Books, England, 1986.
- Dick Bruna books
- Lady Bird books such as-
 - "Baby's first book"
 - "Baby's green picture book"
 - "Baby's red picture book"
 - "Let's play outside"

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

Place each overhead on the projector, encourage the parents to tell each other what activities they have/could use to encourage each of these skills.

To encourage listening: (Overhead 4.13)

- talk to your baby about things that you are doing
- place noise makers on his toy frame, and place them close enough to his hands that they make a noise when he moves.

- talk to him about sounds that you hear
- play music to him and dance with him to the beat
- sing songs to him, particularly songs with actions
- shake noise makers in front of him then gradually move them out of sight to encourage him to follow them.
- shake noise makers slightly out of his line of vision and encourage him to turn his head to the direction of the noise.
- when you come into the room call him.
- place noise makers in his hand and encourage him to move his hands
- hang wind chimes in his room

To encourage looking:
(Overhead 4.14)

Now that he is four months, you will find that he is beginning to take much more notice of things around him.

- give him objects to play with which are bright and colourful
- place bright mobiles in his room
- place bright pictures on the wall near his cot.
- hang a variety of different objects from his toy frame
- introduce him to his first book. Choose books which have hard cardboard pages and only one main picture on each page (refer to reading books section above).
- sit baby on you lap while you are reading, he will enjoy looking at the colourful pictures in your magazines
- sit baby in a variety of positions to give him different views of his world
- take him for walks in his pram, so that he can look at different things around him

To encourage communication:***(Overhead 4.15)***

- talk to him about things that you are doing. Remember to give him a chance to have a turn too. Wait for him to move or vocalise before you continue.
- play games such as pat-a-cake with him. Stop half way through the game and wait for him to move or make a sound before you continue. This will help him to take turns.
- make sure that your face is close enough to him that he can make eye-contact with you.
- remember to make eye-contact with him when you are talking to him
- use variety in your speech, use high and low sounds, quiet and loud sounds. This will keep him interested.

To encourage object permanence:***(Overhead 4.16)***

- show baby bright objects and gradually move them out of his sight and then back again, talk to him as you do this.
- place objects in baby's hand and cover his hand and the object with a see-through cloth. Pull it off while baby is watching.
- play peek-a-boo with baby. Cover your face with a cloth, continue talking and then pull it off
- while talking to baby move your head out of his sight and then back again. He will follow your movements.

To encourage an understanding of cause and effect:***(Overhead 4.17)***

- place noise makers close enough to baby, that he will hit them if he accidentally moves his hand or his feet, gradually his actions will become more deliberate.
- place noise makers in his hand so that if he moves his hand he will make the noise.
- when he vocalises go up to him and talk to him,
- encourage him to kick his legs in the bath, so that he can see/hear the splashes

To encourage problem solving:*(Overhead 4.18)*

- place bright and interesting objects in a hanging frame close to him, so that if he moves his hand he can grab them, this will encourage him to reach
- wind up toys to activate them, stop them and wait for him to react (move or vocalise) before you let it continue.

To encourage play:*(Overhead 4.19)*

- give him light weight colourful toys and objects which are easy to handle
- place them in his hands as he is unable to pick them up by himself at this age
- talk to him about the toys that he has and help him to manipulate and mouth them. Don't stop him from putting things in his mouth(unless of course they are unsafe) this is your baby's way of exploring!

To encourage imitation:*(Overhead 4.20)*

- carry out interesting actions in front of him, such as banging on the table, clapping hands then manipulate his hands and repeat the action, make a game of it!
- copy sounds that he makes, then wait for him to make a sound then repeat. Note: it is easier for him to copy sounds he can already make.
- when he smiles, smile back at him

Play videotape section: "Mum and Dad help me to learn" (00.00-00.00)

THINGS THAT MAKE LEARNING FUN:

Now that baby is starting to use his hands more, his need for play materials has changed. Play materials for four month olds should encourage baby to touch and explore, learn about cause and effect relationships, learn how to solve simple problems, learn about object permanence. Look for objects that: *(Overhead 4.21)*

- are easy to handle, that is, are not too heavy or too large for little hands. (Note: some rattles are a little top heavy, try rattles that are dumbbell shaped)
- are safe to put in his mouth (as everything will soon go in his mouth)

- are bright and colourful
- have different shapes and sizes
- make noises when moved
- have different textures

Toys which are appropriate for your baby at this age:

(Overhead 4.22)

- colourful balls- several soft balls which are small and easy to grab (cloth and rubber balls are ideal) Baby will enjoy reaching for them, mouthing and manipulating them.
- chime-ball and roly-poly - these will help to develop cause and effect relationships, remember to place close enough to baby for him to accidentally hit them.
- noise makers- which have a variety of shapes and noises, tie them to the toy frame or place them in baby's hands
- wrist rattles- which again can help to develop cause and effect relationships.
- plastic key rings- these are easy to manipulate and mouth and make great noises
- soft toys- to encourage touching and mouthing.
- teething rings- to encourage touching and mouthing.

Play materials from around the home:

As your baby is now starting to reach for things, you must ensure that anything within reach is safe for baby to touch. Therefore avoid objects which:

- have parts that are small enough to swallow
- have sharp or rough edges
- may have poisonous paint
- have contained and poisonous substances such as dish washing liquid
- have contained medicines
- have small parts which may break off.

The following items from around your home make ideal play materials for four month olds:

- Plastic containers- various sizes and shapes such as small fruit juice bottles, empty film canisters, old plastic herb or spice jars. Fill with pasta or rice, place superglue to the rim of the container and secure the lid. Don't give to baby until the glue has set (Note: only a small amount of glue is required and it should not be visible around the rim of the lid).
- empty cotton reels- these are good to mouth and manipulate
- plastic spoon- select spoons that are colourful and have rounded handles, these are good for baby to mouth, manipulate and bang.
- plastic bangles- in a variety of colours and textures, good to mouth, manipulate and hold on to.

Play videotape section: "Things that make learning fun" (00.00-00.00)

LEARNING TO COMMUNICATE

SESSION FIVE

TEACHING NOTES

INTRODUCTIONS:

Encourage parents to introduce themselves. All parents are to wear a name tag. Begin the session by asking parents if they have any questions from the last session. Answer them as best you can. If you have any difficulties tell the parents that you will get back to them with the answer when you have more time.

As with session 3, the aim of this session is to reinforce what parents learnt last session. Again this session should be interactive with you facilitating the discussion. If the parents do not cover all of the points under a section, you will need to add them. In some instances you may be able to cue them with additional questioning.

DEVELOPMENT:

Present the following information:

In our last session, we focused on development at 4 months. Let us now review what we learnt about your baby's development at this stage remember that one of the most exciting things that your baby is learning is that he can cause things to happen through his actions. He is learning that he has an effect on the world around him.

We will begin by watching the videotape that I showed you last session again. As you watch it look for things that you may have missed last time. Is your baby starting to learn the skills shown on the video? One of the aims of the video is to highlight behaviours that you might otherwise miss in your baby's development.

Play videotape section: "Development at 4 months, see what I can do" (00.00-00.00).

MOTOR DEVELOPMENT:

Let us begin by writing down the motor skills that a 4-5 month old infant has. Discuss.....write on a blank overhead. If parents do not include all of the following add them.

- head control is much more developed
- he still requires some back support,

- he can now keep his head up
- he can turn his head from side to side to see what is happening around him.

Question:

Does your baby enjoy being propped up for short periods so that he can look around and use his arms more? *Discuss...*

Question:

Have you noticed him looking at his outstretched hands for a short periods of time?

Discuss...

Comment:

Remember that reaching involves many skills. For baby to be able to reach effectively, his muscles must be strong enough to support and turn his head, he must be able to focus on objects and he needs to have some control over his hands to guide them in the right direction.

Ask the parent if their babies have started to reach. If they haven't ask the following question:

Have you noticed him leaning toward things that he wants and occasionally accidentally touching things placed in front of him?

Comment:

You will notice that his movements are becoming more purposeful. Through trial and error your baby is learning that if he reaches out, he can often get things that he wants. Gradually, he will learn to guide his hand in the direction of the toy that he wants and close his hand around it.

Question:

Is your baby starting to grasp objects? *Discuss...*

Comment:

Initially your baby will only be able to hold an object placed in his hands for a very brief time. At first he often isn't aware that he is holding the object and will tend to drop it without noticing it fall. He will soon start to take more notice of an object placed in his hands and will move it so that he can see it better. You can encourage this by placing objects in his hands and helping him to hold them. Don't release the toy until he has a firm hold.

Question:

What other things does your baby do with toys that you give him? *Discuss...*

Parents should include:

- he will tend to mouth everything placed in his hands
- he will start to bang and shake rattles

- he will soon begin holding toys in both hands.
- he is unable to transfer objects from one hand to the other.

Summarise:

Overhead 4.2

Motor Skills:

- head control is more developed
- discovering his body
- hands are coming together
- leans in the direction of things he wants
- beginning to reach
- beginning to grasp objects
- unable to transfer from one hand to the other

LOOKING:

Question:

In what ways do you think the looking skills of your baby and the babies on the video have changed over the past few months? *Discuss...*

Again write on a blank overhead.

Parents should include the following:

- he is still attract to bright colourful object
- he is now taking much more notice of objects placed in front of him, and is trying to reach for them.
- he is beginning to take an interest in colourful pictures in your magazines and books.
- he is now able to see objects placed further away from him,

Question:

Is your baby becoming a little sticky beak, watching everything that is going on around him? *Discuss...*

Comment:

Notice that your baby is particularly attracted to moving objects.

Question:

Does your baby follow objects/people with his head? *Discuss...*

Question:

Does he like looking at your eyes while your talking?

Comment:

Because your eyes are in contrast to the rest of your face, his eyes are naturally drawn to yours.

Summarise:**Overhead 4.3****Looking:**

- is still attracted to bright colours
- watches intently what is happening around him
- follows moving objects with his eyes
- maintains good eye contact with you

LISTENING:**Comment:**

Four month old babies are fascinated by sounds, particularly voices.

Question:

What changes have you noticed in your baby's listening skills over the past few months?

Discuss...**Parents should include the following:**

- he doesn't startle as much to new sounds
- he still stops moving (including sucking) when he hears a sound.
- he now searches with his eyes when he hears a sound
- he is starting to turn his head to find out where the sound is coming from
- he is attracted to sounds with lots of variety. You will notice that he will tend to listen intently and suck faster when he hears a new sound. Music is very interesting to baby's of this age. Watch how your baby reacts to different types of music.

Question:

What sounds does your baby like? *Discuss....*

Summarise:**Overhead 4.****Listening:**

- is fascinated by sounds
- stops moving, then sucks faster when he hears a new sound
- beginning to search for sounds by turning his head
- is attracted to sounds with variety
- is attracted to music

UNDERSTANDING OF THE WORLD:**Comment:**

As we learnt last session, your baby's knowledge of the world around him is growing rapidly. You will have noticed that your baby is starting to interact more with his world. He is beginning to learn about relationships between things and is beginning to realise that he can cause things to happen, that he can have an effect on his world.

Question:

Can you remember the skills that your baby will need to learn in order to develop an understanding of the world in which he lives? *Discuss....*

Parents should include the following:

- Object permanence
- cause and effect relationships
- problem solving
- play
- imitation

Object Permanence:

Remember that this is a fancy name for knowing that things still exist when we can no longer see, hear or touch them.

Question:

Can you remember why this is important to communication development? *Discuss...*

Parents should include the following information:

Most of the things that we talk about to each other are things that are not within our view, such as what we did at work, or what we are going to do tomorrow. We often ask people to get things for us from another room, or out of a cupboard. Without object permanence skills we would only be able to talk about things that we could still see or touch or hear.

To develop object permanence we must build up images or pictures of people, objects and events in our minds. This forms the basis of our memory banks. Our different experiences effect the images that we build up in our memory banks.

Question:

What sort of object permanence skills does a 4-5 month old have? *Discuss...*

Parents should cover the following points:

- very primitive
- will follow a moving object with his head,
- will not continue to search for them once they are out of sight.
- will search for a sound while it is still happening, however, will stop searching when the sound stops.
- he does not search for objects that are either completely or partially hidden (because he hasn't yet developed images of objects, actions, or events)

Summarise:**Overhead 4.5****Object Permanence:**

- is not aware that objects still exist when he can no longer see hear or touch them
- is beginning to search for sounds that he can hear
- follows moving objects to the point of disappearance
- does not search for objects which are fully or partially hidden

Cause and effect relationships:

At this stage your baby is learning about cause and effect relationships. He is learning that by his actions he can have an effect on his world.

Question:

Have you noticed your baby accidentally hitting something with his hand and then repeating it when he finds that it makes a noise or does something interesting? *Discuss...*

Comment:

His actions will become more deliberate as he begins to understand the connection between his actions and the noise.

You've probably noticed that he is starting to learn that when he cries you come and pick him up, or when he makes a noise, you talk to him. Understanding these basic cause and effect relationships is essential to communication. Remember that one of the main reasons that we communicate is to have an effect on other people and our world. You can help your baby to understand cause and effect relationships by providing him with opportunities to experience them.

Summarise:**Overhead 4.6****Cause and effect:**

- is learning that he can have an effect on his world
- is developing a connection between his actions and effects they have

Problem solving:**Question:**

Have you noticed your baby starting to solve any little problems, such as how to get something that he wants? *Discuss...*

Question:

Is there a difference in how he reacts to different toys? *Discuss...*

Comment:

He is now not only developing goals (that is, things that he wants), but is also starting to work out how he can achieve them. He is also beginning to be selective in his goals. He will tend to turn away from things that he doesn't want and will reach towards things that he does want. Watch how he now shapes his hand in anticipation of getting the object he wants.

Remember that at this stage he does not realise that he can use other people to help him get things that he wants. He has not yet developed a connection between people and objects. Over the next few months you will help your baby to develop this connection by:

- giving him things that he is reaching for;
- talking to him about objects that he is holding or looking at;
- encouraging him to look at you and the object.

Problem solving is basic to our communication. It is through communication that we achieve many of our goals. Through communication, we can get other people to help us to get things that we want.

Summarise:**Overhead 4.7****Problem Solving:**

- beginning to use his own body, (for example reaching), to get things that he wants
- hasn't yet developed a connection between people and object, doesn't yet know that he can use other people to get things that he wants

Imitation:**Question:**

Can you remember from last session, why imitation is important and what imitation skills a 4-5 month old has? *Discuss....*

Parents should cover the following information.

- through imitation the baby learns the words that we use to communicate to each other.
- at four months baby will tend to simply watch an action being carried out.
- soon he will learn to copy simple actions such as banging, shaking a rattle, splashing in the bath, or copying faces that you pull.
- later he will progress to copying simple sounds that you make like "bububu".

Summarise:**Overhead 4.8****Imitation:**

- attends to actions that you perform
- will soon begin to copy simple actions such as banging and splashing.

Play:**Question:**

How does your baby explore and learn about his world? *Discuss...*

Comment:

It is through play. Remember that play is not a special time to sit down with toys, play is everything he does whenever he is awake. It is learning about his world through exploring.

Question:

What play skills does your baby and the babies on the video have at this age?

Discuss...**Parents should cover the following:**

- play with objects is limited to a few actions such as hitting, holding or mouthing.
- he will soon start to shake and bang rattles and other noise makers.
- gradually his play will become more complex.
- he is gradually building up information in his memory bank about these objects and what they can do.

Summarise:**Overhead 4.9****Play:**

- explores his world through play
- play is limited to a few actions, mouthing, holding, hitting
- will soon start to shake noise makers

COMMUNICATION SKILLS:

Although your baby has not yet developed true communication skills, he is beginning to learn all the important rules he will need in order to be an effective communicator.

Question:

What communication skills does a baby have at this stage? *Discuss...*

Parents should cover the following points:

- baby will maintain eye contact while you are having little conversations with him.
- because he does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him get objects.
- when he wants something or is playing with a toy, he will tend to look only at that toy.
- if he does not want something or does not want you to do something, he will tend to pull his arms back and turn away without giving you eye contact.
- over the next few months, he will begin to use eye-contact more in his communicative attempts. You can encourage this by talking to your child about what he is playing with and positioning yourself so that he can achieve eye-contact with you. You can also do this when he is reaching toward something:- talk to him, position yourself so that he can achieve eye contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.
- he is learning to take turns in a conversation. He will vocalise to you and will stop when you talk and continue when you stop. He does not really start up conversations yet but will join in if you start one up.

Question:

Has your baby started to have little conversations with you? *Discuss...*

Question:

How does your baby take his turn? *Discuss...*

Parents should indicate that he is using vocalisations more, but still uses general body movements as his turns.

Question:

How can we encourage the development of turn-taking skills at this age? *Discuss...*

Comment:

You can help your baby to develop turn-taking skills by playing games like peek-a-boo, pat-a-cake etc. with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

You will also notice that your baby is beginning to make more sounds. At this stage he will tend to make more open mouth sounds such as "ah" or "eh". He may even use a few consonants such as "m" or "b".

Babies are very variable in the type and amount of sounds that they make at this age. Try not to compare your baby with other babies. Some babies are very talkative while others tend

to be quieter. The most important thing is that your baby is experimenting with sounds, not the amount of sounds he is making.

Question:

What sorts of sounds does your baby make? *Discuss...*

Question:

Does your baby enjoy lying in his cot or on the floor, experimenting with the different sounds he can make?

Comment:

At this age he will take a great interest in his own mouth and in your mouth especially when your talking. Encourage him by talking to him and letting him play with your mouth.

Summarise:

Overhead 4.10

Communication:

- maintains eye contact when you are talking to him
- doesn't yet indicate to you things that he wants
- doesn't yet show you objects or things of interest
- is taking turns by moving his body and sometimes vocalising
- beginning to make more sounds and use more variety in the sounds that he makes
- shows interest in his own mouth and your mouth

HELPING YOUR BABY TO LEARN:

As you now know, you are the best people to help your babies to learn. There are so many things that you do each day which provide your baby with ideal opportunities to learn about his world.

Play videotape section: "Mum and Dad help me to learn" (00.00-00.00)

WHERE SHOULD BABY PLAY:**Question:**

Where do you think your baby should be? *Discuss...*

Parents should include the following:

- near you while you carry out your daily activities,
- he will not only enjoy watching you, he is learning many things about his world through being near you

Question:

Why is it important to place your baby in a variety of positions each day? *Discuss...*

Comment:

Although he is unable to sit unsupported as yet, he will enjoy being propped up for short periods each day. In addition to allowing him to look around more, it will enable him to use his arms more. A reclining chair is very useful at this age.

Question:

Have you tried sitting your baby on your lap at a table?

Comment:

Place toys in front of him to encourage him to reach. Because he is well supported in this position, he is able to easily move his arms around.

Summarise:**Overhead 4.11****Where can baby play:**

- near you!
- in a variety of positions, on his back, tummy, side, sitting propped up with support
- on the floor on a rug
- in a reclining chair
- on your lap, at a table
- in his pram

ROUTINE ACTIVITIES:

Now that your baby is taking more notice of what is happening around him, do you find yourself enjoying routine activities such as nappy changing, feeding and bathing more?

Nappy changing.**Question:**

Have you worked out how many nappies you've changed so far? *Discuss...*

Comment:

A lot!

Question:

What do you do while you are changing your baby's nappy? *Discuss...*

Include:

- interact with baby.
- have a conversation with baby.
- watch how he uses his eyes and body movements to communicate
- play games with him, such as pat-a-cake or peek-a-boo. After several goes at the game stop midway and wait for baby to respond before continuing

Bath-time:**Question:**

Is your baby enjoying his bath more? *Discuss...*

Question:

What does he do in the bath? *Discuss...*

Comment:

When dressing, undressing and bathing your baby, give him a chance to have a kick and to move his arms and body without the restriction of his clothes. Again use the time to have a conversation with him. Don't forget to allow him to have a turn in the conversation.

Dressing:**Question:**

Does your baby like you to talk to him as you're dressing him? What do you talk about?
Discuss...

Comment:

He can learn lots of interesting things about his body, his clothes and his world as you change him. Talk about what you are doing, how he is growing and the different parts of his body. Although he can't understand your words as yet, he is responding to the sounds that you are making. With your help, he will gradually begin to connect those sounds with things in his environment. This is how he begins to learn the meanings of words.

Feeding:**Question:**

How does feeding your baby help him to learn? *Discuss...*

Parents should cover the following points:

- it is a very special time to spend with baby.
- he feels secure and content.
- he is close enough to look into your eyes
- he can feel your body
- he can hear your voice as you talk quietly to him

Question:

Has he started having solids as yet? *Discuss...*

Question:

Where does he sit, while you give him solids? *Discuss...*

Comment:

A reclining chair is very useful for sitting baby in while he has his first solid meals. (*Show the parents the reclining chair*).

Remember to sit at baby's eye-level so that he can easily maintain eye-contact with you. He will feel intimidated if you lean over him. He will enjoy having a chat to you while you feed him.

EVERYDAY ACTIVITIES:**Question:**

Does your baby like to be in different places throughout the day? *Discuss...*

Question:

Where do you take him? *Discuss...*

Doing the washing:**Question:**

Have you tried taking your baby out-side with you while you do the washing? *Discuss...*

If so...

How did it go?

If not...

Try placing a rug near you on the grass (in the shade). Baby can either lie on the rug or in his reclining chair. If he has a brother or sister, they might like to keep him entertained with some toys. Your baby will enjoy listening to all of the different sounds and seeing all of the different sights in the garden. Remember to talk to your baby about the things he can see or hear while he is out-side.

Doing the ironing:**Question:**

Do you have your baby near you while you are doing the ironing? Does he seem to enjoy your company? *Discuss...*

Question:

Do you talk to him while you are ironing? What about?

The gardening:

Gardens are wonderful places for babies. These are so many interesting things to see in the garden! 5 months is a good age to have your baby near you while gardening because he isn't mobile enough to go far. You can place him on the rug next to you and he'll stay there.

Question:

Who has tried this? *Discuss...*

Question:

Did you talk to him about what you were doing, about the plants, the plane going over head, the birds sitting in the tree? He would have enjoyed the feeling of the breeze on his face, the grass under his hands and hearing all of the different noises: mowers, people talking, hammering, dogs barking.

Going for walks:**Question:**

Do you go for regular walks with your baby? *Discuss...*

Question:

Where do you go? *Discuss...*

Comment:

Babies love going for walks! They enjoy the opportunity to see new things and to hear new sounds. While walking you can point out the different things that you see. Remember that although he can't understand the words that your saying, he will respond to your voice. Gradually he will come to connect the sounds that you make with the things around him.

Reading Books:**Question:**

Have you begun to read books to him yet? *Discuss...*

Comment:

Reading books with your baby helps to develop many skills such as attending to specific things, looking where someone else points, listening, taking turns, connecting sounds with pictures and pictures with objects.

At this age your baby will be attracted to books with big, bright pictures. Hard covered books are much easier for baby to handle than the cloth books. The best books are the hard cardboard books especially designed for babies. These usually have only one main picture on each page (this helps to focus baby's attention). The hard pages allow baby to turn them more easily.

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

Place a blank overhead on the projector, encourage the parents to tell each other what activities they have used over the past month to encourage each of these skills and how useful they have been. Have one of the parents write them down on the overhead. Add any of the following if they haven't been covered in the parents response.

To encourage listening:

(Use Overhead 4.13 to summarise if you need to.)

What sorts of things have you been doing to help to develop you baby's listening skills?

- talk to your baby about things that you are doing
- place noise makers on his toy frame, and place them close enough to his hands that they make a noise when he moves.
- talk to him about sounds that you hear
- play music to him and dance with him to the beat
- sing songs to him, particularly songs with actions

- shake noise makers in front of him then gradually move them out of sight to encourage him to follow them.
- shake noise makers slightly out of his line of vision and encourage him to turn his head to the direction of the noise.
- when you come into the room call him.
- place noise makers in his hand and encourage him to move his hands
- hang wind chimes in his room

To encourage looking:

(Use Overhead 4.14 to summarise if you need to).

What can you do to encourage looking at this age?

- give him objects to play with which are bright and colourful
- place bright mobiles in his room
- place bright pictures on the wall near his cot.
- hang a variety of different objects from his toy frame
- introduce him to his first book. Choose books which have hard cardboard pages and only one main picture on each page. (refer to reading books section above)
- sit baby on you lap while you are reading, he will enjoy looking at the colourful pictures in your magazines
- sit baby in a variety of positions to give him different views of his world
- take him for walks in his pram, so that he can look at different things around him

To encourage communication:

(Use Overhead 4.15 to summarise)

- talk to him about things that you are doing. Remember to give him a chance to have a turn too. Wait for him to move or vocalise before you continue.
- play games such as pat-a-cake with him. Stop half way through the game and wait for him to move or make a sound before you continue. This will help him to take turns.
- make sure that your face is close enough to him that he can make eye-contact with you.

- remember to make eye-contact with him when you are talking to him
- use variety in your speech, use high and low sounds, quiet and loud sounds. This will keep him interested.

To encourage object permanence:

(Use Overhead 4.16 to summarise)

- show baby bright objects and gradually move them out of his sight and then back again, talk to him as you do this.
- place objects in baby's hand and cover his hand and the object with a see-through cloth. Pull it off while baby is watching.
- play peek-a-boo with baby. Cover your face with a cloth, continue talking and then pull it off
- while talking to baby move your head out of his sight and then back again. He will follow your movements.

To encourage an understanding of cause and effect:

(Use Overhead 4.17 to summarise)

- place noise makers close enough to baby, that he will hit them if he accidentally moves his hand or his feet, gradually his actions will become more deliberate.
- place noise makers in his hand so that if he moves his hand he will make the noise.
- when he vocalises go up to him and talk to him.
- encourage him to kick his legs in the bath, so that he can see/hear the splashes

To encourage problem solving:

(Use Overhead 4.18 to summarise)

- place bright and interesting objects in a hanging frame close to him, so that if he moves his hand he can grab them, this will encourage him to reach
- wind up toys to activate them, stop them and wait for him to react (move or vocalise) before you let it continue.

To encourage play:

(Overhead 4.19)

- give him light weight colourful toys and objects which are easy to handle
- place them in his hands as he is unable to pick them up by himself at this age

- talk to him about the toys that he has and help him to manipulate and mouth them. Don't stop him from putting things in his mouth(unless of course they are unsafe) this is your baby's way of exploring!.

To encourage imitation:

(Overhead 4.20)

- carry out interesting actions in front of him, such as banging on the table, clapping hands then manipulate his hands and repeat the action, make a game of it!
- copy sounds that he makes, then wait for him to make a sound then repeat. Note: it is easier for him to copy sounds he can already make.
- when he smiles, smile back at him

THINGS THAT MAKE LEARNING FUN:

Remember that play materials for this age group should encourage baby to touch and explore, learn about cause and effect relationships, learn how to solve simple problems, learn about object permanence.

Question:

What are the characteristics that toys should have for this age group? ***Discuss...***

Parents should include the following:

- easy to handle,
- safe to put in his mouth (as everything will soon go in his mouth)
- bright and colourful
- different shapes and sizes
- make noises when moved
- different textures

OVERHEAD 4.21***Question:***

What sorts of toys does your baby have? ***Discuss...***

OVERHEAD 4.22

- colourful balls - several soft balls which are small and easy to grab (cloth and rubber balls are ideal) Baby will enjoy reaching for them, mouthing and manipulating them.
- chime-ball and roly-poly - these will help to develop cause and effect relationships, remember to place close enough to baby for him to accidentally hit them.
- noise makers - which have a variety of shapes and noises, tie them to the toy frame or place them in baby's hands
- wrist rattles- which again can help to develop cause and effect relationships.
- plastic key rings- these are easy to manipulate and mouth and make great noises
- soft toys - to encourage touching and mouthing.
- teething rings - to encourage touching and mouthing.

Play materials from around the home:***Question:***

Have you made any play things from materials that you have found around the home?

Comment:

The following items from around your home make ideal play materials for four months olds:

- Plastic containers-
various sizes and shapes such as small fruit juice bottles, empty film canisters, old plastic herb or spice jars. Fill with pasta or rice, place superglue to the rim of the container and secure the lid. Don't give to baby until the glue has set (Note: only a small amount of glue is required and it should not be visible around the rim of the lid).
- empty cotton reels-
these are good to mouth and manipulate
- plastic spoon-
select spoons that are colourful and have rounded handles, these are good for baby to mouth, manipulate and bang.
- plastic bangles-
in a variety of colours and textures, good to mouth, manipulate and hold on to.

Play videotape section: "Things that make learning fun". (00.00-00.00) Discuss...

Show the parents the toys in the bag. Encourage them to play with their babies using the toys. Demonstrate.....

Ask the parents if they have any questions from today's session. Discuss....

Handout and collect evaluation forms.

LEARNING TO COMMUNICATE

SESSION SIX

TEACHING NOTES

(refer to Session Six teaching points)

INTRODUCTIONS:

Encourage the parents to introduce themselves and their babies again. All parents should be given name tags to encourage interaction.

Begin the session by asking the parents if they have any questions from any of the previous sessions. Again answer them as best you can. If you have any difficulties tell the parents that you will get back to them with the answer when you have more time.

DEVELOPMENT AT 6 MONTHS:

Present the following information:

Over the past six months your baby has learnt many things. Through looking, listening, touching and tasting, he has begun to understand more about his world. You will have noticed that as his skills have developed, the way in which he interacts with his environment has also changed. Let us look at what baby can do now.

MOTOR DEVELOPMENT:

(Overhead 6.1)

By 6 months, your baby is learning many things about his body. He has found his hands and his feet, and spends many hours looking at them, feeling them and putting them into his mouth. With your help, he will soon discover other parts of his body.

Gradually your baby is gaining more control over his body. He will soon be able to sit by himself, although only for few seconds at first. You can help him by sitting him squarely on the floor with his legs spread apart and supporting him until he balances. He will also use his hands to prop himself up for a short time. While he is learning to balance, you will need to provide him with some support (using pillows behind and to the side of him to prop him up) so that he can be free to use his hands. He can also sit supported in a high chair, which will allow him to use his hands more.

Sitting helps your baby to become a little more independent. He is now free to do more with his hands and can play quite differently. He is able to reach more consistently and easily toward things that he wants.

Your baby is now able to do much more with his hands, he is no longer limited to just holding or grasping toys. He is learning that he can do many things with his hands such as banging, crumpling, passing toys from one hand to the other, holding toys in both hands (at the same time) and turning toys over to examine other sides. He still tends to take everything to his mouth, so that he can explore them more. Although he still has difficulty releasing toys that he is holding, he will learn how to do this over the next few months with your help. He is also now able to consistently reach for things that he wants including your face!

Over the next few months your baby will develop even better control over his body. Soon he will be trying to go places. He will try to roll over, at first from his back to his tummy and will soon begin trying to crawl.

Summarise:

Overhead 6.1

Motor Development:

- has better control over his body
- is beginning to sit-supported
- is using his hands much more
- is beginning to transfer from one hand to the other
- is consistently reaching

LOOKING:

(Overhead 6.2)

Sitting upright gives your baby a whole new view of the world. He can now clearly see quite long distances away such as across the room, or to trees when out in the garden. His increasing visual skills allow him to explore his surroundings more. You may have noticed that he is becoming much more inquisitive. At this stage he likes to explore everything, turning toys over to examine the other sides, looking at himself in the mirror, examining your face, poking his fingers in your nose eyes and mouth.

One of his favourite things is just looking at you. You will notice that he now maintains much better eye contact with you, especially when your both having little conversations. Remember that eye contact is one of the most important parts of communication.

He is still very attracted to bright colours and contrasts in shape. He will often stare for quite long periods at things that he wants which are out of his reach. He is also beginning to attend more to objects and books placed in front of him, and will enjoy touching his book as you read it to him.

Summarise:**Overhead 6.2****Looking:**

- can see clearly across a room
- is attracted to your face
- will stare for long periods at objects out of reach
- is attracted to bright colours and contrasts
- is able to maintain good eye contact

LISTENING:**(Overhead 6.3)**

Your baby is very interested in sounds by this age, especially your voice. He prefers sounds which have lots of variety. You will notice that he attends to you more when you use lots of variation in your voice. He doesn't like it when you use a flat voice. Similarly, he likes to hear and play with noise makers (such as rattles) that make a variety of sounds. He is also beginning to be able to work out the direction from which sounds are coming. You can help him to learn how to do this by shaking noise makers (such as rattles) within his sight and gradually moving them out of his sight to encourage him to follow the sound. Call him from out of his line of vision and gradually come into his view while still talking.

Summarise:**Overhead 6.3****Listening:**

- prefers sounds with variety
- beginning to work out the direction from which sounds are coming
- is attracted to the human voice

UNDERSTANDING OF THE WORLD:

As we have said before, what your baby knows about the world will significantly affect his communication skills. Over the past few months, you will have noticed that there has been a

major change in your baby's understanding and his awareness of the relationship between things in his environment.

Object Permanence:

(Overhead 6.4)

Remember, this is a fancy name for knowing that things still exist when they are out of our sight. By 6 months, your baby is beginning to develop his object permanence skills. You may have noticed that recently your baby has started to cry when you leave the room or when an unfamiliar face comes into view. This is not because he is being naughty, but because he has begun to develop these little images in his mind - of you, familiar people and objects. This is a very important step for your baby to make.

He will also soon begin to search for objects which have fallen out of his view and will try to uncover partially hidden toys. You can help him to develop this skill by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also play hide and seek in the bath, show him how the toy can go under the water and later under the bubbles.

Summarise:

Overhead 6.4

Object Permanence:

- starts to cry when you leave his sight
- developing little "images" of familiar people/
- objects in his mind
- starting to search for objects that fall out of sight or that are partially hidden

Cause-effect relationships:

(Overhead 6.5)

At this stage your baby is learning about cause-effect relationships. He is learning more and more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, such as giving him toys that he can easily activate and by responding to his actions.

*Summarise:***Overhead 6.5****Cause and effect relationships:**

- starting to learn that he can make things happen through his actions
- starting to learn to activate simple toys such as a roly-poly

Problem solving:*(Overhead 6.6)*

Your baby's ability to solve problems is gradually increasing. He is learning that he can use his own body to get things that he wants. He is also starting to decide that there are things that he does not want and will turn away from them. He now realises that he can get things within reach by reaching out his hand, and is starting to shape his hand in anticipation of getting the object.

At this stage he still hasn't developed a connection between people and objects and so does not yet realise that he can use other people to help him get what he wants. Over the next few months this connection will begin to develop as you continue to:

- give him things that he is reaching for;
- talk to him about objects that he is holding or looking at;
- encourage him to look at you and the object.

He will soon begin to solve other problems, such as dropping one toy so that he can pick up another one; or pushing one object out of the way to get another one, or pulling a cloth to get what is on top of it; or pulling a string to get a toy tied to it.

*Summarise:***Overhead 6.6****Problem Solving:**

- gradually increasing
- learning to use his own body to get things that he wants
- turning away from things that he doesn't want
- hasn't yet developed a connection between people and objects
- doesn't realise that he can use other people to get what he wants
- doesn't realise that he can use objects/toys to get other people's attention
- starting to use tools such as strings/cloths to get what he wants

Imitation:*(Overhead 6.7)*

As we've said before, it is through imitation that your baby learns the words that we use to communicate to each other. You may have noticed that your baby is starting to become a little mimic, copying simple actions such as banging or splashing in the bath; or copying faces that you pull. He will soon progress to copying simple sounds that you make such as "bubub".

*Summarise:***Overhead 6.7****Imitation:**

- starting to copy simple actions such as banging
- will soon copy simple sounds

Play:**(Overhead 6.7)**

It is through play that your baby learns about his world. Initially your baby only used a few actions when playing with objects such as holding them or mouthing them. Now he is much more active in his play. Although he still uses his mouth to explore objects, he now also carries out other actions on them such as banging, hitting, shaking, waving and crumpling. In this way he gradually builds up information about what these objects are and can do. Remember that to your baby, play is not a special time to sit down with toys, play is everything he does whenever he is awake, it is learning about his world through exploring.

Summarise:**Overhead 6.8****Play:**

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys.

COMMUNICATION SKILLS:**(Overhead 6.9)**

At this stage your baby still has not yet developed true communication skills, he is continuing to learn the important rules he will need in order to be an effective communicator.

Over the past two months, you may have noticed that he is using much more eye contact with you while you are having little conversations with him. Because he still does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him to get objects. Therefore when he wants something or is playing with a toy, he will only look at that toy. Similarly, if he does not want something or does not want you to do something, he will still tend to bring his arms back and turn away without giving you eye contact.

As your baby's cause effect and problem solving skills develop over the next few months, you will notice that your baby will begin to use eye-contact more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward something: talk to him, position yourself so that he can achieve eyecontact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Your baby is continuing to develop his turn-taking skills. He is using more consistent turns in conversations. Notice how he vocalises to you and stops when you talk and continues when you stop. Over the next few months he will get even better at taking-turns and will overlap less with your turns. He might even start to initiate conversations with you.

Your baby will enjoy playing turn-taking games such as peek-a-boo or pat-a-cake . These games will help him to develop his turn-taking in conversations. Notice how when you bang on the table, he bangs on the table when you stop; and stops when you start to bang again. You can help your baby to develop turn-taking skills by playing games like this with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

You will also notice that your baby is beginning to make more sounds. At this stage he is beginning to use more consonants such as "m" and "b". He might also be starting to string sounds together, such as "bubub"; "ah-oo". Don't forget that babies are very variable in the type and amount of sounds that they make at this age. The important thing is that your baby is experimenting with sounds. He likes to lie in his cot or on the floor, or sit in his high chair and discover all of the different sounds that he can make with his mouth. At this age he will take a great interest in his own mouth and in your mouth especially when your talking. He will try to touch your lips and put his little fingers into your mouth. You can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quite times to experiment with sounds.

Summarise:

Overhead 6.9

Communication:

- eye contact is continuing to improve
- not yet using toys to get your attention
- not yet aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

Play videotape section " Development at Six Months. See what I can do" (00.00-00.00)

HELPING YOUR BABY TO LEARN:

Everything that you have done with your baby over the past 6 months has been helping him to learn. Look at the many skills he has developed up until now. Without you he would not have learnt these skills. Because he isn't yet very mobile, he relies on you to help him to interact with his world. In some ways you are like his interpreter with the rest of the world.

Remember that you don't need to set aside special times each day to teach your baby new things. He learns best by being with you and having the opportunity to experience new things.

WHERE SHOULD BABY PLAY:

(Overhead 6.10)

The best place for baby to play is still near you! Although he likes being in his own room for a small part of the day, he would rather be with you.

He still needs the opportunity to be in a variety of positions each day, so that he learns to use his different muscles. These positions also give him different views of his world.

On the floor:

Now that your baby is learning to sit, he should have the opportunity to practice this skill every day. Sit him squarely on the floor with his legs spread to the side, supporting his weight until he is balanced then let him go. At first he will only sit for a few seconds, however, soon he will be able to sit for longer periods by himself.

Although he will initially require support (pillows behind his back and to the sides to help him balance), it is important that your baby also have the opportunity to play while sitting on the floor. This position enables him to manipulate his toys with his hands and to bend forward and reach to toys in front of him. This will help him to develop more control over these parts of his body.

It is also important that he spend some time each day on the floor on both his back and his tummy, especially his tummy in preparation for crawling. You may find that he isn't very keen on being placed on his tummy, however, he won't get used to it if he is never placed in this position. Obviously you need to do this when he is awake and when you are around to watch him. Placing toys to the front and side of him will encourage him to reach and roll toward the toys. Placing toys slightly out of reach will encourage crawling. Time spent on his tummy will help to strengthen his neck muscles.

On your lap:

Your baby will enjoy sitting on your lap at a table. As he doesn't have to concentrate on balancing, he is free to use his hands to explore things in front of him. He might also like to sit on your lap facing you so that he can have a good chat to you or play little games like "round and round the garden".

In a high chair:

Now that your baby can sit supported in a high chair, he can more easily watch you while you are doing your daily chores. It's sometimes a bit hard to see what mum and dad are doing when your close to the ground and they are so far above you. He'll enjoy sitting in his highchair at meal times, watching the family eat and participating in conversations with you.

In his cot:

Each day your baby should spend some quite time in his cot, playing with his toys, exploring his body and practicing his sounds. This is generally a relaxing time for baby and a good time for Mum and Dad to have a rest and to spend time with each other.

Summarise:**Overhead 6.10****Where should baby play:**

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair
- In his cot

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

(Overhead 6.11)

As you are now aware there are many routine activities that you carryout with your baby every day which are ideal opportunities for you to play with your baby and help him to learn.

Overhead 6.11**Routine Activities:**

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

By now you will have become very skilled in the art of nappy changing. Are you having fun while you change his nappy or is it a bit of a chore? Remember that with a little imagination, nappy changing time can become a lovely opportunity to communicate with your baby. You can talk to him about his body and the new actions he is starting to perform. As he gains more control over his body, you will notice him wriggling more trying to investigate the things around him, including his own body. See how limber he is- can you suck your toes! He thinks he is very clever to be able to do this. Watch how he inspects the different parts of his body. there are so many wonderful things for him to learn about his own body.

You can also use it as a time to play little games like "round and round the garden". But don't forget to keep the nappy handy!

Bath-time:

By now your baby probably loves bath time. He can now kick and splash, probably all over Mum and Dad. Remember that he is learning that he can make things happen through his actions! Don't forget to take the time to talk to him while he is having his bath. You can talk to your baby about his body parts as you wash him, for example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

There are lots of things your baby can learn while having his bath. He can learn about cause-effect relationships by watching the water splash as he hits it with his hands or kicks it.

Now that he can sit up more you can begin to introduce toys into his bath. He can watch them float; tip water out of them, sink them and push them along the water. Some times you might like to hop in the big bath with him. Bubble baths are also lots of fun. He'll enjoy hiding toys in the bubbles or watching you blow bubbles.

Dressing:

When you're dressing your baby, don't forget to talk to him about what your doing; "daddy putting singlet on " "one arm in, other arm in, pull it down, there you go". By doing this he will gradually learn the names of his clothes and the actions that go with dressing. You can also have a little conversation with him. For example: "you want dress or jumpsuit today". Pretend that your baby's vocalisations are his answer eg.: "you want dress, ok". Now that he is moving more, you'll find that he's a bit of a "wriggle pot", squirming all around the place while you're trying to dress him.

Meal-times:

Meal times are now becoming a lot of fun. Again, they provide you with an ideal time to interact with your baby. Over the last month or so, he may have started to eat small amounts of solids. Now that he is sitting and can use his hands more, he can also begin to learn to feed himself. Give him his own spoon to play with while you feed him with another. This will help to develop his independence. Remember to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner". Talk to him about what you are doing "nice

bickie, eat it up, all gone", " more juice". When he has finished his dinner let him play with the spoon and empty bowl. He will enjoy hearing the sounds he can make.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

(Overhead 6.12)

Remember everyday activities provide your baby with an opportunity to learn. Don't keep your baby in one room, take him around the house or outside with you while you do your chores. Here are a few examples of how you can do it.

The washing and gardening:

When you are hanging out the clothes or doing the gardening, don't leave your baby inside. This is a great chance for your baby to go outside and explore! Place a rug or a blanket near you on the grass, out of the sun. Sit or lie your baby on it with a few toys. There are so many things happening outside. He can look around at the garden, listen to all the different sounds around him: birds, the neighbours talking, the man next door hammering, an aeroplane going over head. He can look at all the different things in the back yard, the flowers, clothes, grass and the sky. He can smell the neighbours freshly cut grass and the cake the lady next door has just baked.

While you're working, you can talk to him about what you are doing and all of the things that he can see, hear and smell:

"look, here's your jumpsuit, nice and clean", "what's that, its an aeroplane", "can you hear the birdie".

Wait for your baby to say something and then continue on as though you were having a conversation about the things that you see.

Cooking and doing the dishes:

While you are cooking or doing the dishes, you can sit your baby in his high chair so that he can watch you. Again give him a few things to play with, so he won't get bored, but still show him and talk to him about what you're doing. For example: "daddy's got nice orange carrot, peel carrot" "yum, baby like carrot". The kitchen is a very exciting place for baby. Obviously some things in the kitchen are dangerous so now that baby is reaching you'll have to keep them out of his reach. The baby can hear, see and touch lots of interesting things in the kitchen, such as the sound of the dishes being washed, the sounds of pots and pans hitting each other, the smell of cooking, watching you peel and cut the vegetables, looking at all the different types of food and listening and watching mum and dad talking. To you the kitchen may be boring but to your baby it's Aladdin's treasure trove.

Going for a walk:

Remember to try to go out for a short walk each day. Your baby will enjoy being pushed along in his pram. Walking is relaxing for both you and your baby. As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice

your baby looking at something, tell him what it is," that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Visiting Friends:

Don't forget that you need to have stimulation as well. Visiting friends is important for you and can provide your baby with yet another opportunity to learn. You will have noticed that lately your baby is less friendly toward unfamiliar people. As we have learnt, this is because he has started to develop little images in his mind of people who are familiar to him. If you limit the access he has to other people to a very small circle, your baby will find it difficult to interact with other people.

Playing games with music:

He will enjoy playing games that involve music. Try playing music on a radio or cassette player, then turning the music off and waiting for him to do something before you turn it back on. In this way he will gradually begin to associate action and the music coming back on. You can also help him to develop problem solving skills by gradually expecting more from him. Through waiting for him to give you eye contact before turning the radio back on, you are helping him to understand the connection between you and the music. In this way he is gradually learning to use you as a tool to turn on the music.

Watching Television:

Your baby may be starting to take an interest in your television. Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly.

You will find that your baby will become distressed if left in front of a television set for too long. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby.

Reading books:

Although your baby is unable to actually read, he is becoming increasingly interested in books. These are many benefits of reading with your baby at this age, can you remember what they are?

Book reading:

- provides you and your baby with a quiet time to share with each other,
- encourages your baby to attend to the same thing that you are;
- provides your baby with an opportunity to connect pictures and words;

- introduces your baby to another way that we use language;
- provides baby with an opportunity to learn how to take turns
- sets up an important pattern for later in your child's development:- it helps him to grow up into a reader.

At this age your baby will be attracted to books with big, bright pictures. Don't just give your baby cloth books as he will find them hard to manipulate and will have difficulty turning the pages. Try to pick books that have only one main picture on each page (which helps to focus baby's attention) and the hard pages allow baby to turn them more easily.

Sit your baby on your lap with the book in front of both of you. Tell your baby about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

You will find that your baby will not always listen intently, she'll be pulling at the book, chewing the pages, but don't give up, she is enjoying it.

Playing games and singing songs:

Games and songs are special activities which teach your baby so many things. They teach your baby: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

For those songs with actions you can help your baby to carry out the actions by moving his hands. After a few goes at doing this, stop half way and wait for your baby to do something before you continue. Remember to be close enough to your baby so that you can make eyecontact.

The up and down song:

Up and down, up and down,
Little baby's going round.

Up and down, up and down,
Little baby's dancing round.

Pat-a-cake:

Pat-a cake, pat-a-cake,
baker's man
bake me a cake
as fast as you can

Pat it with flour
and bake it with ghee
and put it in the oven
for baby and me.

The Dancing song:

Dancing, dancing, one, two, three,
come along and dance with me

Dancing, dancing, one two three,
wont you come and sing with me.

The Bus song:

The wheels on the bus go round and round,
round and round, round and round,
the wheels on the bus go round and round,
all the way to school.

The children on the bus go up and down,
up and down, up and down,
the children on the bus go up and down,
all the way to school.

Try singing some of these songs (with actions) with the parents. Ask if they know any other songs which would be good.

Summarise:

Overhead 6.12:

Everyday activities:

- the washing and gardening
- cooking and doing the dishes
- going for a walk
- visiting friends
- playing games with music
- watching TV
- reading books
- playing games and singing songs

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

Place each overhead on the projector. Once you have gone through each set of activities, ask the parents if they normally do them with their infant. Add any other activities that the parents can think of to the list.

To encourage listening:

(Overhead 6.13)

- continue to talk to him about things that you are doing
- give him noise makers such as rattles to play with
- take him for walks so that he can hear all the different sounds in the neighbourhood
- read books to him
- have him around you when you are talking to friends
- sing songs to him, especially action songs, help him to do the actions
- call him when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- don't make everyone whisper around the house, he has to get used to noises.
- continue to use lots of inflection in your voice.

To encourage looking:

(Overhead 6.14)

- continue to give him bright colourful objects to play with
- show him colourful pictures in magazines and books
- sit baby on your lap while you are reading, encourage him to look at the pictures
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood
- sit him on your lap while you watch TV., he'll enjoy all the colours and movement

- play with him with colourful toys, move them around for him to follow.

To encourage communication:***(Overhead 6.15)***

- talk to your baby!
- remember to act as if he is trying to communicate with you
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turn may be vocalising or moving his body)
- use lots of variety in your speech to maintain his interest
- encourage other people to talk to him
- remember that although he is now using vocalisations more as his turn in the conversation, he might still sometimes only move his body.
- wait until your baby does something before you have another turn.
- get down to his level so that he can make eye contact with you

To encourage object permanence:***(Overhead 6.16)***

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered..
- play peek-a-boo with his face washer or bib.

To encourage an understanding of cause and effect:***(Overhead 6.17)***

- give him different toys to play with that he can shake and bang. Let him hear the many different noises that he can make through his actions.
- when he vocalises, go up to him and talk to him about what he is doing.

- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.

To encourage problem solving:

(Overhead 6.18)

- place his toy just within reach so that he has to lean forward and reach for the toy to get it.
- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.

To encourage play:

(Overhead 6.19)

- give him toys that are easy to manipulate, particularly toys with interesting details.
- place toys within reach. There is nothing worse than trying to reach for something you can't get!
- encourage him to rotate toys to view their different sides, show him how its done! Point out little details to him, such as a hole in his block.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- encourage his brother or sister or little friend to play with him. Babies love playing with young children.

To encourage imitation:

(Overhead 6.20)

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes- what a fun game!
- copy facial expressions that he makes.

- sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

Play videotape section "Mum and Dad help me to learn" (00.00-00.00)

THINGS THAT MAKE LEARNING FUN:

There are so many things that your baby will enjoy playing with at this age. Many of these things can be found around the house such as ice block containers, old pavlova plastic eggs, empty film canisters, cotton reels, colourful plastic spoons and children's bangles, egg cartons, cardboard rolls from paper towels etc.

Play materials for 6 month olds should encourage baby to touch and explore; to manipulate; to discover details; to learn about cause and effect, to solve little problems such as how to get something that he wants; and to learn about object permanence.

Toys that are appropriate at this age include:

(Overhead 6.21)

- colourful balls- small ones to hold in one hand, and larger ones that need two hands.
- roly-polies and chime balls
- a variety of different noise makers
- soft toys with different textures
- bath toys
- bubble makers
- coloured blocks with different shapes and colours
- wind up toys (you do the winding!)

Show parents the toys in the bag that are appropriate for this age group. Encourage them to play with their baby. Demonstrate for them ways of communicating with their baby.

Play videotape section; "Things that make learning fun". (00.00-00.00)

LEARNING TO COMMUNICATE

SESSION SEVEN

TEACHING NOTES

INTRODUCTIONS:

Encourage the parents to introduce themselves and their babies again. All parents should be given name tags to encourage interaction. Begin the session by asking the parents if they have any questions from any of the previous sessions or handbooks. Again if you have any difficulties in answering any questions tell the parents that you will get back to them with an answer as soon as you can.

*As with Sessions 3,5, the aim of this session is to reinforce information provided in the previous session and to increase the parents awareness of the skills their infant is developing. Therefore this session should be interactive with you **facilitating** the discussion. If the parents do not cover all of the points under a section, you will need to add them. In some instances you may be able to cue them using **additional questioning**.*

DEVELOPMENT:

Present the following information:

In our last session we focused on development at 6 months. Today we will review what we have learnt about your baby's development so far. Over the past seven months your baby has learnt so many new things. Through looking, listening, touching and tasting, he has begun to understand more about this amazing world in which he lives. You will have noticed that as his skills have developed, the way in which he interacts with his environment has also changed. Let us look at what your baby can do now.

Comment:

We are going to watch the six month videotape again. As you watch it, look for things that you may have missed last time. Is your baby starting to do any of the things shown on the videotape? Remember that one of the aims of the videotapes is to increase your awareness of the skills that **your** baby has at this age.

Play videotape section: "Development at six months. See what I can do". (00.00-00.00).

MOTOR DEVELOPMENT:*(Overhead 6.1)***Question:**

What changes have you noticed in your baby's motor skills over the past month?
Discuss....

Question:

Has he found his feet or hands yet? *Discuss....*

Comment:

At this age your baby is learning many things about his body. Notice how he spends many hours looking at his feet and hands, feeling them and putting them into his mouth. We tend to take our body parts for granted, but to your baby they are very exciting. With your help, he will soon discover other parts of his body.

Question:

Has your baby started to sit by himself? *Discuss....*

Comment:

You can help your baby to learn to sit by sitting him squarely on the floor with his legs spread apart and supporting him until he balances. He will also use his hands to prop himself up for short periods. While he is learning to balance, you will need to provide him with some support (using pillows behind and to the side of him to prop him up) so that he can be free to use his hands. Sitting supported in a high chair will also allow him to use his hands more.

Remember that sitting helps your baby to become a little more independent. It allows him to do more with his hands. This will change the way in which he plays. Notice how he is now able to reach more consistently and easily toward things that he wants.

Question:

What sorts of things can your baby do with his hands? *Discuss....*

Question:

Has your baby started to move yet? *Discuss....*

Comment:

Over the next few months your baby will develop even better control over his body. Soon he will be trying to go places. He will try to roll over, at first from his back to his tummy and will soon begin trying to crawl.

Summarise:**Overhead 6.1****Motor Development:**

- has better control over his body
- is beginning to sit-supported
- is using his hands much more
- is beginning to transfer from one hand to the other
- is consistently reaching

LOOKING:

(Overhead 6.2)

Comment:

Sitting upright gives your baby a whole new view of the world. He can now clearly see quite long distances away such as across the room, or to trees when out in the garden. His increasing visual skills allow him to explore his surroundings more.

Question:

Have you noticed that your baby is becoming much more inquisitive now? *Discuss...*

Comment:

At this stage he likes to explore everything, turning toys over to examine the other sides, looking at himself in the mirror, examining your face, poking his fingers in your nose eyes and mouth.

Question:

What sorts of things does your baby like to look at? *Discuss...*

Comment:

He is still very attracted to bright colours and contrasts in shape. He will often stare for quite long periods at things that he wants which are out of his reach. He is also beginning to attend more to objects and books placed in front of him, and will enjoy touching his book as you read it to him.

Summarise:**Overhead 6.2****Looking:**

- can see clearly across a room
- is attracted to your face
- will stare for long periods at objects out of reach
- is attracted to bright colours and contrasts
- is able to maintain good eye contact

LISTENING:*(Overhead 6.3)***Comment:**

Your baby is very interested in sounds by this age, especially your voice. He prefers sounds which have lots of variety. Have you noticed that he attends to people more when they use lots of variation in their voices.

Question:

What does your baby do if you use a flat or angry voice? *Discuss...*

Question:

Can your baby work out the direction from which sounds are coming?

Comment:

You can help him to learn how to do this by shaking noise makers (such as rattles) within his sight and gradually moving them out of his sight to encourage him to follow the sound. Call him from out of his line of vision and gradually come into his view while still talking.

Summarise:**Overhead 6.3****Listening:**

- prefers sounds with variety
- beginning to work out the direction from which sounds are coming
- is attracted to the human voice

UNDERSTANDING OF THE WORLD:***Comment:***

As we have said before, what your baby knows about the world will significantly affect his communication skills.

Question:

What changes have you noticed in your baby's understanding and his awareness of the relationship between things in his environment?.

Object Permanence:

(Overhead 6.4)

Comment:

Remember, this is a fancy name for knowing that things still exist when they are out of our sight.

Question:

Has your baby started to cry when you leave the room or when an unfamiliar face comes into view? *Discuss....*

Comment:

Remember that this is not because he is being naughty, but because he has begun to develop these little images in his mind - of you, familiar people and objects. This is a very important step for your baby to make.

Question:

Has your baby started to search for objects which have fallen out of his view or tried to uncover partially hidden toys? *Discuss....*

Comment:

You can help your baby to develop this skill by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also play hide and seek in the bath, show him how the toy can go under the water and later under the bubbles.

Summarise:**Overhead 6.4****Object Permanence:**

- starts to cry when you leave his sight
- developing little "images" of familiar people/
- objects in his mind
- starting to search for objects that fall out of sight or that are partially hidden

Cause-effect relationships:

(Overhead 6.5)

Comment:

At this stage your baby is learning about cause-effect relationships. He is learning more and more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

Question:

Have you noticed him trying to work out how things "work"? *Discuss...*

Comment:

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, such as giving him toys that he can easily activate and by responding to his actions.

Summarise:**Overhead 6.5****Cause and effect relationships:**

- starting to learn that he can make things happen through his actions
- starting to learn to activate simple toys such as a roly-poly

Problem solving:
(Overhead 6.6)

Comment:

Your baby's ability to solve problems has been gradually increasing over the past few months. He has been learning that he can use his own body to get things that he wants. He is also starting to decide that there are things that he does not want and will turn away from them. He now realises that he can get things within reach by reaching out his hand, and is starting to shape his hand in anticipation of getting the object.

Question:

What sorts of things can we do to encourage him to develop a connection between people and objects, so that he can learn to use other people to help him get what he wants?

Discuss....

Parents should include the following:

- give him things that he is reaching for;
- talk to him about objects that he is holding or looking at;
- encourage him to look at you and the object.

Comment:

He will soon begin to solve other problems, such as dropping one toy so that he can pick up another one; or pushing one object out of the way to get another one, or pulling a cloth to get what is on top of it; or pulling a string to get a toy tied to it.

Summarise:

Overhead 6.6

Problem Solving:

- gradually increasing
- learning to use his own body to get things that he wants
- turning away from things that he doesn't want
- hasn't yet developed a connection between people and objects
- doesn't realise that he can use other people to get what he wants
- doesn't realise that he can use objects/toys to get other people's attention
- starting to use tools such as strings/cloths to get what he wants

Imitation:

(Overhead 6.7)

Question:

Has your baby started to copy things that you do or sounds that you make? *Discuss...*

Summarise:**Overhead 6.7****Imitation:**

- starting to copy simple actions such as banging
- will soon copy simple sounds

Play:

(Overhead 6.7)

Question:

Can you remember why play is important to your baby's development? *Discuss....*

Comment:

It is through play that your baby learns about his world. Initially your baby only used a few actions when playing with objects such as holding them or mouthing them.

Question:

In what ways is your baby's play different to what it was a few months ago? *Discuss....*

Comment:

Notice how he is much more active in his play. Although he still uses his mouth to explore objects, he now also carries out other actions on them such as banging, hitting, shaking, waving and crumpling. In this way he gradually builds up information about what these objects are and can do. Remember that to your baby, play is not a special time to sit down with toys, play is everything he does whenever he is awake, it is learning about his world through exploring.

Summarise:**Overhead 6.8****Play:**

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys.

COMMUNICATION SKILLS:*(Overhead 6.9)***Question:**

What sorts of things is your baby learning that will help him to be an effective communicator? *Discuss....*

Parents should include eye contact, turn taking, joint attention etc....

Comment:

At this stage your baby still has not yet developed true communication skills, he is continuing to learn the important rules he will need in order to be an effective communicator.

Over the past three months, you may have noticed that he is using much more eye contact with you while you are having little conversations with him. Because he still does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him to get objects. Therefore when he wants something or is playing with a toy, he will only look at that toy. Similarly, if he does not want something or does not want you to do something, he will still tend to bring his arms back and turn away without giving you eye contact.

As your baby's cause effect and problem solving skills develop over the next few months, you will notice that your baby will begin to use eye-contact more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward something: talk to him, position yourself so that he can achieve eye contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Question:

Does your baby vocalises to you, stop when you talk and continue when you stop? *Discuss....*

Comment:

Over the next few months your baby will become even better at taking-turns and will overlap less with your turns. He might even start to initiate conversations with you.

Question:

Does your baby enjoy playing turn-taking games such as peek-a-boo or pat-a-cake?

Comment:

These games will help him to develop his turn-taking in conversations. Notice how when you bang on the table, he bangs on the table when you stop; and stops when you start to bang again. You can help your baby to develop turn-taking skills by playing games like this with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

Question:

What sorts of sounds does your baby make? *Discuss...*

Comment:

Don't forget that babies are very variable in the type and amount of sounds that they make at this age. The important thing is that your baby is experimenting with sounds. Notice how he likes to lie in his cot or on the floor, or sit in his high chair and discover all of the different sounds that he can make with his mouth.

Question:

Does your baby like playing with your mouth? *Discuss...*

Comment:

You can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quite times to experiment with sounds.

Summarise:**Overhead 6.9****Communication:**

- eye contact is continuing to improve
- not yet using toys to get your attention
- not yet aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

Play videotape section "Development at Six Months. See what I can do" (00.00-00.00)

HELPING YOUR BABY TO LEARN:**Comment:**

Everything that you have done with your baby over the past seven months has been helping him to learn. Look at the many skills he has developed up until now. Without you he would not have learnt these skills. Because he isn't yet very mobile, he relies on you to help him to interact with his world. In some ways you are like his interpreter with the rest of the world.

Remember that you don't need to set aside special times each day to teach your baby new things. He learns best by being with you and having the opportunity to experience new things.

WHERE SHOULD BABY PLAY:

(Overhead 6.10)

Question:

Where does your baby like to play? *Discuss...*

Comment:

Remember that the best place for baby to play is still near you! Although he likes being in his own room for a small part of the day, he would rather be with you. Your baby still needs the opportunity to be in a variety of positions each day, so that he learns to use his different muscles. These positions also give him different views of his world.

Summarise:**Overhead 6.10****Where should baby play:**

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair
- In his cot

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:**(Overhead 6.11)**

As we have discussed in previous sessions, there are many routine activities that you carry out with your baby every day which are ideal opportunities for you to play with your baby and help him to learn.

Overhead 6.11**Routine Activities:**

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

By now you will have become very skilled in the art of nappy changing.

Question:

Are you having fun while you change his nappy or is it a bit of a chore? **Discuss...**

Comment:

Remember that with a little imagination, nappy changing time can become a lovely opportunity to communicate with your baby. You can talk to him about his body and the new actions he is starting to perform. As he gains more control over his body, you will notice him wriggling more trying to investigate the things around him, including his own body. See how limber he is- can you suck your toes! He thinks he is very clever to be able to do this. Watch how he inspects the different parts of his body. there are so many wonderful things for him to learn about his own body.

You can also use it as a time to play little games like "round and round the garden". But don't forget to keep that nappy handy!

Bath-time:**Question:**

Does your baby enjoy bath time? *Discuss...*

Comment:

Remember that bath time is a good time to learn about cause and effect. By splashing and kicking in the bath, he can learn that he can cause things to happen through his actions.

Don't forget to take the time to talk to him while he is having his bath. You can talk to your baby about his body parts as you wash him, for example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

Question:

What sorts of things do you and your baby do in the bath? *Discuss...*

Dressing:**Question:**

Do you talk to your baby while you dress him? *Discuss...*

Comment:

By talking to your baby as you dress him, he will gradually learn the names of his clothes and the actions that go with dressing. You can also have a little conversation with him. For example: "you want dress or jumpsuit today". Pretend that your baby's vocalisations are his answer eg.: "you want dress, ok". Now that he is moving more, you'll find that he's a bit of a "wriggle pot", squirming all around the place while you're trying to dress him.

Meal-times:**Question:**

Does your baby eat with you each day? *Discuss...*

Comment:

Remember that meal times provide you with an ideal time to interact with your baby. Over the last month or so, he may have started to eat small amounts of solids. Now that he is sitting and can use his hands more, he can also begin to learn to feed himself.

Question:

Have you started to give him his own spoon to play with while you feed him with another? *Discuss...*

Comment:

Remember to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner". Talk to him about what you are doing "nice bickie, eat it up, all gone", "more juice". When he has finished his dinner let him play with the spoon and empty bowl. He will enjoy hearing the sounds he can make.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

(Overhead 6.12)

Remember everyday activities provide your baby with an opportunity to learn. Don't keep your baby in one room, take him around the house or outside with you while you do your chores.

Question:

What sorts of everyday activities do you do with your baby? *Discuss...*

If parents have difficulty thinking of activities discuss the following examples :

The washing and gardening:

When you are hanging out the clothes or doing the gardening, don't leave your baby inside. This is a great chance for your baby to go outside and explore! Place a rug or a blanket near you on the grass, out of the sun. Sit or lie your baby on it with a few toys. There are so many things happening outside. He can look around at the garden, listen to all the different sounds around him: birds, the neighbours talking, the man next door hammering, an aeroplane going over head. He can look at all the different things in the back yard, the flowers, clothes, grass and the sky. He can smell the neighbours freshly cut grass and the cake the lady next door has just baked.

While you're working, you can talk to him about what you are doing and all of the things that he can see, hear and smell: "look, here's your jumpsuit, nice and clean", "what's that, it's an aeroplane", "can you hear the birdie".

Wait for your baby to say something and then continue on as though you were having a conversation about the things that you see.

Cooking and doing the dishes:

While you are cooking or doing the dishes, you can sit your baby in his high chair so that he can watch you. Again give him a few things to play with, so he won't get bored, but still show him and talk to him about what your doing. For example: "daddy's got nice orange carrot, peel carrot" "yum, baby like carrot" . The kitchen is a very exciting place for baby. Obviously some things in the kitchen are dangerous so now that baby is reaching you'll have to keep them out of his reach. The baby can hear, see and touch lots of interesting things in the kitchen, such as the sound of the dishes being washed, the sounds of pots and pans hitting each other, the smell of cooking, watching you peel and cut the vegetables, looking at all the different types of food and listening and watching mum and dad talking. To you the kitchen may be boring but to your baby its Aladdin's treasure trove.

Going for a walk:

Remember to try to go out for a short walk each day. Your baby will enjoy being pushed along in his pram. Walking is relaxing for both you and your baby. As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice your baby looking at something, tell him what it is, " that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Visiting Friends:

Don't forget that you need to have stimulation as well. Visiting friends is important for you and can provide your baby with yet another opportunity to learn. You will have noticed that lately your baby is less friendly toward unfamiliar people. As we have learnt, this is because he has started to develop little images in his mind of people who are familiar to him. If you limit the access he has to other people to a very small circle, your baby will find it difficult to interact with other people.

Playing games with music:

He will enjoy playing games that involve music. Try playing music on a radio or cassette player, then turning the music off and waiting for him to do something before you turn it back on. In this way he will gradually begin to associate action and the music coming back on. You can also help him to develop problem solving skills by gradually expecting more from him. Through waiting for him to give you eye contact before turning the radio back on, you are helping him to understand the connection between you and the music. In this way he is gradually learning to use you as a tool to turn on the music.

Watching Television:

Your baby may be starting to take an interest in your television. Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly.

You will find that your baby will become distressed if left in front of a television set for too long. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby.

Reading books:

Although your baby is unable to actually read, he is becoming increasingly interested in books.

Question:

There are many benefits of reading with your baby at this age, can you remember what they are?

Book reading:

- provides you and your baby with a quiet time to share with each other
- encourages your baby to attend to the same thing that you are
- provides your baby with an opportunity to connect pictures and words
- introduces your baby to another way that we use language
- provides baby with an opportunity to learn how to take turns
- sets up an important pattern for later in your child's development:- it helps him to grow up into a reader.

At this age your baby will be attracted to books with big, bright pictures. Don't just give your baby cloth books as he will find them hard to manipulate and will have difficulty turning the pages. Try to pick books that have only one main picture on each page (which helps to focus baby's attention) and the hard pages allow baby to turn them more easily.

Sit your baby on your lap with the book in front of both of you. Tell your baby about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

You will find that your baby will not always listen intently, she'll be pulling at the book, chewing the pages, but don't give up, she is enjoying it.

Playing games and singing songs:

Games and songs are special activities which teach your baby so many things. They teach your baby: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

For those songs with actions you can help your baby to carry out the actions by moving his hands. After a few goes at doing this, stop half way and wait for your baby to do something before you continue. Remember to be close enough to your baby so that you can make eye contact.

Let us sing some songs together:

The up and down song:

Up and down, up and down,
Little baby's going round.
Up and down, up and down,
Little baby's dancing round.

Pat-a-cake:

Pat-a cake, pat-a-cake,
baker's man
bake me a cake
as fast as you can

Pat it with flour
and bake it with ghee
and put it in the oven
for baby and me.

The Dancing song:

Dancing, dancing, one, two, three,
come along and dance with me

Dancing, dancing, one two three,
won't you come and sing with me.

The Bus song:

The wheels on the bus go round and round,
round and round, round and round,
the wheels on the bus go round and round,
all the way to school.

The children on the bus go up and down,
up and down, up and down,
the children on the bus go up and down,
all the way to school.

Try singing some of these songs (with actions) with the parents. Ask if they know any other songs which would be good.

Summarise:**Overhead 6.12:****Everyday activities:**

- the washing and gardening
- cooking and doing the dishes
- going for a walk
- visiting friends
- playing games with music
- watching TV
- reading books
- playing games and singing songs

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

Place a blank overhead on the projector, encourage the parents to tell each other what activities they have used over the past month to encourage each of these skills and how useful they have been. Have one of the parents write them down on the overhead. Add any of the following if they haven't been covered in the parents response.

To encourage listening:

(Overhead 6.13)

Question:

What sorts of things have you been doing to help to develop you baby's listening skills?

Include the following:

- continue to talk to him about things that you are doing
- give him noise makers such as rattles to play with
- take him for walks so that he can hear all the different sounds in the neighbourhood
- read books to him
- have him around you when you are talking to friends
- sing songs to him, especially action songs, help him to do the actions
- call him when you enter the room
- play music on the radio or record player

- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- don't make everyone whisper around the house, he has to get used to noises.
- continue to use lots of inflection in your voice.

To encourage looking:
(Overhead 6.14)

What can you do to encourage looking at this age?

- continue to give him bright colourful objects to play with
- show him colourful pictures in magazines and books
- sit baby on your lap while you are reading, encourage him to look at the pictures
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood
- sit him on your lap while you watch TV., he'll enjoy all the colours and movement
- play with him with colourful toys, move them around for him to follow.

To encourage communication:
(Overhead 6.15)

- talk to your baby!
- remember to act as if he is trying to communicate with you
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turn may be vocalising or moving his body)
- use lots of variety in your speech to maintain his interest
- encourage other people to talk to him
- remember that although he is now using vocalisations more as his turn in the conversation, he might still sometimes only move his body.
- wait until your baby does something before you have another turn.

- get down to his level so that he can make eye contact with you.

To encourage object permanence:

(Overhead 6.16)

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered..
- play peek-a-boo with his face washer or bib.

To encourage an understanding of cause and effect:

(Overhead 6.17)

- give him different toys to play with that he can shake and bang. Let him hear the many different noises that he can make through his actions.
- when he vocalises, go up to him and talk to him about what he is doing.
- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.

To encourage problem solving:

(Overhead 6.18)

What can you do to encourage problem solving?

Include:

- place his toy just within reach so that he has to lean forward and reach for the toy to get it.
- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.

To encourage play:*(Overhead 6.19)*

What sorts of things can you do to help develop his play skills?

Include:

- give him toys that are easy to manipulate, particularly toys with interesting details.
- place toys within reach. There is nothing worse than trying to reach for something you can't get!
- encourage him to rotate toys to view their different sides, show him how it's done! Point out little details to him, such as a hole in his block.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- encourage his brother or sister or little friend to play with him. Babies love playing with young children.

To encourage imitation:*(Overhead 6.20)*

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes- what a fun game!
- copy facial expressions that he makes.
- sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

Play videotape section "Mum and Dad help me to learn" (00.00-00.00)

THINGS THAT MAKE LEARNING FUN:

There are so many things that your baby will enjoy playing with at this age. Many of these things can be found around the house such as ice block containers, old pavlova plastic eggs, empty film canisters, cotton reels, colourful plastic spoons and children's bangles, egg cartons, cardboard rolls from paper towels etc.

Play materials for 6-7 month olds should encourage baby to touch and explore; to manipulate; to discover details; to learn about cause and effect, to solve little problems such as how to get something that he wants; and to learn about object permanence.

Question:

What are types of toys should have for this age group? ***Discuss...***

Parents should include the following:

(Overhead 6.21)

- colourful balls- small ones to hold in one hand, and larger ones that need two hands.
- roly-polies and chime balls
- a variety of different noise makers
- soft toys with different textures
- bath toys
- bubble makers
- coloured blocks with different shapes and colours
- wind up toys (you do the winding!)

Show parents the toys in the bag that are appropriate for this age group. Encourage them to play with their baby. Demonstrate for them ways of communicating with their baby.

Play videotape section; "Things that make learning fun". (00.00-00.00)

LEARNING TO COMMUNICATE

SESSION EIGHT

TEACHING NOTES

(refer to Session Eight teaching points)

INTRODUCTION:

Encourage the parents to introduce themselves to each other again. All parents are to be given a name tag to encourage interaction.

Ask each parent to tell the other parents one new thing that their baby is doing this month that he wasn't doing last month. Ask the parents if they have any questions from last session or the handouts they were given. Try to answer their questions as best you can. Again if you are unsure of any information, tell the parents that you will get back to them. Clarify with the main researcher.

DEVELOPMENT AT EIGHT MONTHS:

Present the following information:

Life for an eight month old infant is one great adventure. Your baby is getting ready to move! Now that he can sit by himself, he has much greater independence. His understanding of the world in which he lives has significantly increased by this age. He not only knows that he can make things happen through his actions but that he can use other people to get things that he wants. Let us look more closely at the skills that he has at this age.

MOTOR SKILLS:

(Overhead 8.1)

By eight months of age, your baby has much greater control over his body. His muscles are much stronger and he no longer needs your support in order to sit. If he leans too far to the side when he is sitting, he has learnt to put out his arm to balance himself again. Look how straight his back can be as he sits playing with a toy. As he begins to sit more steadily, he will also start to reach for toys that are not only in front of him but also to his sides, and sometimes behind him. Sometimes, he might turn all the way around. Since he no longer fears falling to one side, he can use his arms for playing rather than supporting himself. Sometimes he might even lean so far forward that he finds himself in a crawling position, without really meaning to. You can just imagine him saying "How did I end up like this?".

When your baby is lying on the floor, he may start to try to move! At first he will try to roll from his back to his tummy and later from his tummy to his back. Now that he is starting

to roll you will need to be extra careful about where you lie him. Later he might roll over and over to get to something that he wants. Sometimes babies will learn to shuffle along on their bottoms to get where they want to go.

Crawling often starts with your baby pulling himself forward with his hands, while moving his tummy along the floor. Sometimes he might go backwards first and seem a little confused about what he is supposed to be doing. Soon he will be getting up on his hands and knees to crawl along.

Moving requires a lot of effort from your baby. It is very hard work at first and he'll only be able to go a very short distance before he's exhausted. Later it will be like second nature to him, and he'll constantly be on the go. He needs lots of reinforcement at this stage. Give him plenty of cuddles and claps as he tries to move. Remember that he will not move until he is ready to do so. Some babies take their time in becoming mobile, while others quickly learn how to put it all together.

As his hands are now free, he can use them to manipulate toys in many different ways. He now easily reaches for toys that he wants. Watch how he shapes his hand in anticipation. Soon he will start to use his thumb and index finger to pick up small objects. Remember you need to ensure that small objects are not left around for him to get at.

Your baby is now able to do much more with his hands. His movements are more accurate and precise. He is able to easily rotate objects, turning them over with his hands, in order to view their different sides. He is able to carry out many different sorts of actions with toys such as shaking, banging, crumpling, dropping, pulling, knocking them down. Watch how easily he can transfer a toy from one hand to the other. He can now hold toys in both hands (at the same time) and is starting to bang things together, which requires a much greater degree of co-ordination. These skills enable him to explore his environment more easily.

Summarise:

Overhead 8.1

Motor Development:

- has better control over his body
- is able to sit unsupported
- is using his hands much more
- is able to transfer from one hand to the other
- is consistently reaching
- is able to roll from his back to his tummy
- is beginning to crawl
- is able to hold toys in both hands at the same time
- is starting to bang toys together
- is able to do more actions with his hands: banging, crumpling, shaking, dropping

LOOKING:*(Overhead 8.2)*

By eight months, your baby is becoming very inquisitive. His increasing visual skills enable him to explore his environment more easily. You will notice that as he can now see things at a distance more clearly, he has started to move toward things that are out of reach. At this stage he likes to explore everything, turning things over and over to examine the other sides. At this stage he is very interested in details. Notice how he pokes his finger in any little nooks and crannies. He particularly likes looking at himself in the mirror. Watch how he gets excited and pulls faces at his reflection. "Who is that?" he says.

Your face is still very interesting to him. Notice how he now examines different parts of your face, poking his finger in your eyes, nose and mouth. One of his favourite things is just looking at you. You will notice that he now maintains much better eye contact with you, especially when you're both having little conversations. Remember that eye contact is one of the most important parts of communication.

He is also starting to recognise familiar objects and people. Notice how excited he gets when he sees a favourite toy.

Summarise:**Overhead 8.2****Looking:**

- can see clearly across a room
- is attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is interested in detail, spends long periods examining toys
- is starting to recognise familiar people and objects.

LISTENING:*(Overhead 8.3)*

At this age your baby is becoming a very good listener. Watch how he stops what he is doing when he hears an interesting sound. He is starting to recognise some familiar sounds like your voice or the sound of the tap running for the bath. He now can easily locate where sounds are coming from and will soon begin to move toward them. He is particularly

interested in voices. Notice how he prefers speech that has a lot of variety in it, and he doesn't appear very interested in people with monotone voices.

He has lots of fun making different noises while he plays. What good noises he can make with his toys by banging and shaking. How clever he is to make all those different sounds with his mouth.... Remember to talk to him about all the different noises that he can hear.

Summarise:

Overhead 8.3

Listening:

- prefers sounds with variety
- able to locate where sounds are coming from
- is attracted to the human voice
- is beginning to recognise familiar sounds
- will soon begin to move toward sounds
- enjoys making different noises with toys
- enjoys making lots of different sounds with his mouth

UNDERSTANDING OF THE WORLD:

As we have said before, what your baby knows about the world will significantly affect his communication skills. Over the past few months, you will have noticed that there has been a major change in your baby's understanding and his awareness of the relationship between things in his environment.

Object Permanence:
(Overhead 8.4)

Now that he is 8 months old, he has learnt that things still exist when they are out of his sight. He easily follows moving objects and will have lots of fun watching his toys drop to the floor. Watch as he searches for toys that have fallen from view. Notice that he now doesn't hesitate to uncover a favourite toy which is partially hidden.

You may have noticed that he is starting to recognise familiar people more. He will also become very excited when a favourite toy comes within his view because he now remembers what fun it is to play with it. A favourite game at this age is peek-a-boo. Watch how he

anticipates what is happening. He likes to join in too. Wait for him to pull down the cloth when its his turn in the game.

Summarise:

Overhead 8.4

Object Permanence:

- recognises familiar people
- recognises favourite toys
- searches for objects that fall out of sight or that are partially hidden
- continuing to develop little "images" of familiar people/objects in his mind
- starting to search for and uncover fully hidden objects

Cause-effect relationships:

(Overhead 8.5)

By this age, your baby has learnt that he can make lots of different things happen through his actions. He has learnt that if he shakes or bangs a toy he can make a noise; that he can make things move by pushing them; and that he can make mum laugh by doing something funny again. Watch the look of delight on his face as he drops a toy from his highchair to get you to pick it up!

Summarise:

Overhead 8.5

Cause and effect relationships:

- knows that he can make things happen through his actions
- can activate simple toys such as a roly-poly
- looks to other people to activate interesting toys
- explores more complex toys to try to work out what activates them

Problem solving:
(Overhead 8.6)

Your baby is now becoming quite clever at solving little problems. He has learnt that he can use his own body to get things that he wants. He easily reaches for toys and is now starting to move toward toys that are out of his reach. He will push things out of his way or move over them to get to things that he wants. He is learning that he needs to use two hands to pick up larger toys and that he might have to drop one toy to pick up another when both of his hands are full. These are all quite difficult problems that he has to solve each day. He is also learning that he can use tools like a string or a cloth to get what he wants (so beware of table cloths!). Watch as he pulls the string on his toy train to get it closer.

At this stage he is developing a connection between people and objects. He now realises that he can use other people to help him get what he wants. This connection has been developing over the past few months through his interactions with you. By responding to his actions, you have been teaching him that by reaching and using eye contact, he can signal to you to help him to get what he wants. Watch as he tries to get a favourite toy. At first he will try to reach it by himself. When he realises that it is out of reach, he will turn to you and will look from you to the toy and back again. Notice how he keeps doing this while reaching for the toy as if to say "can you get it for me mum?". He might also vocalise while looking back and forward between you and the toys.

Summarise:

Overhead 8. 6

Problem Solving:

- has learnt to use his own body to get things that he wants
- turns away from things that he doesn't want
- has developed a connection between people objects
- realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- is able to use tools such as strings/cloths to get what he wants

Imitation:*(Overhead 8.7)*

Through imitation your baby will learn the words that we use to communicate to each other. He is now becoming much more accurate in his attempts to imitate the sounds and actions that you make. He has lots of fun trying to copy you, especially when you copy him first! He is starting to copy more complex sounds and actions. He particularly likes joining in action games.

Summarise:**Overhead 8.7****Imitation:**

- is much more accurate in copying simple actions such as banging
- is able to copy simple sounds
- attempts to copy more complex sounds

Play:*(Overhead 8.8)*

Now that your baby has developed more skills with his hands you will have noticed a change in his play. He is now able to do lots of different actions with toys. He likes to turn them over, inspecting their different sides. He especially likes poking his index finger into all the little nooks and crannies. He is learning to use his index finger and thumb to pick up smaller objects (sultanas are good for this) and to manipulate smaller parts on toys. He likes to knock toys down and will soon start to put toys into other toys.

Gradually he is building up information about what objects are and what they can do. Remember that to your baby, play is everything he does whenever he is awake, it is learning about his world through exploring.

Summarise:**Overhead 8.8****Play:**

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys.
- using his index finger and thumb to pick up small objects
- starting to put toys together
- likes knocking down blocks
- small objects

COMMUNICATION SKILLS:**(Overhead 8.9)**

At his age, your baby is learning to truly communicate. He is learning that he can signal to you to help him get what he wants. He has been learning all the rules he will need in order to be an effective communicator. He is now using eye contact more in his communicative attempts.

Now that he has developed a connection between people and objects in his environment, he will also start to tell you about the things that he plays with, sees and hears. He is starting to use eye contact, gesture and sometimes vocalisation to signal to you in his communication attempts.

He is beginning to use these signals to express a variety of communicative functions including requesting, rejecting and informing.

Notice how he looks back and forward between you and his toy as he reaches for it. He's requesting your help "get that for me, please mum!". You have probably noticed that when he is playing with a toy he now frequently looks at you and smiles, as if to say "look at this Dad", "Aren't I clever", or "see what I can do".

Now when he doesn't want something he will tend to look at you and pull his hands back and whinge. Sometimes he might even shake his head. He's on his way to saying "No!".

As your baby's cause effect and problem solving skills have developed he has learnt to use eye-contact, gesture and vocalisations more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward

something: talk to him, position yourself so that he can achieve eye-contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Observe how easily your baby now takes turns. He now consistently responds to your conversations with him. He enjoys taking turns with you. Notice how he waits for you to take a turn before continuing. Sometimes he also repeats his turn using a louder voice when you fail to respond, as if to say "Well come on, aren't you going to say something!". Occasionally he might even start to initiate conversations with you.

Your baby will still enjoy playing turn-taking games such as peek-a-boo or pat-a-cake. These games have been helping him to develop his turn-taking in conversations. He particularly likes banging games. Watch how he copies you banging on the table and then waits for you to take a turn before continuing.

You will have noticed that your baby is becoming much more vocal. He is now using a greater range of sounds, particularly consonants like "m" and "b". He is starting to string sounds together, such as "bubub"; "ah-oo". Remember that each baby is very different in the range and frequency of the sounds that they make. Try not to compare them. The important thing is that he is using more variety and is starting to join some sounds together. Remember that some babies are very quiet and others are noisy. It goes with their very different personalities.

He still finds his mouth interesting but he finds your mouth even more interesting. He will have lots of fun watching and feeling all the different sounds that you can make. Watch how he tries to copy you. Sometimes he might like doing this in the mirror.

He is now showing his emotions much more, he smiles and laughs and frowns when he is unsure of himself. It is important that you respond to these little signals. Say what you think he is feeling. "that's very funny", "you like that?", "you're a happy boy today" or "are you worried". By interpreting his feeling you are teaching him the words to go with how he feels.

*Summarise:***Overhead 8.9****Communication:**

- eye contact is continuing to improve
- using toys to get your attention
- aware that you can help him to get things that he wants.
- using eye contact, gesture and sometimes vocalisations in his communicative attempts
- beginning to use a range of communicative functions - requesting, rejecting and informing
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- starting to string sounds together
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

Play videotape section: "Learning to Communicate" Development at 8 months. See what I can do. (00.00-00.00). Discuss....

HELPING YOUR BABY TO LEARN:

Present the following information:

Although your baby can do more things by himself and is a little more independent, he still needs you and will often reach up to you to be picked up. He needs the security of knowing that you are there.

WHERE SHOULD BABY PLAY:

Watch how your baby uses you as a base from which to explore his world. Notice how he keeps checking that you're there. Set aside a play area for him where he can explore his world in safety. Place a small number of toys around him. Some within reach and others just a

little further to encourage him to move. Show him how its done if he doesn't look like he is getting anywhere. Don't give him too many toys at one time as this can be a little overwhelming.

Discuss....

He will now tend to place himself in a variety of positions each day. He'll try to go from sitting to lying. Soon he'll roll and try to crawl. All of these activities are continuing to help his muscles to strengthen and develop.

He particularly needs to spend time on the floor at this age. Now that he is learning to move, he needs lots of opportunities to practice his new skills. Although baby walkers may seem like good baby sitters, they do not encourage crawling and walking. By spending time on the floor, your baby is learning to use all the muscles he needs for crawling, rolling, standing and walking. Some babies don't like being on their tummies, but it is still important to continue to place them in this position, so that they can practice these skills.

Place toys around him, just a little out of reach to encourage him to move.

Your baby will still enjoy sitting on your lap. From this position he can see everything that is going on around him, particularly if you are out visiting!

He particularly likes sitting in his high chair. This enables him to get a very good view of what is happening around him. From this vantage point he can easily see what mum and dad are up to. He still enjoys sitting playing with his toys, dropping them on the floor for mum and dad to pick up for him!

Summarise:

Overhead 8.10

Where should baby play:

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

As you are now aware there are many routine activities that you carry out with your baby every day which are ideal opportunities for you to play with your baby and help him to learn.

These include:

Overhead 8.11

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

You probably feel a bit like a contortionist, trying to control this wriggling worm so that you can change his nappy.

There are so many things that he can now do with his body. He is easily distracted by things that he can see around the room. "What else can I see" he says. Follow his lead. Talk to him about the things that he looks at. "can you see your toe, see it wriggle". If you sound interesting, you might be able to get him to stay still long enough to get the job done!

While you are changing his nappy he will enjoy the opportunity to play with different parts of his body. He still likes to suck his toes, (isn't he clever). Watch how he inspects the different parts of his body. There are so many wonderful things for him to learn about his own body.

Continue to use this as a time to play little games like "round and round the garden". But don't forget to keep the nappy handy!

Bath-time:

Bath times are such fun with an eight months old. He can now do so many things in the bath. He likes it when Mum, Dad, brother or sister joins in too. He enjoys watching all of the things that they can do in the bath. He loves the feeling of the water on his body. He can splash and kick. He can watch the bubbles, that Mum blows, float through the air. He enjoys watching the water as it pours from a watering can. Watch the look of delight on his face as you the toy you have pushed under the water re-appears. Bath activity toys can be useful to teach cause and effect skills.

Notice how he listens intently to you as you talk about what he is doing and seeing. He is learning the words that go with his actions and the things around him. Talk to him about his body as you wash him, so that he will learn the names of his body parts. For example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

Dressing:

Dressing your baby is also a bit of a challenge at this age. He's very busy wanting to always be on the go. Remember to talk about the things that he is showing an interest in. Through your conversations, he is learning the words that go with the things that he sees.

When he looks at you and the things around the room, pretend that he is telling you about the things that he sees. Say what it is that you think he has said. eg. "Are you telling mummy about your dress?". "Yes, I can see your toes".

Ask him what he wants to wear. Pretend that you understand his answer - "you want to wear your jumpsuit today".

Meal-times:

Meal times continue to provide you with an ideal time to interact with your baby. Now that he is eating more solid food, he'll enjoy the opportunity to explore his food, feeling its texture with his fingers. This is also a good opportunity for him to practice his pincer grasp in safety, he will have lots of fun picking up small pieces of food with his index finger and thumb.

He will also enjoy trying to feed himself. Give him his own spoon to play with while you feed him with another. This will help to develop his independence. Remember it is important to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner".

Continue to talk to him about what you are doing "nice bickie, eat it up, all gone", " more juice". When he has finished his dinner let him play with the spoon and empty bowl. He will enjoy hearing the sounds he can make.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:**Gardening:**

Continue to take your baby outside with you while you hang out the clothes or do the gardening, don't leave your baby inside. He really benefits from the opportunity to go outside and explore! Now that he is starting to move, you will have to keep a good eye on him, he'll be off his rug before you know it. Place a few toys next to him to help to keep him occupied.

There are so many things that your baby can see and hear while he is outside. Watch as he listens intently to the birds singing above him in the tree. Remember to talk to him about the things that are around him "can you hear the bird?... that's a mummy bird... what a lovely song". Wait for your baby to say something and then continue on as though you are having a conversation about the things that you see.

Cooking and doing the dishes:

Don't forget to let your baby watch you while you work in the kitchen. Now that he is starting to move, it is very important that he is restrained in his highchair while you are cooking so that he doesn't get hurt. He will enjoy watching all the different things that you do while you cook. You probably don't realise how many different actions you make while you

cook: you stir, chop, cut, wash, wipe, twist, pull. As you talk about what you do, your baby is learning about all of these different actions.

Going for a walk:

Notice how he now tries to tell you about things as you walk along. Even though he can yet use words, pretend that you understand what he is saying. "yes, that's a big car". As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice your baby looking at something, tell him what it is, "that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Playing games with music:

Does your baby enjoy playing games that involve music. Notice how he wriggles and now looks at you when you turn the music off as if to say "turn it back on dad". He is learning the connection between you and the music coming back on. He is learning to use you as a tool to turn on the music.

Watching Television:

Your baby may be starting to take an interest in television. Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly.

You will find that your baby will become distressed if left in front of a television set for too long. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby. Sit down with him while he watches and join in the action songs. You can learn lots of good songs to sing with him through these shows.

Reading books:

Books are very fascinating at this age. Notice how he is starting to look where his own hand is as he manipulates the book. Encourage pointing, by pointing to the pictures as you read the book to him. Pretend that he is pointing when he touches the book. Talk to him about the pictures that he touches. You don't have to stick to the words in the book, you can also make up your own story to go with the pictures.

Sit your baby on your lap with the book in front of you both. Tell him about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

Playing games and singing songs:

Through action games and songs your baby can learn many different skills including: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

Help your baby to participate in the song or action game by gently moving his hands. After a few goes at doing this, stop half way and wait for him to do something before you continue. Notice how he is starting to perform part of the game by himself. Remember to be close enough to your baby so that you can make eyecontact.

Fish alive:

One two three four five,
Once I caught a fish alive,
Six seven eight nine ten,
then I let him go again.

Why did you let him go,
Because he bit my finger so.
Which finger did he bite,
This little finger on the right.

Demonstrate for the parents. Ask one of the parents if it is all right to sing to his/her baby. Sing the song. Encourage the parents to join in.....

Play videotape section: "Mum and Dad help me to learn" (00.00-00.00). Discuss....

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage listening:**

(Overhead 8.11)

- continue to talk to him about things that you are doing
- make different noise makers for him to play with (try an old spoon and a plastic container for a drum!)
- spend time out-side and in different environments so that he can hear lots of different sounds (the beach, a B-B-Q, shopping, going for a walk around the neighbourhood.)
- read books and magazines to him
- sit him on your lap or near you when you are talking to friends
- let him talk to Grandma or his friends when you are on the phone
- sing songs to him, especially action songs, help him to do the actions

- say his name when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- talk to him about noises that are happening around him (ie the keys rattling at the door.. "Daddy's home").
- continue to use lots of inflection in your voice.

To encourage looking:

(Overhead 8.12)

- continue to give him bright colourful objects to play with
- point to different things in his books and in magazines
- sit baby on your lap while you are reading, encourage him to look at the pictures
- point to pictures using his hands, talk about what you are pointing to.
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood, point to different things that you see.
- sit him on your lap while you watch TV., he'll enjoy all the colours and movement
- talk about things that he reaches for, pretend he is pointing them out to you.

To encourage communication:

(Overhead 8.13)

- talk to your baby!
- respond to each of his communication attempts, remember that he is now intentionally communicating with you!
- wait for him to look at you before you respond to him
- wait for him to look at you before giving him something that he wants.
- wait for him to take a turn in the conversation before continuing.
- use lots of variety in your speech to maintain his interest

- encourage other people to talk to him
- remember that he should be using vocalisations more as his turn in the conversation
- get down to his level so that he can make eye contact with you
- talk to him about things with which he is playing.
- when he looks at you while playing with a toy, act as if he is telling you about it
- when he looks at you and pulls away from something he doesn't want, say what you think it is that he is telling you "no mummy, I don't want that"
- wait for him to look at you and move his body before picking him up "you want up?"

To encourage object permanence:

(Overhead 8.14)

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered.
- play peek-a-boo with his face washer or bib.
- encourage him to search for toys that he drops
- place favourite toys in see-through containers

To encourage an understanding of cause and effect:

(Overhead 8.15)

- encourage him to play with toys that make different noises or that require different actions to make them work.
- when he vocalises, go up to him and talk to him about what he is doing.
- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.
- show him objects that do different things, eg carousel,
- give him a spoon to bang on a container
-

- build a tower of blocks and show him how he can knock it over
- encourage him to push to button on a Jack-in-the-box to make it pop up

To encourage problem solving:

(Overhead 8.16)

- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.
- place a favourite toy on a cloth, encourage him to pull it to get the toy
- wait for him to look at you before giving him a toy that is out of reach.
- place toys in open containers, encourage him to tip them over to get the toy out.
- encourage him to move to get out of reach toys.
- push an orange or ball along the floor to encourage him to move after it.

To encourage play:

(Overhead 8.17)

- give him toys that he can manipulate, particularly toys with interesting details.
- encourage him to rotate toys to view their different sides, show him how its done!
- encourage him to put his fingers in the nooks and crannies of his toys.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- play give and take games with him
- show him how to bang toys together
- blow cardboard tubes to make a good noise.

To encourage imitation:*(Overhead 8.18)*

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes - what a fun game!
- copy facial expressions that he makes.
- continue to sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

THINGS THAT MAKE LEARNING FUN:*(Overhead 8.19)*

Now that your baby is eight months old, he will enjoy playing with lots of different toys. Toys at this age should encourage him to explore, take notice of detail, solve problems, learn about cause and effect and develop object permanence.

There are many things from around the house that will provide him with hours of enjoyment. Find an old bag or box and fill it with interesting things like old keys, colourful plastic bangles, plastic measuring spoons, scraps of material, empty film canisters, egg rings etc. He'll spend hours enjoying what he can find in his box of tricks. Later he'll not only take them out but will try to put them back in! Ice block trays, empty cotton reels, and card board tubes are all fun to play with.

He will enjoy playing with many of his easier toys but will benefit from some new ones. Remember to try your local Toy Library, they have lots of interesting toys for you to borrow.

Toys that are appropriate at this age include:

- Toys to bang eg xylophone, drum, pegs
- Toys to push- balls, large plastic car,
- Books to feel and look at
- Toys of different sizes and shapes- some that need one hand to hold, others that need two
- Colourful blocks to stack and knock over

- Bubble makers (for mum and dad to blow!)
- Interesting toys like carousels, pop-up-toys, Jack-in-the box
- Toys with buttons to push and knobs to turn - like activity centres
- Toys to pull- like Walking caterpillars (or tie a string to any interesting toy that he can pull along).
- Music box.

Play videotape section: " Things that make learning fun". (00.00-00.00). Discuss....

Ask parents if they have any questions from today's session. Discuss...

Handout evaluation forms.. collect before parents leave. Ensure that parents have an appointment for the next session.

LEARNING TO COMMUNICATE

SESSION NINE

TEACHING NOTES

INTRODUCTION:

Encourage the parents to introduce themselves and their babies again. All parents should be given name tags to encourage interaction. Begin the session by asking the parents if they have any questions from any of the previous sessions or handbooks. Again if you have any difficulties in answering any questions tell the parents that you will get back to them with an answer as soon as you can.

As with Sessions 3,5,7, the aim of this session is to reinforce information provided in the previous session and to increase the parents' awareness of the skills their infant is developing. Therefore this session should be interactive with you facilitating the discussion. If the parents do not cover all of the points under a section, you will need to add them. In some instances you may be able to cue them using additional questioning. You don't need to ask all of the questions provided, they are there simply to assist you to cover all of the information required.

DEVELOPMENT:

Present the following information:

In our last session we focused on development at eight months. Today we will review what we have learnt about your baby's development so far.

Over the past nine months your baby has learnt so many new things. Through looking, listening, touching and tasting, he has begun to understand more about this amazing world in which he lives.

Question:

Have noticed that as your baby's skills have developed, the way in which he interacts with his environment has also changed? ***Discuss...***

Let us look at what your baby can do now.

Comment:

We are going to watch the eight month videotape again. As you watch it, look for things that you may have missed last time. Is your baby starting to do any of the things shown on the videotape? Remember that one of the aims of the videotapes is to increase your awareness of the skills that your baby has at this age.

Play videotape section: "Development at eight months. See what I can do". (00.00-00.00).

Comment:

Everything at this age is a great adventure. Now that he has a better understanding of the world in which he lives. He not only knows that he can make things happen through his actions but that he can use other people to get things that he wants. Let us look more closely at the skills that he has at this age.

MOTOR SKILLS:

(Overhead 8.1)

Question:

Is your baby now sitting without support? *Discuss...*

Comment:

As your baby gains greater control over his body and his muscles strengthen, he gradually will require less support in order to sit. Notice how he is starting to put his hand out to balance or steady himself.

Question:

What does your baby do when he is sitting? *Discuss...*

Comment:

As he begins to sit more steadily, he will start to reach for toys that are not only in front of him but also to his sides, and sometimes behind him. Sometimes, he might turn all the way around. Since he no longer fears falling to one side, he can use his arms for playing rather than supporting himself. Sometimes he might even lean so far forward that he finds himself in a crawling position, without really meaning to. You can just imagine him saying "How did I end up like this?".

Question:

How does your baby move around? *Discuss...*

Comment:

At first he will try to roll from his back to his tummy and later from his tummy to his back. Now that he is starting to roll you will need to be extra careful about where you lie him. Later he might roll over and over to get to something that he wants. Sometimes babies will learn to shuffle along on their bottoms to get where they want to go.

Question:

Has your baby started to crawl yet? *Discuss...*

Comment:

Crawling often starts with your baby pulling himself forward with his hands, while moving his tummy along the floor. Sometimes he might go backwards first and seems a little confused

about what he is supposed to be doing. Soon he will be getting up on his hands and knees to crawl along.

Question:

Does your baby get very tired moving about? *Discuss...*

Comment:

Moving requires a lot of effort from your baby. It is very hard work at first and he'll only be able to go a very short distance before he's exhausted. Later it will be like second nature to him, and he'll constantly be on the go. He needs lots of reinforcement at this stage. Give him plenty of cuddles and claps as he tries to move. Remember that he will not move until he is ready to do so. Some babies take their time in becoming mobile, while others quickly learn how to put it all together.

Question:

Does your baby shape his hand when he is reaching toward something he wants? *Discuss...*

Comment:

As his hands are now free, he can use them to manipulate toys in many different ways. He now easily reaches for toys that he wants. Watch how he shapes his hand in anticipation. Soon he will start to use his thumb and index finger to pick up small objects. Remember you need to ensure that small objects are not left around for him to get at.

Question:

Have you noticed that your baby is now using much more accurate and precise hand movements? *Discuss...*

Question:

Can your baby transfer objects from one hand to the other? *Discuss...*

Comment:

Your baby is learning to rotate objects, turning them over with his hands, in order to view their different sides. He is able to carry out many different sorts of actions with toys such as shaking, banging, crumpling, dropping, pulling, knocking them down. Watch how easily he can transfer a toy from one hand to the other. He can now hold toys in both hands (at the same time) and is starting to bang things together, which requires a much greater degree of co-ordination. These skills enable him to explore his environment more easily.

Summarise:**Overhead 8.1****Motor Development:**

- has better control over his body
- is able to sit unsupported
- is using his hands much more
- is able to transfer from one hand to the other
- is consistently reaching
- is able to roll from his back to his tummy
- is beginning to crawl
- is able to hold toys in both hands at the same time
- is starting to bang toys together
- is able to do more actions with his hands: banging, crumpling, shaking, dropping

LOOKING:*(Overhead 8.2)***Question:**

How have your baby's looking skills changed over the past few months? **Discuss...**

Comment:

By eight months, his increasing visual skills enable him to explore his environment more easily. You will notice that as he can now see things at a distance more clearly, he has started to move toward things that are out of reach.

Question:

Has your baby started to turn objects over to examine the other sides. **Discuss...**

Comment:

At this stage he likes to explore everything, turning things over and over to examine the other sides. At this stage he is very interested in details. Notice how he pokes his finger in any little nooks and crannies. He particularly likes looking at himself in the mirror. Watch how he gets excited and pulls faces at his reflection. "Who is that?" he says.

Question:

Does your baby like to play with your face? **Discuss...**

Comment:

Notice how much better he can now maintain eye contact with you, especially when you're both having little conversations. Remember that eye contact is one of the most important parts of communication.

Question:

Has he started to recognise familiar objects and people? **Discuss...**

Summarise:**Overhead 8.2****Looking:**

- can see clearly across a room
- is attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is interested in detail, spends long periods examining toys
- is starting to recognise familiar people and objects.

LISTENING:

(Overhead 8.3)

Question:

Have you noticed any changes in his listening skills over the past few months? **Discuss....**

Question:

Has your baby started to recognise familiar sounds? What does he do when he hears a sound that he knows? **Discuss....**

Comment:

At this age babies love to make lots of noises. Notice how he experiments with sounds, banging toys together, shaking them, hitting them on the floor or table. He thinks...the more noise the better! Remember to talk to him about all the different noises that he can hear.

Summarise:**Overhead 8.3****Listening:**

- prefers sounds with variety
- able to locate where sounds are coming from
- is attracted to the human voice
- is beginning to recognise familiar sounds
- will soon begin to move toward sounds
- enjoys making different noises with toys
- enjoys making lots of different

UNDERSTANDING OF THE WORLD:**Comment:**

As we have said many times before, what your baby knows about the world will significantly affect his communication skills. Over the past few months, you will have noticed that there has been a major change in your baby's understanding and his awareness of the relationship between things in his environment.

Object Permanence:

(Overhead 8.4)

Question:

Does your baby like to watch toys as they fall to the floor? *Discuss...*

Comment:

This is a great game, particularly if mum and dad pick up the toys for him!

Question:

Does he try to find toys that are hidden under cloths or in containers? *Discuss...*

Question:

What does he do if you leave the room? *Discuss...*

Question:

Has he started to recognise familiar people? *Discuss...*

Comment:

Notice that he becomes very excited when a favourite toy comes within his view because he now remembers what fun it is to play with it. A favourite game at this age is peek-a-boo. Watch how he anticipates what is happening. He likes to join in too. Wait for him to pull down the cloth when it's his turn in the game.

Summarise:**Overhead 8.4****Object Permanence:**

- recognises familiar people
- recognises favourite toys
- searches for objects that fall out of sight or that are partially hidden
- continuing to develop little "images" of familiar people/objects in his mind
- starting to search for and uncover fully hidden objects

Cause-effect relationships:

(Overhead 8.5)

Comment:

By this age, your baby is pushing them, and that he can make mum laugh by doing something funny again. Watch the look of delight on his face as he drops a toy from his high chair to get you to pick it up!

Question:

What sorts of things does your baby do that indicate he is starting to understand cause and effect relationships? *Discuss...*

Summarise:**Overhead 8.5****Cause and effect relationships:**

- knows that he can make things happen through his actions
- can activate simple toys such as a roly-poly
- looks to other people to activate interesting toys
- explores more complex toys to try to work out what activates them

Problem solving:*(Overhead 8.6)***Question:***Have you noticed a change in your baby's ability to solve little problems? Discuss...***Comment:**

Your baby has learnt that he can use his own body to get things that he wants. He will push things out of his way or move over them to get to things that he wants. He is learning that he needs to use two hands to pick up larger toys and that he might have to drop one toy to pick up another when both of his hands are full. These are all quite difficult problems that he has to solve each day. He is also learning that he can use tools like a string or a cloth to get what he wants (so beware of table cloths!). Watch as he pulls the string on his toy train to move it closer.

Question:

Does your baby appear to have developed a connection between people and objects? What does he do that indicates this to you? *Discuss...*

Comment:

By responding to his actions, you have been teaching him that he can reach and use eye contact to signal to you to help him to get what he wants. Try putting a favourite toy slightly out of his reach. At first he will try to reach it by himself. When he realises that it is out of reach, he will turn to you and will look from you to the toy and back again. Notice how he keeps doing this while reaching for the toy as if to say "can you get it for me mum?". He might also vocalise while looking back and forward between you and the toys.

Summarise:**Overhead 8. 6****Problem Solving:**

- has learnt to use his own body to get things that he wants
- turns away from things that he doesn't want
- has developed a connection between people objects
- realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- is able to use tools such as strings/cloths to get what he wants

Imitation:

(Overhead 8.7)

Question:

Is your baby imitating your actions and sounds more? *Discuss...*

Comment:

Remember that it is through imitation that your baby will learn the words that we use to communicate to each other. Notice how he is becoming much more accurate in his attempts to imitate the sounds and actions that you make. He will have lots of fun trying to copy you, especially when you copy him first!

Summarise:**Overhead 8.7****Imitation:**

- is much more accurate in copying simple actions such as banging
- is able to copy simple sounds
- attempts to copy more complex sounds

Play:

(Overhead 8.8)

Question:

What changes have you noticed in his play over the past few months? *Discuss...*

Comment:

Gradually your baby is building up information about what objects are and what they can do. Remember that to your baby, play is everything he does whenever he is awake, it is learning about his world through exploring.

Summarise:

Overhead 8.8

Play:

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys.
- using his index finger and thumb to pick up small objects
- starting to put toys together
- likes knocking down blocks
- small objects

COMMUNICATION SKILLS:

(Overhead 8.9)

Comment:

At his age, your baby is learning to truly communicate. He is learning that he can signal to you to help him get what he wants. He has been learning all the rules he will need in order to be an effective communicator. Notice that he is now using eye contact more in his communicative attempts.

Question:

When your baby is playing with a toy what does he do to tell you about it? *Discuss...*

Question:

What does your baby do to tell you that he wants something? *Discuss...*

Question:

What does your baby do to tell you that he wants you to do something again? *Discuss...*

Question:

What does your baby do to tell you that he doesn't want something? *Discuss...*

Comment:

As he develops a connection between people and objects in his environment, he will start to tell you about the things that he plays with, sees and hears. Notice how he looks back and forward between you and his toy as he reaches for it. He's requesting your help "get that for me, please mum!". You have probably noticed that when he is playing with a toy he now frequently looks at you and smiles, as if to say "look at this Dad", "Aren't I clever", or "see what I can do".

Notice that when he doesn't want something he will tend to look at you and pull his hands back and whinge. Sometimes he might even shake his head. He's on his way to saying "No!".

As your baby's cause effect and problem solving skills developed he is learning to use eye-contact, gesture and vocalisations more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward something: talk to him, position yourself so that he can achieve eye-contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Question:

Is your baby taking turns with you in a conversation? How have his turns changed since he was a little baby? *Discuss...*

Question:

Does your baby enjoy playing turn-taking games such as peek-a-boo or pat-a-cake? *Discuss...*

Comment:

These games help him to develop his turn-taking in conversations.

Question:

Is your baby becoming more vocal? *Discuss...*

Comment:

Remember that each baby is very different in the range and frequency of the sounds that they make. Try not to compare them. The important thing is that he is using more variety and is starting to join some sounds together. Remember that some babies are very quiet and others are noisy. It goes with their very different personalities.

Question:

Is your baby starting to show his emotions more? *Discuss...*

Comment:

It is important that you respond to these little signals. Say what you think he is feeling. "that's very funny", "you like that?", "you're a happy boy today" or "are you worried". By interpreting his feeling you are teaching him the words to go with how he feels.

Summarise:**Overhead 8.9****Communication:**

- eye contact is continuing to improve
- using toys to get your attention
- aware that you can help him to get things that he wants.
- using eye contact, gesture and sometimes vocalisations in his communicative attempts
- beginning to use a range of communicative functions- requesting, rejecting and informing
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- starting to string sounds together
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

Play videotape section: "Learning to Communicate" Development at 8 months. See what I can do. (00.00-00.00). Discuss.....

HELPING YOUR BABY TO LEARN:***Present the following information:***

Although your baby can do more things by himself and is a little more independent, he still needs you and will often reach up to you to be picked up. He needs the security of knowing that you are there.

WHERE SHOULD BABY PLAY:***Comment:***

Watch how your baby uses you as a base from which to explore his world.

Question:

Does your baby keep checking that you're around? *Discuss....*

Question:

Does your baby have a special place for his toys? *Discuss....*

Comment:

It is important to set aside a play area for him where he can explore his world in safety. Place a small number of toys around him. Some within reach and others just a little further to encourage him to move. Show him how its done if he doesn't look like he is getting anywhere. Don't give him too many toys at one time as this can be a little overwhelming.

Question:

Does your baby spend very much time on the floor? *Discuss....*

Comment:

Now that your baby is learning to move, he needs lots of opportunities to practice his new skills. Although baby walkers may seem like good baby sitters, they do not encourage crawling and walking. By spending time on the floor, your baby is learning to use all the muscles he needs for crawling, rolling, standing and walking. Some babies don't like being on their tummies, but it is still important to continue to place them in this position, so that they can practice these skills.

Place toys around him, just a little out of reach to encourage him to move.

Question:

Does your baby like sitting in his high chair as he plays? *Discuss..*

Comment:

Sitting in his high chair, enables him to get a very good view of what is happening around him. From this vantage point he can easily see what mum and dad are up to. He'll have lots of fun dropping toys onto the floor for you to pick up.

Summarise:**Overhead 8.10****Where should baby play:**

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:**Question:**

What routine activities do you carry out with your baby each day that help him to learn?

Discuss....**Summarise:****Overhead 8.11**

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

You probably feel a bit like a contortionist, trying to control this wriggling worm so that you can change his nappy.

Comment:

Although he is easily distracted at this age, don't forget to follow his lead. Talk to him about the things that he looks at. "can you see your toe, see it wriggle". If you sound interesting, you might be able to get him to stay still long enough to get the job done!

Question:

What sorts of games do you play while you change his nappy? **Discuss....**

Question:

What do you talk about as you change his nappy? **Discuss....**

Comment:

While you are changing his nappy he will enjoy the opportunity to play with different parts of his body. He still likes to suck his toes, (isn't he clever). Watch how he inspects the different parts of his body. There are so many wonderful things for him to learn about his own body.

Continue to use this as a time to play little games like "round and round the garden". But don't forget to keep the nappy handy!

Bath-time:**Question:**

Does your baby enjoy bath times? **Discuss....**

Question:

What sorts of games do you play in the bath? **Discuss....**

Question:

What do you talk about when he's having his bath? **Discuss....**

Question:

What does your baby do when you talk to him as you bath him? **Discuss....**

Comment:

Remember that by talking to him about what he is doing he is learning the words that go with his actions and the things around him. Talk to him about his body as you wash him, so that he will learn the names of his body parts. For example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

Dressing:**Question:**

What do you talk about when you are dressing your baby? **Discuss....**

Question:

What does he do when you talk to him as you dress him? **Discuss....**

Comment:

Remember that it is through your conversations, that he is learning the words that go with the things that he sees. When he looks at you and the things around the room, pretend that he is telling you about the things that he sees. Say what it is that you think he has said. eg. "Are you telling mummy about your dress?". "Yes, I can see your toes". Ask him what he wants to wear. Pretend that you understand his answer - "you want to wear your jumpsuit today".

Meal-times:**Question:**

Does your baby have at least one meal a day with you? *Discuss...*

Comment:

Remember that meal times provide you with an ideal time to interact with your baby.

Question:

Does your baby like to explore his food? *Discuss...*

Comment:

Remember that this is a good opportunity for your baby to practice his pincer grasp in safety, he will have lots of fun picking up small pieces of food with his index finger and thumb.

Question:

Do you let you baby feed himself? *Discuss...*

Comment:

Don't forget to give him his own spoon to play with while you feed him with another. This will help to develop his independence. Remember it is important to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner".

Question:

What sorts of things do you say while you are feeding him? *Discuss...*

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:**Gardening:****Question:**

Do you take you baby outside to play? *Discuss...*

Comment:

There are so many things that your baby can see and hear while he is outside. Watch as he listens intently to the birds singing above him in the tree. Remember to talk to him about the things that are around him "can you hear the bird?... that's a mummy bird... what a lovely song". Wait for your baby to say something and then continue on as though you are having a conversation about the things that you see.

Cooking and doing the dishes:**Question:**

Does your baby spend time with you when you are in the kitchen? *Discuss...*

Comment:

Your baby can learn so many things by watching you as you work in the kitchen, he can learn about all the different actions that you perform such as stirring, chopping, cutting, washing, wiping, twisting, and pulling. As you talk about what you do, your baby is learning about all of these different actions.

Going for a walk:**Question :**

Has he started to reach or point toward things as you walk along the street? *Discuss...*

Comment:

Notice how he now tries to tell you about things as you walk along. Even though he can not yet use words, pretend that you understand what he is saying.. "yes, that's a big car". As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice your baby looking at something, tell him what it is, "that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Playing games with music:**Question:**

Does your baby enjoy playing games that involve music? *Discuss...*

Watching Television:**Question:**

Does your baby watch TV.? *Discuss...*

Comment:

Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby. Don't forget to sit down with him while he watches TV. Join in the action songs. You can learn lots of good songs to sing with him through these shows.

Reading books:**Question:**

Does your baby enjoy reading books? *Discuss...*

Comment:

Notice how he is starting to look where his own hand is as he manipulates the book. Encourage pointing, by pointing to the pictures as you read the book to him. Remember to pretend that he is pointing when he touches the book. Talk to him about the pictures that he touches. You don't have to stick to the words in the book, you can also make up your own story to go with the pictures.

Sit your baby on your lap with the book in front of you both. Tell him about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

Playing games and singing songs:**Question:**

What action games do you play at home? *Discuss...*

Question:

Can you remember what action games can teach your baby? *Discuss...*

Comment:

Through action games and songs your baby can learn many different skills including: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

Help your baby to participate in the song or action game by gently moving his hands. After a few goes at doing this, stop half way and wait for him to do something before you continue. Notice how he is starting to perform part of the game by himself. Remember to be close enough to your baby so that you can make eyecontact.

Let us try some of the songs we learnt last month:

Fish alive:

One two three four five,
Once I caught a fish alive,
Six seven eight nine ten,
then I let him go again.

Why did you let him go,
Because he bit my finger so.
Which finger did he bite,
This little finger on the right.

Demonstrate for the parents. Ask one of the parents if it is alright to sing to his/her baby. Sing the song. Encourage the parents to join in.....

Play videotape section: "Mum and Dad help me to learn" (00.00-00.00). Discuss....

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:

Place a blank overhead on the projector, encourage the parents to tell each other what activities they have used over the past month to encourage each of these skills and how useful they have been. Have one of the parents write them down on the overhead. Add any of the following if they haven't been covered in the parents response.

To encourage listening:

(Overhead 8.11)

Question:

What sorts of things have you been doing to help to develop you baby's listening skills?

Discuss....

- continue to talk to him about things that you are doing
- make different noise makers for him to play with (try an old spoon and a plastic container for a drum!)
- spend time out-side and in different environments so that he can hear lots of different sounds (the beach, a B-B-Q, shopping, going for a walk around the neighbourhood.)
- read books and magazines to him
- sit him on your lap or near you when you are talking to friends
- let him talk to Grandma or his friends when you are on the phone
- sing songs to him, especially action songs, help him to do the actions
- say his name when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- talk to him about noises that are happening around him (ie the keys rattling at the door.. "Daddy's home".
- continue to use lots of inflection in your voice.

To encourage looking:
(Overhead 8.12)

Question:

What can you do to encourage looking at this age?

- continue to give him bright colourful objects to play with
- point to different things in his books and in magazines
- sit baby on your lap while you are reading, encourage him to look at the pictures
- point to pictures using his hands, talk about what you are pointing to.
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood, point to different things that you see.
- sit him on your lap while you watch TV., he'll enjoy all the colours and movement
- talk about things that he reaches for, pretend he is pointing them out to you.

To encourage communication:
(Overhead 8.13)

Question:

What can you do to encourage your baby's communication skills? *Discuss...*

Include:

- talk to your baby!
- respond to each of his communication attempts, remember that he is now intentionally communicating with you!
- wait for him to look at you before you respond to him
- wait for him to look at you before giving him something that he wants.
- wait for him to take a turn in the conversation before continuing.
- use lots of variety in your speech to maintain his interest
- encourage other people to talk to him
- remember that he should be using vocalisations more as his turn in the conversation.
- get down to his level so that he can make eye contact with you

- talk to him about things that he is playing with
- when he looks at you while playing with a toys, act as if he is telling you about it
- when he looks at you and pulls away from something he doesn't want, say what you think it is that he is telling you "no mummy, I don't want that"
- wait for him to look at you and move his body before picking him up "you want up?"

To encourage object permanence:

(Overhead 8.14)

Question:

What sorts of things do you do to encourage your baby's object permanence skills?

Discuss....

Include:

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered..
- play peek-a-boo with his face washer or bib.
- encourage him to search for toys that he drops
- place favourite toys in see-through containers

To encourage an understanding of cause and effect:

(Overhead 8.15)

Question:

What sorts of things do you do to teach your baby about cause and effect? **Discuss....**

Include:

- encourage him to play with toys that make different noises or that require different actions to make them work.
- when he vocalises, go up to him and talk to him about what he is doing.
- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.

- show him objects that do different things, eg carousel
- give him a spoon to bang on a container
- build a tower of blocks and show him how he can knock it over
- encourage him to push to button on a Jack-in-the-box to make it pop up

To encourage problem solving:

(Overhead 8.16)

Question:

What sorts of things do you do to encourage your baby' to solve problems? **Discuss...**

Include:

- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.
- place a favourite toy on a cloth, encourage him to pull it to get the toy
- wait for him to look at you before giving him a toy that is out of reach.
- place toys in open containers, encourage him to tip them over to get the toy out.
- encourage him to move to get out of reach toys.
- push an orange or ball along the floor to encourage him to move after it.

To encourage play:

(Overhead 8.17)

Question:

What sorts of things do you do to encourage your baby's play skills? **Discuss...**

Include:

- give him toys that he can manipulate, particularly toys with interesting details.

- encourage him to rotate toys to view their different sides, show him how its done!
- encourage him to put his fingers in the nooks and crannies of his toys.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- play give and take games with him
- show him how to bang toys together
- blow cardboard tubes to make a good noise.

To encourage imitation:

(Overhead 8.18)

Question:

What sorts of things do you do to encourage your baby to imitate you? *Discuss...*

Include:

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes- what a fun game!
- copy facial expressions that he makes.
- continue to sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

THINGS THAT MAKE LEARNING FUN:

(Overhead 8.19)

Comment:

Now that your baby is eight months old, he will enjoy playing with lots of different toys. Toys at this age should encourage him to explore, take notice of detail, solve problems, learn about cause and effect and develop object permanence.

Question:

What sorts of things from around the house does your baby like to play with? *Discuss...*

Parents should include the following:

There are many things from around the house that will provide him with hours of enjoyment. Find an old bag or box and fill it with interesting things like old keys, colourful plastic bangles, plastic measuring spoons, scraps of material, empty film canisters, egg rings etc. He'll spend hours enjoying what he can find in his box of tricks. Later he'll not only take them out but will try to put them back in! Ice block trays, empty cotton reels, and card board tubes are all fun to play with.

Question:

What sorts of toys does he play with now? **Discuss...**

Parents should include the following:

- Toys to bang eg xylophone, drum, pegs
- Toys to push- balls, large plastic car,
- Books to feel and look at
- Toys of different sizes and shapes- some that need one hand to hold, others that need two
- Colourful blocks to stack and knock over
- Bubble makers (for mum and dad to blow!)
- Interesting toys like carousels, pop-up-toys, Jack-in-the box
- Toys with buttons to push and knobs to turn- like activity centres
- Toys to pull- like Walking caterpillars (or tie a string to any interesting toy that he can pull along).
- Music box.

Play videotape section: " Things that make learning fun". (00.00-00.00). Discuss...

Ask parents if they have any questions from today's session. Discuss...

Handout evaluation forms.. collect before parents leave. Ensure that parents have an appointment for the next session.

LEARNING TO COMMUNICATE

SESSION TEN

TEACHING NOTES

(Refer to Session Ten Teaching Points)

INTRODUCTION:

Encourage the parents to introduce themselves to each other again. Each parent is to wear a name tag to encourage interaction. Begin the session by asking the parents if they have any questions from any of the previous sessions or handbooks. Again if you have any difficulties tell the parents that you will get back to them with an answer as soon as you can.

Ask the parents to tell the group one new thing that their baby has done since the last session. Discuss....

DEVELOPMENT AT TEN MONTHS:

Provide the following information:

Many changes have occurred in your baby's skills over the last few months. Most notably your baby is becoming much more active and is interacting more with his environment.

MOTOR SKILLS:

(Overhead 10.1 & 10.2)

At around 10 months, you will begin to notice a major change in your baby's motor development. He is starting to move around more by himself. He can now get to where he wants to go by himself. He will often use a variety of ways of getting around, including crawling, rolling, shuffling on his bottom, and stepping around the furniture. You will notice that he rarely stays still for very long, his world is much too interesting for that!

It takes a lot of effort for your baby to move around at first. It's a bit like when you first learnt to drive a car, you needed to think about what you were doing, where to put your foot etc. As it was for you, it will soon seem like second nature to him.

When your baby first starts to pull himself to standing, he will have difficulty getting down and may fall back with a thud. You can help him to learn to balance by encouraging him to pull himself up while holding on to a small chair or small table. Practicing standing and holding on will help him to stand alone when he is stronger. You can also encourage him to take his first steps by holding his hands in yours and moving slowly backward. A baby walking trolley (that he can push) is very useful for encouraging walking. Remember to choose one that is

very stable. He can use it to push around his favourite toys. If possible do not use the walkers that the baby sits in, as these tend to discourage him from supporting his own weight and balancing. They tend to hinder the baby's walking rather than helping it.

By 12 months, he may start to be more adventurous and take his first tentative steps by himself. This is such an exciting time for both baby and you. Watch the look of utter delight and surprise as he takes his first steps toward you. It is important, however, to remember that babies will vary in age at which they begin walking, it could be anytime from 10-18 months.

At 10 months, not only can he get around more easily, but he has developed much greater control over his hands. He can now reach and hold things much more easily. Again this enables him to explore things in his environment more. Watch as he holds his toys, bangs them, rotates them, swaps them from one hand to the other, drops them, shakes and performs many other different actions on them. Each day he learns something new that he can do with his hands.

Because he is now able to explore objects more with his hands, you will notice that he doesn't mouth toys as much as he did when he was younger. He will still put toys to his mouth, but will spend more time playing with them, putting his index fingers into their small holes, banging them together, rotating them to view their various sides, shaking them etc.

As his hands become stronger, he will begin taking an interest in opening cupboards, doors and containers. He will also gain greater control over his fingers and will start to use his thumb and index finger to pick up small objects like peas rather than scooping them up into the palm of his hands. He will be fascinated by picking up small pieces of food, bits of fluff off the carpet etc. You need to watch him very carefully at this age, because he will tend to pick up small things and put them into his mouth. Make sure the family don't leave little things around for him to find.

At this age he is only just learning to release things. He may offer you toys but doesn't yet realise that he has to let go of an object in order to give it to you.

Summarise:

Overhead 10.1

Motor Skills (at 10 months):

- has better control over his body
- is much more mobile
- is using a variety of ways to get around - rolling, crawling, shuffling, walking around the furniture
- is using his hands much more to explore objects
- is using a variety of actions on objects
- is beginning to use his index finger
- is consistently reaching

Overhead 10.2**Motor skills (at 12 months)**

- is much more mobile
- is pulling himself up on the furniture
- enjoys walking around the furniture
- may have taken his first steps by himself
- is mainly getting around by crawling and walking
- is very co-ordinated with his hands
- uses his hands to explore new objects
- uses many different actions on objects
- is using his index finger more

LOOKING:

(Overhead 10.3 & 10.4)

This is the age of the true explorer. Everything is fascinating to your baby at this age. We tend to take most things in our homes for granted because we have seen them all so many times before, but to your baby, the kitchen, the lounge room, his bed room, the yard, are like Aladdin's magic cave, with so many wonderful things to learn about. Now that he can move around more, he is able to explore his environment much more easily. From his different positions, (sitting, crawling, standing), he can gain many different views of his world.

Remember that he can now easily get into places that he couldn't reach before and this can lead him to danger. Low cupboards with sharp objects or chemicals, stairs, appliance cords, the iron, table cloths dangling from the table are all things that now attract him. It is essential to ensure that he doesn't get hold of them. Cupboards need to be locked in some way, cords put out of reach and stairs blocked so that he can't get near them.

His increasing visual skills also allow him to explore his surroundings more. He can now easily see quite long distances away such as across the room, or to trees when out in the garden. Notice how he watches people from a distance. He is now much more attentive to actions occurring around him and will crawl or move to join in. His developing hand skills enable him to explore objects more easily. Watch as he rotates toys, examining their detail. He will finger small holes and touch parts of contrast. He is taking much more interest in small details, like the eyes on a doll, or the coloured dot on his tee-shirt. He enjoys touching your face, feeling your eyes and mouth.

Over the next few months you will notice him beginning to attend to things for longer periods of time such as the dogs playing in the yard, dad washing the car etc.

He still enjoys looking at faces and now easily maintains eye contact with you when you are having little conversations. Notice how he is using pointing and eye contact more to direct your attention. He is also starting to look where you point. You will notice this occurring more over the next 2 months. 12 month olds are very good pointers! Over the next two months he will begin to take much more interest in books. He will not only enjoy touching the book as you read it but may also begin to look at the pictures as you point to them.

Summarise:

Overhead 10.3

Looking (at 10 months):

- is exploring his environment more
- is more interested in detail, rotates objects to view various sides
- can see clearly across a room
- is still attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is using pointing and eye contact to direct attention
- is beginning to look where someone else points

Overhead 10.4

Looking (at 12 months):

- is looking to where someone else points
- is frequently directing other people's attention by pointing
- is very inquisitive

LISTENING:

(Overhead 10.5 & 10.6)

Your baby is still very interested in sounds at this age, especially your voice. He still prefers sounds which have lots of variety. He enjoys listening to you sing and talk. He now listens to and tries to copy a larger number of sounds.

He is now able to work out where sounds are coming from and will sometimes move to find the sound source.

Over the next few months he will begin to recognise the different sounds that he hears. He will learn to distinguish people's voices and will remember the sounds of favourite toys or animals.

Summarise:

Overhead 10.5

Listening skills (10 months):

- prefers sounds with variety
- can work out the direction from which sounds are coming
- is attracted to the human voice
- is trying to copy sounds that he hears

Overhead 10.6

Listening skills (12 months):

- enjoys complex sounds
- is beginning to recognise different sounds and voices
- is becoming more accurate in copying sounds that he hears

UNDERSTANDING OF THE WORLD:

Over the last 10 months, your baby's knowledge of the world has significantly increased. His whole world is growing rapidly each day.

Object Permanence:

(Overhead 10.7 & 10.8)

He now consistently looks for and finds objects which are hidden under a cloth. He will search for an object which he has dropped on the floor. This is a great game for Mum to play.

He is starting to signal to others to get objects which have fallen from his view, and will point in their direction.

He will enjoy games where you hide toys in containers or bags and he has to put his hands in to get them out. He will also enjoy playing hide and seek. Over the next few months he will start to hide from you. Think of all the fun you will have chasing each other around the house, hiding behind the lounge or under the table.....

If he hasn't yet developed this skill, you can help him by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also do this in the bath by helping him to hold toys under the water.

By 12 months he will easily recognise favourite toys and people and will direct attention to them.

Summarise:

Overhead 10.7

Object Permanence (at 10 months):

- cries when you leave his sight
- has developed little "images" of familiar people/objects in his mind
- searches for objects that fall out of sight or that are partially hidden
- uncovers hidden objects

Overhead 10.8

Object Permanence (at 12 months):

- easily recognises familiar objects and people
- plays hide and seek

Cause-effect relationships:
(Overhead 10.9 & 10.10)

Your baby is still learning about cause-effect relationships. Every day he is learning more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

He is now very busy working out what makes things work. Watch him as he explores a new toy, pushing a button that makes a noise. He uses his hands now in many different ways to find out what he can make his toys do. Roly-polies and jack-in-the-boxes are good for helping him to learn that if he does something he can make something else happen.

Watch as he learns that if he blows in a paper tube he can make a good noise like a trumpet.

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, such as giving him toys that he can easily activate and by responding to his actions.

By 12 months he will have a much better understanding of the effects he has on his environment. He will know how to attract your attention using his body and objects around him. He will repeat things that other people laugh at, sometimes much to your dismay!

Summarise:

Overhead 10.9

Cause and effect relationships (10 months):

- knows that he can make things happen through his actions
- is able to easily activate simple toys such as a roly-poly
- is starting to be able to re-activate more complex toys

Overhead 10.10**Cause and effect relationships (at 12 months):**

- enjoys re-activating more complex toys
- enjoys watching the effects of his actions
- repeats actions that make people laugh

Problem solving:

(Overhead 10.11 & 10.12)

Your baby's ability to solve little problems has increased significantly over the last few months. He has learnt that not only can he use his body to get things that he wants, but that he can also use other people. He has developed a connection between people and objects and realises that he can use other people to help him to get what he wants.

He now knows that there are things that he does not want and will turn away from them. Sometimes he might push them away as he looks at you. He's saying "no, I don't want it, mum".

He now not only reaches toward things that he wants but will move toward them if they are out of reach. Watch as he chases a ball that is rolled in front of him. At this age he enjoys following objects. A bright coloured car or a toy which rolls and makes a noise may particularly interest him.

Some toys need two hands to make them work. At first he might try to pick up a large toy with one hand but will quickly learn that in order to pick it up he needs to use both his hands. Again he has solved a little problem.

A favourite game is dropping things on the floor and signalling to Mum that he wants her to pick them up. Again he has learnt that he can attract Mum's attention by dropping things on the floor.

By twelve months he will have learnt that he can get Mum or Dad to make interesting things happen again, for example, he will hand Mum or Dad a wind up toy to make it play again.

There are so many little problems that he will learn to solve each day. He will enjoy solving them. He will learn that if he is holding something in both hands, he needs to drop one in order to pick up a third toy; or that he has to push one object out of the way to get another one, or pull a cloth to get what is on top of it; or pull string to get a toy tied to it.

Summarise:**Overhead 10.11****Problem Solving (10 months):**

- gradually increasing
- will crawl to get something that he wants
- turns away from things that he doesn't want
- has developed a connection between people objects
- now realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- often uses tools such as strings/cloths to get what he wants (eg. pulling a string to get a toy)
- learning to solve lots of different problems

Overhead 10.12**Problem solving (12 months):**

- spends much of the day solving little problems
- recognises that he can signal to other people to help him to get what he wants
- is much more independent

Imitation:

(Overhead 10.13 & 10.14)

By ten months you will notice that your baby is attending more to the sounds and actions you make and is trying to copy them. He enjoys copying simple sounds that you make such as "bubub" and simple actions like banging on the table. He is also starting to copy more complex actions and sounds. He enjoys playing copying games. Watch as he tries to join in the sounds and actions of Twinkle Twinkle Little Star or pat-a-cake. His attempts to copy you are becoming much closer to yours. As we've said before, it is through imitation that your baby learns the words that we use to communicate to each other. You can play copying games

anywhere- in the bath, splashing or pouring water, banging on the table, pulling different faces.

Summarise:

Overhead 10.13

Imitation (10 months):

- able to copy simple actions such as banging
- able to copy simple sounds
- starting to copy more complex actions and sounds.

Overhead 10.14

Imitation (12 months):

- able to copy more complex sounds
- beginning to copy words, although not accurately
- enjoys copying more complex actions eg. those which go with songs such as twinkle twinkle little star

Play:

(Overhead 10.15 & 10.16)

Now that your baby has gained better control over his hands, you will notice a significant change in his play. To him everything is a play thing including kitchen utensils, an old magazine, Mum's knitting! Remember that it is through play that your baby learns about his world. Initially your baby only used a few actions when playing with objects such as holding them or mouthing them. Now that he has greater control over his hands and is able to attend more to the detail in toys you will notice a change in his play. He uses a lot more variety in the actions he uses on objects, he will rotate them inspecting their various sides, he will shake rattles, push buttons, pull strings and cloths, finger holes and other details, crumples paper. He is starting to combine objects. He will enjoy playing with containers like card board boxes, egg cartons and ice cream containers. He can put lots of different things in them like dolly pegs, old keys, empty cotton reels and some of his blocks. A old tissue box will bring him much joy as a post-box.

Summarise:**Overhead 10.15****Play (10 months):**

- much more interested in toys
- using more variety in his actions on objects
- starting to combine objects, putting things in, taking them out

Overhead 10.16**Play (12 months):**

- is combining toys more in his play, putting toys in and out of containers
- using more variety in his actions
- beginning to use functional play, for example, pushing a small car, making a toy cow walk

COMMUNICATION SKILLS:

(Overhead 10.17 & 10.18)

By 10 months your baby has started to truly communicate. Over the past 10 months he has been learning the rules of communication. He has learnt the importance of eye-contact and taking turns in a conversations. Watch him as he talks to you. Notice how good his turns are becoming. He is using vocalisations more in response to your vocalisations. He is also using much more variety in his vocalisations and often appears to be copying the sounds that you make. You probably have also noticed that he practices his sounds while he plays. He spends a lot of time experimenting with sounds, learning how he makes them. At this stage he is using many more consonants and is stringing sounds together more. Remember that you can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quite times to experiment with sounds.

Now that he has developed a connections between people and objects, you will notice that he is using a greater range of functions in his communication attempts. He will now request objects and actions, he will comment on things as he plays, he will reject actions and things that he doesn't want.

Watch as he tries to signal to you to get something that he wants. He will reach toward it at first, if he isn't successful, he will look to you and then reach back to it. Sometimes he might also vocalise to you as he reaches toward things that he wants.

He is also learning that he can use things to attract your attention. Over the last 2 months you will have noticed him talking to you more about what he is doing. Listen as he vocalises while playing with his toys. As he looks at you at vocalises, remember that he is telling you about what he is doing. Because he isn't yet using words, it is sometimes difficult to tell if he is just commenting on something or asking for something. When he looks at you and points to a toy, he is most likely asking you to get it for him. If you wait before giving it to him and he doesn't get impatient, he was most likely only commenting to you about it. Similarly, sometimes he might hold out a toy to you. If he lets it go, he is most likely giving it to you. He wont let it go, he is most likely only showing you.

Now that his communication skills are more effective, he will reject more effectively by giving you eye contact and shaking his head with a stern intonation. Sometimes he might push away an unwanted object while looking at you and shaking his head, or try to get away from you.

At around 12 months your baby may begin using his first words to signal to you in his communicative attempts. This is one of your baby's most exciting achievements. He will start to use words to express all the different functions he previously expressed non-verbally, that is with actions and general vocalisations. He is learning the power of words!

By 10 months you will notice that he is starting to recognise some familiar words, such as mummy or daddy or his own name. He is learning to associate the words he hears with the things in his environment. Watch as he searches when daddy's name is spoken. Through your conversations with him he is learning the connection between words and objects, actions and people. By 12 months he might be able to point to his nose or to the dog if you ask him. He might even be able to follow some simple instructions such as "give me the ball".

Your baby is continuing to develop his turn-taking skills. At 10 months, he is much more consistent in his turns, he is overlapping less with your turns and is also initiating turns more. He particularly enjoys playing turn-taking games such as peek-a-boo or pat-a-cake . These games will help him to develop his turn-taking in conversations. He is also starting to play more turn-taking games with toys.

His joint attention skills are also developing considerably by this stage. He now not only looks where his own hand is but is starting to direct your attention more. He is also starting to look where you point. By 12 months his pointing skills will be much more developed and he will easily look to where you point.

Summarise:**Overhead 10.17****Communication (at 10 months):**

- eye contact is continuing to improve
- using toys to get your attention
- is now aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy the sounds and actions that you make more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth
- beginning to understand some familiar words

Overhead 10.18**Communication (at 12 months):**

- is understanding more words
- is starting to copy more sounds and words
- may have said his first word!
- enjoys directing your attention, has a good pointing finger.
- enjoys experimenting with sounds
- is combining sound more with his play with toys

*Play video tape section: Development at 10 months. See what I can do. (00.00-00.00).
Discuss....*

HELPING YOUR BABY TO LEARN:

As you have learnt over the past 10 months, everything you do can help your baby to learn.

WHERE SHOULD BABY PLAY:

Playing near you is still very important. Although he is more mobile now and wants to join in things that are happening around him, he will develop and explore more if he is secure in the feeling that you are close at hand if he needs you. The best place for baby to play is still near you!

Remember that it is important that your baby has the opportunity to play in a variety of environments each day. Although a play pen is useful for keeping baby safe when you can't keep an eye on him, he should not play in there by himself for long periods of time. Playpens can limit his ability to explore his environment and thus his ability to understand the world in which he lives.

Overhead 10.19

Where should baby play:

- near you
- in a variety of environments

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Your baby's new found mobility will bring new challenges to routine activities such as nappy changing, bath time, meal times. Some-times it is almost like wrestling a monkey or a snake. Now you find that you have a squirming, wriggling little creature to deal with. Although these times still provide you with ideal opportunities interact with your baby, they will be different because he is taking a more active role in them.

Nappy changing time:

Do you realise that you have changed at least 2000 nappies by now? What a lot of nappies! Think of all the things your baby has learnt during these times spent with you. He has learnt to look at you when your talking and to take-turns in your conversations using his body and his voice. He has learnt to attend to you and to listen to your voice.

As you now know, nappy changing doesn't have to be an unpleasant chore, it can be wonderful opportunity to talk and interact with your baby. Remember to continue to talk to him as you change his nappy, asking and telling him about his body and his actions. He still enjoys having a kick with his nappy off.

Bath-time:

Bath-time with a 10 month old is one of life's great joys! Your baby takes so much pleasure from his bath, that it is hard for you not to also enjoy it. Now that he is more active you will need to keep a very keen eye on him. He'll try pulling himself up in the bath, rolling, sitting, crawling. Non-slip mats or stickers are essential for this age group.

Safety tip: Try to establish rules for the bath early, such as "no standing up unless your getting out of the bath".

Watch as he gets excited with anticipation as he hears the water run for his bath. Sometimes you might hop in the big bath with him. This will give him the security to be a bit more adventurous, like lying down in the bath.

A favourite game is watching mummy or daddy blowing soap bubbles in the air. See how excited he gets as the bubbles float down. He may even try to catch them. Watch the look of surprise as the bubbles burst when he touches them. He may even look at you and vocalise in order to share this experience with you.

He will also enjoy splashing the water and will love to take turns doing it with you. Who can make the biggest splash?! Remember, to talk to your baby about his body parts as you wash him, for example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

There are lots of things your baby can learn while having his bath. He can learn about cause-effect relationships by watching the water splash as he hits it with his hands or kicks it. He now has lots of fun with toys in the bath. He can watch them float, tip water out of them, sink them and push them along the water.

Dressing:

It's a little hard at times to dress a ten month old, as you're probably now well aware. He's much too busy to want to hang around while you put on all his cloths. He'll wriggle and squirm, twisting to get away and into all the wonderful things around him. Try making it into a game, it may help to keep his attention longer. You can help him to develop his object permanence skills by encouraging him to watch for his hands as they slip through his sleeves or his toes as they emerge from the bottom of the leg of his pants. This will also help him to learn about his body parts.

Continue to talk to him about what your doing, eg. "daddy putting singlet on "; "one arm in, other arm in"; "pull it down, there you go". It is through these games that he will gradually learn the names of his clothes and the actions that go with dressing. Now that he is more able to make choices you can encourage this by giving him a choice of clothes to wear. eg. "you want dress or jumpsuit today?", pretend that your baby's vocalisation is her answer "you want dress, ok".

Meal-times:

By ten months your baby will be much more independent in his eating and will enjoy trying different finger foods, such as toast fingers, slices of fruit, celery sticks. This will not only help to increase his experiences with different tastes and textures but will also enable him to

practice manipulating things with his hands and fingers. He'll have fun picking up squashed peas and other small pieces of food off the tray on his high chair. This will help to develop his pincer grasp. As we said earlier, he now enjoys picking up small things and putting them in his mouth. This is an important stage for him to go through in his motor development but it can be dangerous. What better way to let him do this safely than at meal times when your present and can keep a watchful eye on him?

Meal times are generally very social times. The evening meal in particular is a time when most families sit down together and chat about the events of the day. Don't forget to also include your baby in these activities. He'll learn so much by sitting with you while you have your meals. Often babies are fed separately from the rest of the family. Sometimes this is done, so that Mum can have her meal in peace. Maybe you could take turns in feeding baby during the evening meal, Dad one night and Mum the next. If you need to feed him before the rest of the family have their evening meal, why not give him his dessert or some finger food while your eating so that he can join in too.

Overhead 10. 20**Routine activities:**

- nappy changing time
- dressing
- bath-time
- meal times

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Now that your baby is more mobile he'll tend to follow you around the house as you go about your normal activities. He'll particularly enjoy the opportunity to go outside and play on the grass.

Gardening:

Now that he is more active he'll have lots of fun in the yard while you're doing the garden. He'll probably try to help. You'll need to watch him carefully, as he'll try to pick up bits of dirt and grass and put in his mouth. He'll have so much fun in the garden looking at the plants and flowers, listening to all the wonderful sounds that you hear out-side. While you're working, you can talk to him about what you are doing and all of the things that he can see, hear and smell.

Cooking and doing the dishes:

As you are well aware the kitchen can be a dangerous place for a baby, particularly one that is very mobile and inquisitive. Now that your baby is becoming stronger and starting to open cupboards and draws, you'll need to make sure that they are child-proofed. There is now

a large range of safety catches available which you can use to secure doors and draws. It is probably Safest for your baby to be seated in a highchair while you prepare meals (don't forget to put his harness on). This will not only keep him out of harms way but will also give him a good view of what you are doing. He'll enjoy talking to you about what your doing. You can help him to learn about foods by showing them to him as you prepare them, talking about their characteristics eg. "look, a big long carrot" "yum" "Daddy likes carrots.

The shopping:

Although shopping is a little difficult with a baby in tow, (especially one who has started to grab at everything), an occasional shopping trip is good for your baby. It is best to try to pick a time when the store isn't too crowded as most babies aren't keen on crowds. Now that your baby is able to sit up steadily, you may be able to sit him in the shopping trolley. You will need to keep a very close watch on him as he can quickly fall out and seriously hurt himself if left unsupervised. From the trolley, he can get a good view of everything that is going on. He likes the feeling of motion as you push him around the store. Talk to him as you go round and select the items off the shelves, he will even try to help you sometimes!

Reading books:

Sit your baby on your lap with the book in front of both of you. Tell your baby about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will not only help your baby to attend to specific things but will also help him to learn other skills such cause-effect relationships and turntaking skills.

Singing action songs:

Now that your baby is 10 months old, he will really start to enjoy participating in action songs. If you have been playing these for a while, he will probably start to try to carry out some of the actions himself, like wiggling his fingers to twinkle twinkle little star. He might even start to try to sing along with you. If he isn't yet trying to join in with the actions, you can help him to carry out the actions by moving his hands. After a few goes at doing this, stop half way and wait for him to do something before you continue.

Children's television programmes such as Playschool and Mulligrubs often have many action songs which you could play with your baby. He might also enjoy watching the programmes with you for short periods of time.

Here are some more actions songs for you to learn:

Round and round the garden

Round and round the garden,
like a teddy bear,
one step, two step,
tickling under there.

This little piggy went to market

This little piggy went to market,
This little piggy stayed home,
This little piggy had bread and butter,
This little piggy had none,
And this little piggy,
Went wee wee wee all the way home.

Incey wincey spider

Incey wincey spider climbed up the water spout,
down came the rain and washed poor incey out,
out came the sun and dried up the rain,
and incey wincey spider climbed up the spout again.

I'm a little teapot:

I'm a little teapot, short and stout,
Here is my handle, here is my spout.

When I get all steamed up, then I shout,
Tip me over, pour me out.

Going for walks and visiting friends:

Your baby's world is gradually expanding. Through going out for walks and visiting friends, your baby is learning that his world is not limited to your home. He is learning that the world is made up of lots of different people, in different shapes and sizes, different animals, buildings, plants and so on. Therefore it is important for both you and your baby that you don't stay at home every day. You both need to go for walks, to sit outside and to visit friends. By doing this you are enabling your baby to learn more about his world, you are providing him with opportunities to experience and learn new things.

Overhead 10.21**Everyday activities:**

- gardening
- cooking and doing the dishes
- the shopping
- reading books
- singing action song
- going for walks and visiting friends

SPECIFIC THINGS THAT MAKE LEARNING FUN:

There are other things that you can do to help your baby to learn:

To encourage listening:

(Overhead 10.22)

- talk to him about things that you are doing
- give him toys which have distinctive sounds such as a beeping toy telephone. See if he can recognise the sounds when he isn't looking.
- take him for walks so that he can hear all the different sounds in the neighbourhood, bring his attention to the different sounds he hears eg, "oh, listen dog woof"
- read books to him, make different sounds to go with the different things in the books.
- have him join in evening meals so that he can listen to your conversations.
- sing songs to him, especially action songs like *twinkle, twinkle little star*
- call him when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- make sounds to go with different toys you are playing with eg brm for a car, moo for the cow.
- make sounds with him while looking into the mirror.

To encourage looking:

(Overhead 10.23)

- give him objects with lots of detail to play with,
- point to detail in pictures, show him different things in the pictures eg the man's nose, the bird in the tree.
- sit him on your lap while you are reading, encourage him to look at what your pointing to and encourage him to point by moving his hand on the page.
- take him for walks and point out the interesting things that you see, encourage him to point too.

- sit him on your lap while you watch TV., again point out things that you see while you are watching "look, a big dog".

To encourage conversations:

(Overhead 10.24)

- talk to your baby!
- when he vocalises to you act as if you understand what he is saying and "interpret" for him eg. "you want daddy do you?"
- expect him to give you eye-contact when he wants something.
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turns should now always include vocalisations).
- remember to wait for him to vocalise before you take your turn in the conversation
- play turntaking games with toys, such as talking on a telephone, pushing a ball, pushing a car, banging on the table.
- encourage other people to talk to him
- when he is playing with toys, ask him about them
- if he looks at you while playing with his toys act as if he is telling you about them and again "interpret" for him. For example: "oh, you've got a big block" or "you're telling mummy about the car".
- if he doesn't want something, wait for him to vocalise and look at you before taking it away. Again "interpret" for him. For example: "no, I don't want any more, mummy"

To encourage Object permanence skills:

(Overhead 10.25)

- continue to play games in the bath, hiding toys amongst the bubbles
- blow bubbles in the bath, wait for him to indicate that he wants you to do it again.
- play hide and seek around the furniture, you can take turns crawling after each other.
- place blocks in different containers for him to get out, such as old nappy wipe containers, tissue boxes, tupperware, etc. Use solid containers that he can't see into so that when he puts his hand into the container he cannot see either the block or his hand.

- encourage him to put toys into containers and get them out again
- hide toys under cloths for him to uncover

To encourage problems solving:

(Overhead 10.26)

- give him toys to play with that need an adult to wind them up. Show him how it works and then wait for him to look at you or give it to you before re-activating it.
- give him different sized toys (eg balls) to play with so that he can learn when to use one hand and when to use two hands.
- place strings on toys to encourage him to pull them.
- place toys in containers with lids (eg. an old shoe box). Show him how to get the toy out and then wait for him to indicate to you that he needs your help. Later he might be able to work out how to get the toys out himself.

To encourage the development of cause and effect relationships:

(Overhead 10.27)

- give him toys to play with which require him to press a button, or push a lever to activate. Show him how they work.
- show him how to splash in the bath
- show him how to activate toys which make different sounds etc if you do different actions on them
- give him cardboard tubes to blow into to make into horns
- give him spoons to bang on different containers to make different noises.

Play videotape section: "Mum and Dad help me to learn". (00.00-00.00). Discuss....

THINGS THAT MAKE LEARNING FUN:

(Overhead 10.28)

Toys are very important to the ten month old. Toys at this age should encourage the development of problems solving skills, object permanence and cause and effect relationships. We also want to encourage his functional play. He will have hours of fun finding out what he can make his toys do.

Appropriate play materials for this age group include:

- toy cars
- large rubber animals
- a doll of some description to feed, put to bed and give a bath
- action toys which require pushing, pulling or winding to activate.
- a music box
- lots of different containers with different sorts of lids, for example, egg cartons, plastic nappy wipe containers, film canisters, plastic pavlova eggs, old tissue boxes.
- cardboard tubes out of which he can make trumpets (eg toilet rolls, old clingwrap rolls etc.)
- blocks to hold, throw, hide, stack, build
- books, baby ones, and homemade ones from cut out magazine pictures
- different size balls (to roll, throw, hide, roll)
- a toy telephone that rings
- a push trolley
- a cloth bag or old handbag with lots of interesting (but safe articles) such as coloured plastic bangles, crunchy paper, colourful lids, toilet rolls, old fashioned dolly pegs, spoons, plastic egg cups etc.

Play videotape section: "Things that make learning fun". (00.00-00.00) Discuss....

Show the parents the toys in the bag. Encourage them to play with their babies using the toys. Demonstrate....

Ask the parents if they have any questions from today's session. Discuss....

Handout and collect evaluation forms.

LEARNING TO COMMUNICATE

SESSION ELEVEN

TEACHING NOTES

INTRODUCTION:

Encourage the parents to introduce themselves to each other again. Each parent is to wear a name tag to encourage interaction. Begin the session by asking the parents if they have any questions from any of the previous sessions or handbooks. Again if you have any difficulties tell the parents that you will get back to them with an answer as soon as you can.

As with Sessions 3,5,7,9, the aim of this session is to reinforce information provided in the previous session and to increase the parents awareness of the skills their infant is developing. Therefore this session should be interactive with you facilitating the discussion. If the parents do not cover all of the points under a section, you will need to add them. In some instances you may be able to cue them using additional questioning.

DEVELOPMENT AT TEN MONTHS:

Provide the following information:

In our last session we focused on development between 10 and 12 months and the changes that occur. We will begin today's session by reviewing what we have learnt about your baby's development at this stage.

Question:

Have you noticed any changes in your baby's skills over the past month?

Ask the parents to tell the group one new thing that their baby has done since the last session. Discuss...

Question:

Have you noticed that your baby is becoming much more active and is interacting more with his environment? *Discuss...*

Comment:

We are going to watch the ten to twelve month video again. As you watch it look for things that you may have missed last time. Is your baby starting to do any of the things shown on the videotape? Remember that one of the aims of the videotapes is to increase your awareness of the skills that your baby has at this age.

Play videotape section: "Development between 10 and 12 months. See what we can do". (00.00-00.00).

MOTOR SKILLS:*(Overhead 10.1 & 10.2)***Question:**

What motor skills does a 10 months old baby have? How are these different from the motor skills of a 12 month old?

Encourage one of the parents to write down their responses on a blank overhead. Discuss..... (Use Overhead 10.1 & 10.2 to summarise)

Question:

Have you noticed any changes in you're baby's motor skills over the past month?

Parents may cover the following points:

- He is starting to move around more by himself.
- He can now get to where he wants to go by himself.
- He is now using a variety of ways of getting around, including crawling, rolling, shuffling on his bottom, and stepping around the furniture.
- He is starting to pull himself to standing
- He may have difficulty getting down once he has managed to get up
- He has developed much greater control over his hands.
- He can now reach and hold things much more easily
- He holds his toys, bangs them, rotates them, swaps them from one hand to the other, drops them, shakes and performs many other different actions on them.
- He doesn't mouth toys as much as he did when he was younger.
- He will still put toys to his mouth, but will spend more time playing with them, putting his index fingers into their small holes, banging them together, rotating them to view their various sides, shaking them etc.

Remind parents that babies will vary in the age at which they begin walking. Babies begin to walk anytime from 10-18 months.

Question:

Has your baby started to take an interest in cupboard doors and draws? *Discuss....*

Comment:

He is able to do this now as his hands become stronger and he becomes more mobile.

Question:

Does he like picking up small things with his thumb and index finger? *Discuss...*

Remind parents that because their baby will tend to pick up small things and put them into his mouth, they need to watch him very carefully at this age. Make sure the family doesn't leave little things around for him to find.

Question:

Has your baby started to drop or release toys yet?

Comment:

At this age he is only just starting to release toys.

Ask parents to tell you ways in which they can encourage his motor skills. They should cover the following points. Add any points that they do not cover. They can:

- help him to learn to balance by encouraging him to pull himself up while holding on to a small chair or small table. Practicing standing and holding on will help him to stand alone when he is stronger.
- encourage him to take his first steps by holding his hands in yours and moving slowly backward.
- encourage walking by using a baby walking trolley (that he can push). *Remind parents to choose one that is very stable.*

Discourage parents from using the type of walkers that the baby can sit in, as these tend to discourage babies from supporting their own weight and balancing. They tend to hinder walking rather than helping it.

Summarise:**Overhead 10.1****Motor Skills (at 10 months):**

- has better control over his body
- is much more mobile
- is using a variety of ways to get around - rolling, crawling, shuffling, walking around the furniture
- is using his hands much more to explore objects
- is using a variety of actions on objects
- is beginning to use his index finger
- is consistently reaching

Overhead 10.2**Motor skills (at 12 months):**

- is much more mobile
- is pulling himself up on the furniture
- enjoys walking around the furniture
- may have taken his first steps by himself
- is mainly getting around by crawling and walking
- is very co-ordinated with his hands
- uses his hands to explore new objects
- uses many different actions on objects
- is using his index finger more

LOOKING:

(Overhead 10.3 & 10.4)

Comment:

This is the age of the true explorer.

Question:

In what ways have the looking skills of the babies in the video changed over the past few months?

Parents should cover the points outlined on the overheads:

Overhead 10.3**Looking (at 10 months):**

- is exploring his environment more
- is more interested in detail, rotates objects to view various sides
- can see clearly across a room
- is still attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is using pointing and eye contact to direct attention
- is beginning to look where someone else points

Overhead 10.4**Looking (at 12 months):**

- is looking to where someone else points
- is frequently directing other people's attention by pointing
- is very inquisitive

Question:

What changes have you notice in your baby's looking skills over the past month?

Discuss....

Question:

What sorts of things does your baby like to look at? *Discuss....*

Remind parents that their baby can now easily get into places that he couldn't reach before and this can lead him into danger. Low cupboards with sharp objects or chemicals, stairs, appliance cords, the iron, table cloths dangling from the table are all things that now attract him. It is essential to ensure that he doesn't get hold of them. Cupboards need to be locked in some way, cords need to be put out of reach and stairs need to be blocked so that he can't access them..

LISTENING:

(Overhead 10.5 & 10.6)

Question:

What changes occur in the listening skills of babies between 10 and 12 months of age?

(Use Over heads 10.5 and 10.6 to summarise).

Overhead 10.5**Listening skills (10 months):**

- prefers sounds with variety
- can work out the direction from which sounds are coming
- is attracted to the human voice
- is trying to copy sounds that he hears

Overhead 10.6**Listening skills (12 months):**

- enjoys complex sounds
- is beginning to recognise different sounds and voices
- is becoming more accurate in copying sounds that he hears

Question:

Has your baby started to copy the sounds that you make? *Discuss...*

Question:

What types of sounds attract your baby's attention? *Discuss...*

Question:

What sort of music does your baby like to listen to? *Discuss...*

Question:

What does your baby do when he hears a familiar sound, like the door opening or the dogs barking? *Discuss...*

UNDERSTANDING OF THE WORLD:**Comment:**

Over the last 10 months, your baby's knowledge of the world has significantly increased. His whole world is growing rapidly each day.

Object Permanence:

(Overhead 10.7 & 10.8)

Question:

Has your baby started to find objects that are hidden under a cloth or search for toys that have fallen from his view? *Discuss...*

Question:

Have you started to hide toys in containers or bags for him to find?

Comment:

He'll enjoy putting his hand into the containers or bags to get out the toys. This is a good game for encouraging the development of this object permanence.

Question:

Have you tried playing hide and seek yet? *Discuss...*

Comment:

If your baby hasn't yet developed this skill, you can also help him by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also hide toys in the bath, help him to hold toys under the water and then search for them.

By 12 months he will easily recognise favourite toys and people and will direct attention to them.

Summarise:**Overhead 10.7****Object Permanence (at 10 months):**

- cries when you leave his sight
- has developed little "images" of familiar people/objects in his mind
- searches for objects that fall out of sight or that are partially hidden
- uncovers hidden objects

Overhead 10.8**Object Permanence (at 12 months):**

- easily recognises familiar objects and people
- plays hide and seek

Cause-effect relationships:

(Overhead 10.9 & 10.10)

Your baby is still learning about cause-effect relationships. Every day he is learning more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

Question:

Have you noticed him trying to work out what causes things to happen? *Discuss...*

Comment:

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, for example, giving him toys that he can easily activate and by responding to his actions.

By 12 months he will have a much better understanding of the effects he has on his environment. He will know how to attract your attention using his body and objects around him. He will repeat things that other people laugh at, sometimes much to your dismay!

Summarise:**Overhead 10.9****Cause and effect relationships (10 months):**

- knows that he can make things happen through his actions
- is able to easily activate simple toys such as a roly-poly
- is starting to be able to re-activate more complex toys

Overhead 10.10**Cause and effect relationships (at 12 months):**

- enjoys re-activating more complex toys
- enjoys watching the effects of his actions
- repeats actions that make people laugh

Problem solving:

(Overhead 10.11 & 10.12)

Question:

Have you noticed your baby trying to solve little problems? *Discuss...*

Question:

Does he use other people to help him to get what he wants? *Discuss...*

Comment:

By twelve months he will have learnt that he can get you to make interesting things happen again. For example, he will hand you a wind up toy to make it play again.

There are so many little problems that he will learn to solve each day. It is great fun learning how to solve problems! He will learn that if he is holding something in both hands, he needs to drop one in order to pick up a third toy; or that he has to push one object out of the way to get another one, or pull a cloth to get what is on top of it; or pull a string to get a toy tied to it.

Summarise:**Overhead 10.11****Problem Solving (10 months):**

- gradually increasing
- will crawl to get something that he wants
- turns away from things that he doesn't want
- has developed a connection between people/objects
- now realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- often uses tools such as strings/cloths to get what he wants (eg. pulling a string to get a toy)
- learning to solve lots of different problems

Overhead 10.12**Problem solving (12 months):**

- spends much of the day solving little problems
- recognises that he can signal to other people to help him to get what he wants
- is much more independent

Imitation:

(Overhead 10.13 & 10.14)

Question:

Has your baby started to copy the sounds and actions that you make? *Discuss...*

Comment:

It is through imitation that your baby learns the words that we use to communicate to each other. You can play copying games anywhere: in the bath, splashing or pouring water, banging on the table, pulling different faces.

Summarise:**Overhead 10.13****Imitation (10 months):**

- able to copy simple actions such as banging
- able to copy simple sounds
- starting to copy more complex actions and sounds.

Overhead 10.14**Imitation (12 months):**

- able to copy more complex sounds
- beginning to copy words, although not accurately
- enjoys copying more complex actions eg. those which go with songs such as twinkle twinkle little star

Play:

(Overhead 10.15 & 10.16)

Question:

What changes have you noticed in his play over the last few months? *Discuss...*

Comment:

It is through play that your baby learns about his world. Remember that initially your baby only used a few actions when playing with objects, such as holding them or mouthing them. Now he has greater control over his hands and is able to attend more to the detail in toys. Also

notice that he uses a lot more variety in the actions he uses on objects, rotating them inspecting their various sides, shaking rattles, pushing buttons, pulling strings and cloths, fingering holes and other details, crumpling paper.

Question:

Has he started to combine objects? *Discuss...*

Comment:

Containers such as card board boxes, egg cartons and ice cream containers make great toys. He can put lots of different things in them like dolly pegs, old keys, empty cotton reels and some of his blocks. An old tissue box makes a great post-box.

Summarise:

Overhead 10.15

Play(10 months):

- much more interested in toys
- using more variety in his actions on objects
- starting to combine objects, putting things in, taking them out

Overhead 10.16

Play (12 months):

- is combining toys more in his play, putting toys in and out of containers
- using more variety in his actions
- beginning to use functional play, for example, pushing a small car, making a toy cow walk

COMMUNICATION SKILLS:

(Overhead 10.17 & 10.18)

Question:

What changes have you noticed in his communication skills? *Discuss...*

Comment:

Remember that you can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quiet times to experiment with sounds.

Question:

What communication functions does your baby use? *Discuss...*

Comment:

Now that he has developed a connections between people and objects, you will notice that he is using a greater range of functions in his communication attempts. He will now request objects and actions, he will comment on things as he plays, he will reject actions and things that he doesn't want.

Question:

What signals does your baby use to tell you that he wants something? *Discuss...*

Question:

How does your baby tell you that he doesn't want something? *Discuss...*

Comment:

At around 12 months your baby may begin using his first words to signal to you in his communicative attempts. This is one of your baby's most exciting achievements. He will start to use words to express all the different functions he previously expressed non-verbally, that is with actions and general vocalisations. He is learning the power of words!

Question:

Does your baby appear to understand any particular words. *Discuss...*

Comment:

Your baby is learning to associate the words he hears with the things in his environment. Watch as he searches when daddy's name is spoken. Through your conversations with him, he is learning the connection between words and objects, actions and people. By 12 months, he might be able to point to his nose or to the dog if you ask him. He might even be able to follow some simple instructions such as "give me the ball".

Question:

What turn taking games do you play with your baby? *Discuss...*

Comment:

Remember that playing turn-taking games, such as peek-a-boo or pat-a-cake or playing turn-taking games with toys such as a ball or telephone, helps him to develop his turn-taking in conversations.

Question:

Is he starting to direct your attention? How does he do this? *Discuss...*

*Summarise:***Overhead 10.17****Communication (at 10 months):**

- eye contact is continuing to improve
- using toys to get your attention
- is now aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy the sounds and actions that you make more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth
- beginning to understand some familiar words

Overhead 10.18**Communication (at 12 months):**

- is understanding more words
- is starting to copy more sounds and words
- may have said his first word!
- enjoys directing your attention, has a good pointing finger.
- enjoys experimenting with sounds
- is combining sound more with his play with toys

Play video tape section: Development at 10 months. See what I can do. (00.00-00.00). Discuss...

HELPING YOUR BABY TO LEARN:

Comment:

As you have learnt over the past 10 months, everything you do can help your baby to learn.

WHERE SHOULD BABY PLAY:

Question:

Where does your baby like to play? **Discuss....**

Comment:

Remember that it is important that your baby has the opportunity to play in a variety of environments each day.

Overhead 10.19

Where should baby play:

- near you
- in a variety of environments

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Question:

Do you feel that you are wrestling a wriggling worm when you're changing nappies or undressing your baby? **Discuss....**

Nappy changing time:

Question:

Does your baby like to have a chat with you while you change his nappy? **Discuss....**

Bath-time:

Question:

What does your baby do in the bath? **Discuss....**

Question:

What sorts of games can you play in the bath to help his development? **Discuss....**

Dressing:**Question:**

What do you talk about when you are dressing your baby? *Discuss...*

Comment:

Continue to talk to him about what you are doing, eg. "daddy putting singlet on "; "one arm in, other arm in"; "pull it down, there you go". It is through these games that your baby will gradually learn the names of his clothes and the actions that go with dressing. Now that he is more able to make choices, you can encourage him by giving him a choice of clothes to wear, eg. "you want dress or jumpsuit today?", pretend that your baby's vocalisation is his answer : "oh, you want dress. Okay".

Summarise:**Overhead 10.21****Everyday activities:**

- gardening
- cooking and doing the dishes
- the shopping
- reading books
- singing action song
- going for walks and visiting friends

Meal-times:**Question:**

Does your baby have at least one meal a day with you? *Discuss...*

Comment:

Your baby can learn so many things by being with you at meal times. Remember that meal times are generally very social times. The evening meal in particular is a time when most families sit down together and chat about the events of the day. Don't forget to also include your baby in these activities. He'll learn so much by sitting with you while you have your meals. Often babies are fed separately from the rest of the family. Sometimes this is done so that Mum can have her meal in peace. Maybe you could take turns in feeding your baby during the evening meal, Dad one night and Mum the next. If you need to feed him before the rest of the family have their evening meal, why not give him his dessert or some finger food while you are eating so that he can join in too.

Question:

Has your baby started to feed himself finger foods? *Discuss...*

Comment:

At this age babies like to try to be a little more independent in their eating. Trying different finger foods, such as toast fingers, slices of fruit, celery sticks, will not only help to increase his experiences with different tastes and textures but will also enable him to practice manipulating things with his hands and fingers. He'll have fun picking up squashed peas and other small pieces of food off the tray on his high chair. This will help to develop his pincer grasp. As we said earlier, he now enjoys picking up small things and putting them in his mouth. This is an important stage for him to go through in his motor development but it can be dangerous. What better way to let him do this safely than at meal times when you are present and can keep a watchful eye on him?

Overhead 10. 20**Routine activities:**

- nappy changing time
- dressing
- bath-time
- meal times

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:**Question:**

Does your baby like to follow you around the house as you go about your normal activities? *Discuss....*

Question:

What songs do you sing with your baby? *Discuss...*

Question:

Has he started to watch any television programmes? *Discuss....*

SPECIFIC THINGS THAT MAKE LEARNING FUN:

Place a blank overhead on the projector, encourage the parents to tell each other what activities they have used over the past month to encourage each of these skills and how useful they have been. Have one of the parents write them down on the overhead. Add any of the following if they haven't been covered in the parents response.

To encourage listening:

(Use Overhead 10.22 to summarise if you need to).

Question:

What sorts of things have you been doing to help to develop your baby's listening skills?

- talk to him about things that you are doing
- give him toys which have distinctive sounds such as a beeping toy telephone. See if he can recognise the sounds when he isn't looking.
- take him for walks so that he can hear all the different sounds in the neighbourhood, bring his attention to the different sounds he hears eg, "oh, listen dog woof"
- read books to him, make different sounds to go with the different things in the books.
- have him join in evening meals so that he can listen to your conversations.
- sing songs to him, especially action songs like *twinkle, twinkle little star*
- call him when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- make sounds to go with different toys you are playing with eg brm for a car, moo for the cow.
- make sounds with him while looking into the mirror.

To encourage looking:

(Use Overhead 10.23 to summarise if you need to)

Question:

What can you do to encourage looking at this age?

- give him objects with lots of detail to play with,
- point to detail in pictures, show him different things in the pictures eg the man's nose, the bird in the tree.
- sit him on your lap while you are reading, encourage him to look at what your pointing to and encourage him to point by moving his hand on the page.

- take him for walks and point out the interesting things that you see, encourage him to point too.
- sit him on your lap while you watch TV., again point out things that you see while you are watching "look, a big dog".

To encourage conversations:

(Use Overhead 10.24 to summarise if you need to).

- talk to your baby!
- when he vocalises to you, act as if you understand what he is saying and "interpret" for him eg. "you want daddy do you?"
- expect him to give you eye-contact when he wants something.
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turns should now always include vocalisations).
- remember to wait for him to vocalise before you take your turn in the conversation
- play turntaking games with toys, such as talking on a telephone, pushing a ball, pushing a car, banging on the table.
- encourage other people to talk to him
- when he is playing with toys, ask him about them
- if he looks at you while playing with his toys act as if he is telling you about them and again "interpret" for him. For example: "oh, you've got a big block" or "you're telling mummy about the car".
- if he doesn't want something, wait for him to vocalise and look at you before taking it away. Again "interpret" for him. For example: "no, I don't want any more, mummy"

To encourage Object permanence skills:

(Use Overhead 10.25 to summarise if you need to).

- continue to play games in the bath, hiding toys amongst the bubbles
- blow bubbles in the bath, wait for him to indicate that he wants you to do it again.
- play hide and seek around the furniture, you can take turns crawling after each other.

- place blocks in different containers for him to get out, such as old nappy wipe containers, tissue boxes, tupperware, etc. Use solid containers that he can't see into so that when he puts his hand into the container he cannot see either the block or his hand.
- encourage him to put toys into containers and get them out again
- hide toys under cloths for him to uncover

To encourage problems solving:

(Use Overhead 10.26 to summarise if you need to).

- give him toys to play with that need an adult to wind them up. Show him how it works and then wait for him to look at you or give it to you before re-activating it.
- give him different sized toys (eg balls) to play with so that he can learn when to use one hand and when to use two hands.
- place strings on toys to encourage him to pull them.
- place toys in containers with lids (eg. an old shoe box). Show him how to get the toy out and then wait for him to indicate to you that he needs your help. Later he might be able to work out how to get the toys out himself.

To encourage the development of cause and effect relationships:

(Use Overhead 10.27 to summarise if you need to).

- give him toys to play with which require him to press a button, or push a lever to activate. Show him how they work.
- show him how to splash in the bath
- show him how to activate toys which make different sounds etc if you do different actions on them
- give him cardboard tubes to blow into to make into horns
- give him spoons to bang on different containers to make different noises.

Play videotape section: "Mum and Dad help me to learn". (00.00-00.00). Discuss...

THINGS THAT MAKE LEARNING FUN:

(Overhead 10.28)

Question:

What are the characteristics that toys should have for this age group? *Discuss....*

Question:

What sorts of toys should children have at this age? *Discuss....*

Parents should include the following:

- toy cars
- large rubber animals
- a doll of some description to feed, put to bed and give a bath
- action toys which require pushing, pulling or winding to activate.
- a music box
- lots of different containers with different sorts of lids, for example, egg cartons, plastic nappy wipe containers, film canisters, plastic pavlova eggs, old tissue boxes.
- cardboard tubes out of which he can make trumpets (eg toilet rolls, old clingwrap rolls etc.)
- blocks to hold, throw, hide, stack, build
- books, baby ones, and homemade ones from cut out magazine pictures
- different size balls (to roll, throw, hide, roll)
- a toy telephone that rings
- a push trolley
- a cloth bag or old handbag with lots of interesting (but safe articles) such as coloured plastic bangles, crunchy paper, colourful lids, toilet rolls, old fashioned dolly pegs, spoons, plastic egg cups etc.

Play videotape section: "Things that make learning fun". (00.00-00.00) Discuss...

Show the parents the toys in the bag. Encourage them to play with their babies using the toys. Demonstrate.....

Ask the parents if they have any questions from today's session. Discuss...

Hand out and collect evaluation forms.

LEARNING TO COMMUNICATE

PROGRAMME OUTLINE

PARENT HANDBOOK

This programme was specifically developed to help you to understand how your baby learns to communicate and how you can encourage that development. It covers normal development from birth to twelve months and includes information on all aspects of development which have a significant impact on communication development.

The aims of the programme are:

- Provide you with information on the normal development of communication.
- To provide you with information on things that you can do to encourage your baby's development.
- To provide you with information on the types of toys and play materials that are appropriate at each stage of your baby's development.
- To give you the opportunity to practice and discuss these things.

Structure of the Programme:

The programme consists of 12 monthly sessions commencing when your baby is one month old and finishing when your baby is 12 months old. It is divided into 6 main parts according to age groups.

PART 1:	Session one Introduction. Development from Birth to one month
PART 2:	Sessions two and three Development from two to four months.
PART 3:	Sessions four and five Development from four to six months.
PART 4:	Sessions six and seven Development from six to eight months.
PART 5:	Sessions eight and nine Development from eight to ten months.
PART 6:	Sessions ten and eleven Development from ten to twelve months.
CONCLUSION:	Session 12

Each part is divided into 3 sections:

- ◆ **Normal Development**
- ◆ **Helping your baby to learn**
- ◆ **Things that make learning fun.**

Video- tapes accompany each part. If you have questions about any part of the programme, please discuss them with your speech pathologist or early childhood nurse.

LEARNING TO COMMUNICATE

SESSION ONE

PARENT HANDBOOK

INTRODUCTION:

Your baby began learning about his new world from the day that he was born. Over the next 12 months, he will learn many things that will have a major effect on the rest of his development. He is like an explorer who is on a voyage of discovery. Along the way, he will soon begin to learn to use his senses of taste, touch, smell, hearing and sight in order to make sense of this exciting new world.

One of the most important things that he will learn is how to communicate. Many people mistakenly think that babies don't begin to communicate until they start to talk in single words. This is not the case. By the time your baby has his first birthday, he will have learnt all of the main rules of communicating.

WHAT IS COMMUNICATION?

Although we all communicate to each other every-day, we rarely stop to think about what it is and why it is so important to us. Without communication we wouldn't be able to interact with our family and friends, we wouldn't be able to work and we certainly wouldn't be able to share a joke. Can you imagine your life without communication?

Communication is:

any means by which a person exchanges a message with another person.

It is important to realise that speech is not the only way that we communicate. We also communicate by writing, drawing, making gestures, facial expression, our body language, our tone of voice and even how close we stand to people.

Think of all the different ways that you communicate each day. Write them down:

It is also important to think about why we communicate with each other. Basically, communication is a way of achieving our goals. By communicating, we can get things that we want such as objects and information; or we can get people to do things for us.

Although language is the main way that we communicate to each other, the other ways of communicating are just as important. We often use a variety of different ways of communicating to convey a message, for example, drawing a map while giving directions.

Babies first learn to communicate non-verbally, that is without language. Your baby will first learn the functions of communication, for example, to request a toy, and will then gradually develop the language skills to express those functions.

COMMUNICATION FUNCTIONS:

There are three main functions which form the basis of most of our later communication. These are requesting, informing and rejecting.

➤ **Requesting:**

This is basically asking someone for something. We can request objects (such as biscuits); actions (such as asking someone to drive us to the shop) and information (such as asking the name of an object)

➤ **Informing:**

This is giving information about objects, people and events (such as telling someone that its very cold outside). It includes commenting about things, showing things and answering questions.

➤ **Rejecting:**

This is indicating that you either don't want something, don't want to do something or that you disagree with something.

Communicative functions:

- requesting
- informing
- rejecting

Your baby will first learn to communicate these functions with his body movements, actions and vocalisations.

EARLY COMMUNICATION SKILLS:

Three skills which are essential to communication development in the first 12 months are eye contact, joint attention and turn-taking.

➤ Eye contact:

You will notice that from a very early age that your baby is attracted to your eyes. When your baby makes eye contact with you, it makes you feel that he wants to talk to you. This is because eye-contact signals to us that someone is "ready" to communicate with us. Think about how you feel when you are talking to someone who doesn't make eye-contact with you, someone who looks all around the room and never at you. Basically you feel that the person isn't interested in talking to you. You probably also feel very uncomfortable with that person.

The first step in communicating with someone effectively is to make eye-contact with them. By doing this we know that the person is ready to communicate, that he listening to what you are going to say. Eye contact is also used to direct someone's attention.

Your baby will first learn to communicate by using his eye contact to indicate to you what he wants. Later he will begin to combine actions and vocalisations with his eye-contact in order to communicate with you.

➤ Joint Attention:

Joint attention is attending to something at the same time as some one else. Without it people would never talk about the same things. In order to have an effective conversation, we need to talk about the same topic. For example, it would be strange if you and I were having a conversation and I talked about the weather while you talked about what you did last week.

Your baby will learn to communicate through his joint activities with you. Through play, your baby will first learn to attend to objects or toys that you place in front of him. He will

then begin to use his hands to direct his own attention to things and will begin to follow where you point. By 12 months, he will have learnt how to direct your attention by pointing and will even begin to look where you look.

➤ **Turn-taking:**

In order to have a conversation, we need to be able to take-turns. Turn-taking begins very early in your baby's development. Initially your baby will simple use general body movements as his turn. As you interact and talk to him you will notice that he will look at your face intently. He will go very quiet and still while you talk and will begin to move around when you stop. At first there will be a little overlap with your turns but as he develops his turns will become more definite. It is essential that you give your baby the opportunity to take turns early in his development. You can do this be "waiting" after you've said something so that he has the chance to respond. Babies need time to respond.

As your baby develops, his turns will become more like yours. When you talk to him, he will tend to use vocalisations more and when you do actions, he will also tend to respond with actions. Games such as pat-a-cake are very good for encouraging turn-taking.

Important skills for communication development:

- eye contact
- joint attention
- turn-taking

DEVELOPMENT AT BIRTH

It would be easy to think that your new baby does little other than to sleep and feed all day, but if you watch him carefully, you will notice that he can actually do many things. Your baby started to develop skills while still in the uterus. Most of his early skills are there to help him to survive.

MOTOR DEVELOPMENT:

Your new born baby has very little control over his body. He is unable to support his own head and most of his early movements are governed by his reflexes. These reflexes are present to help him to survive. He has rooting and sucking reflexes to help him to feed and gag and

cough reflexes to protect his airway. He has many other reflexes which are also important to his development. Your doctor will check these when your baby is 6-7 weeks old.

The "rooting reflex" is very important for helping your baby to attach to the breast or a bottle. It can be activated by stroking the side of his face. When you do this he will turn his head toward that side and open his mouth, particularly on the side he was touched. You should always try to activate this reflex when you are about to feed your baby.

He also has a "sucking reflex" which is activated when anything is put into his mouth, particularly if it touches his palate. Like you, your baby has "cough" and "gag" reflexes to stop food going the wrong way.

Although his movements are random at first, he will quite quickly begin to gain more control over them, he will move his limbs more and will begin kicking. He will also start to straighten up, trying to lift his head.

His hands will tend to be closed at first and will gradually begin to open up more as he starts to touch things that are around him, his clothes, your clothes, your face.

Motor Skills:

- unable to support his head
- body movements are random and controlled by reflexes
- hands are closed

LOOKING:

At this age your baby can see 7 -10 inches away. Anything further away than this is a "blur" to your baby. He is unable to make out fine detail, seeing only the main parts of things. He is very attracted to bright colours such as yellow and red and particularly likes objects which have contrasts of colour. He is even able to follow bright objects briefly with his eyes. He will quickly become fascinated with your eyes because they are so different from the rest of your face and are just the right distance away from him when you are feeding him.

Looking skills:

- can focus 7-10 inches from face
- is attracted to bright colours
- is attracted to contrasts
- will fix on and follow bright objects briefly

LISTENING:

At this age your baby is very sensitive to noise and will startle to loud noises. You will find that he is attracted to human voices very early and will settle to soothing voices and music. Your baby is too young to be able to locate where sounds are coming from. Your early childhood nurse will regularly screen your baby's hearing.

Listening skills:

- startles to loud noises
- is attracted to voices
- is attracted to music

UNDERSTANDING OF THE WORLD:

Your baby is beginning to learn about his new world through touching, tasting, smelling, feeling, listening and looking. As his senses develop he is able to explore his surrounding more. Each day his experiences are adding to his knowledge about how the world works. At this stage he is simply reacting to things that are happening around him.

Understanding of the world:

- has little understanding yet
- reacts to what is happening around him

COMMUNICATION SKILLS:

As you are aware, your new born baby is unable to communicate with you, however, he has already begun to develop skills (such as looking, giving you eye-contact and listening) which will help him to communicate. Your baby will soon begin to take-turns when you are talking to him. See how he wriggles around when you stop talking. This is the beginning of his journey toward communication.

Early communication skills:

- primitive turn-taking using general body movements
- is attracted to eyes
- is starting to attend to objects

HELPING YOUR BABY TO LEARN

Everything that you do can help your baby to learn. You don't have to set aside a special times of the day to "teach" your baby, he is learning all of the time. He learns best simply by being with you and having the opportunity to experience new things.

WHERE SHOULD BABY PLAY:

You need to lie your baby in different positions for short periods during the day to help to strengthen his muscles. Lying him on his tummy will help to encourage him to lift his head up and will help to strengthen his neck and back muscles. Lying him on his back will encourage him to move his arms and kick his legs. It will also allow him to move his head from side to side easier and to follow objects. Different positions give him different views of the world and allow him to better explore his environment.

Where should baby play:

- near you
- in a variety of positions each day to help strengthen his muscles

ROUTINE ACTIVITIES WHICH HELP BABY TO LEARN:

There are several routine activities that you carry-out with your baby every day which provide ideal opportunities for you to interact with your baby.

Routine activities:

- feeding
- nappy changing
- bath time

Feeding:

You probably feel that besides sleeping, your baby does little else but feed. It is during feeding that your baby has the best opportunity to interact with you. During feeds your face is close to your baby's. He can look at your eyes, hear your voice as you talk to him and feel you close to him. Your baby likes to be held firmly against you so that he can feel your heart beat. In this position he feels secure and comforted.

Nappy changing:

You have many nappy changes to look forward to in the next 12 months, so its important to make the most of them. Nappy changes not only provide you with a good opportunity to have a chat to your baby but also to monitor his motor development.. Talk to him about how he is growing and moving his body, remember to lean over him so that he can focus on your face. If your too far above him, you'll be a blur. You will notice that he will begin pushing and kicking more with his legs. Encourage him to have kicks with his nappy off.

Bath-time:

Like nappy changing, bath-times give you the opportunity to see how your baby is developing. Although babies tend to enjoy their baths, they don't take kindly to being dressed and undressed. You will most likely find that your baby will move his legs and arms around a lot in the water and will find it quite relaxing. Again it is good to get into the habit of talking to your baby while you are bathing and changing him.

SPECIFIC ACTIVITIES THAT HELP YOUR BABY TO LEARN:**To encourage conversations:**

It is never too early to begin having conversations with your baby. Here are some ways that you can help your baby to learn how to have a conversation:

- ensure that your baby is close enough to you to see your face!
- talk to him during all your routine activities such as bathing, nappy changing dressing
- remember to give your baby the opportunity to respond to you. Wait for him to respond before you continue to talk.
- remember that initially he will take turns using general body movements
- use a lot of inflection in your voice as your baby is more attracted to variations in sound.

To encourage listening:

It is important to give your baby the opportunity to respond to different sounds. You will find that he will respond differently to different sounds. He will startle to loud sounds and will settle to others especially your voice or music. Here are some ways that you can encourage your baby to listen:

- sing while gently rocking your baby in time to the music
- speak softly while you are bathing or feeding him
- avoid sudden loud noises
- gently shake different sorts of noise makers eg. rattles, bells
- sing him lullabies and simple rhymes
- activate a music box
- play different sorts of music

To encourage looking:

There are many things that you can do to encourage your baby's looking skills. Again many of these things can be done during routine activities. Here are some things to encourage looking:

- put objects 7-10 inches away from baby's face, tilt them so that he can see them properly
- attach toys, mobile to the sides of the cot
- change toys regularly
- pick toys, pictures with bright contrasting colours
- ensure that your face is close to his to encourage him to look at you while you are talking to him
- hold a bright toy above baby's face and move it to attract his attention, slowly move the toy from side to side, to encourage him to follow it with his eyes.
- place a mobile over your baby's cot

To encourage touching:

You can encourage your baby to touch and explore his environment by doing the following:

- touch your baby's face with your hands
- use a washer during bath times, to brush over baby's face and body
- massage baby, stroking his arms, legs, body and face
- kiss baby's hands, let him feel your face and mouth
- touch baby's palms with objects and cloths of different textures (rattles, face cloths, toys)
- dress baby in cloths made of different materials or with different textures on them
- wear clothes with different textures, encourage baby to touch them (eg a soft scarf and a woollen jumper)

THINGS THAT MAKE LEARNING FUN

At this age your baby isn't able to play with many things as he hasn't yet sufficient control over his body. You are the best and most accessible toy that he has at this stage. As your baby begins to develop, he will begin taking more notice of this around him. The toys that you introduce at this age should encourage:

- **listening,**
- **looking,**
- **touching.**

Appropriate toys for this age group are:

- noise makers such as small rattles
- music boxes and chimes
- bright and contrast coloured mobiles and pictures
- toy frames for bassinets and frazer chairs
- play mats with a variety of different textured panels
- wrist rattles
- teethers
- soft small toy animals with different textures

LEARNING TO COMMUNICATE

SESSION TWO

PARENT HANDBOOK

DEVELOPMENT AT TWO MONTHS

At this age, much of your baby's day is spent sleeping or feeding, although, he is beginning to spend more and more time awake. During these waking times he is starting to take more notice of the world around him.

MOTOR DEVELOPMENT:

Although his muscles have grown stronger over the last two months, he still does not have very much control over them. You will have noticed that although he is moving his arms and legs more, his movements are still quite random.

He likes to watch his own movements, but he hasn't yet realised that he is actually making them! At first you might see him looking at one of his outstretched hands for a moment or his foot while your changing his nappy.

He is now able to hold his head up for short periods, and when he lies on his back, he can look upward for some time without his head flopping to the side.

Although his hands are now much more open, he isn't able to hold objects placed in them and hasn't yet started to reach for things.

Motor skills:

- muscles are stronger
- is more active, kicking, moving arms around
- movements are still random
- is able to hold his head up for short periods
- hands are more open
- is unable to hold objects placed in hands

LOOKING:

Even though your baby is still only able to see relatively short distances away, he is starting to take much more interest in things around him. He is beginning to follow moving objects briefly with his eyes. He is also starting to become quite fascinated with bright objects. Soon he will start to stare for quite long periods at objects out of reach. He has started to develop a keen interest in faces, particularly mouths and eyes.

When you go out for walks you will notice that he is starting to take more interest in things, particularly things that move, such as, people moving past his pram or the movement of trees in the wind.

Looking skills:

- is more interest in surroundings
- is able to briefly follow moving objects with eyes
- is fascinated by bright colours
- is interested in faces, particularly eyes & mouths

LISTENING SKILLS:

Sounds are very important to your baby at this age. Because he is unable to move around, he depends on his sight and his hearing to explore his environment. Although he still startles to loud noises, he is much more attentive to sounds that occur around him. He is particularly interested in voices at this age. He will quieten and often stop sucking when he is spoken to. Because he is too young to be able to work out where sounds are coming from, he will not try to search for them.

Listening skills:

- depends on sounds to explore his environment.
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds
- startles to loud noises.
- attends more to sounds
- is interested in voices
- quietens and stops sucking when spoken to
- is unable to localise sounds

UNDERSTANDING OF THE WORLD:

As you are aware, your baby's knowledge about the world in which he lives is still very limited. Each day he learns a little more to add to his jigsaw puzzle. At this stage your baby is starting to develop little goals, that is, he has started to realise that there are things that he wants. His understanding of the world hasn't yet developed enough for him to work out how he can get these things. You will see him staring at objects for quite long periods. You can imagine him saying: "I'd really like that but how can I get it?". He doesn't yet know that he can use his body or other people to get things that he wants, even things that are in reach.

At this age he doesn't yet have an understanding of cause and effect relationships. Although he can notice changes occurring around him, he doesn't yet know how to produce changes himself.

His play is very limited at this age because he doesn't yet have enough control over his hands to hold toys or to manipulate them. He does, however, like to look at toys and bright objects. You can encourage his interest by hanging toys from a frame or across his crib. Hanging frames are very useful for babies at this age.

Understanding of the world:

- understanding is very limited
- is beginning to develop goals
- is unable to work out how to get what he wants
- notices changes around him
- play is limited

COMMUNICATION DEVELOPMENT:

Your baby is beginning to be much more responsive and communicative by this age. You will notice that he really enjoys having conversations with you. The importance of eye contact is something your baby learnt weeks ago. When you are talking to him, notice how he looks at you and smiles. Encourage him to participate in your conversations by taking turns with him. Although he can't talk yet, he can take turns by simply moving his body. Sometimes he might also vocalise during his turn. His vocalisation will mostly consist of open mouth sounds like "ah" or grunting sounds. This is because he hasn't yet developed very much control over his mouth. You might hear him practicing different sounds in his cot when he first wakes up.

Communication skills:

- is more responsive
- enjoys conversations
- maintains good eye contact when spoken to
- takes turns with general body movements
- vocalisations limited to open mouth sounds
- is starting to practice sounds

HELPING YOUR BABY TO LEARN

It is important to remember that you provide your baby with opportunities to learn new things by simply having him with you while you undertake your normal, everyday activities. It

is good to set aside a little time each day to have a quiet time with your baby, however there are many routine things you do each day which can help your baby to learn.

WHERE SHOULD BABY PLAY:

Now that your baby is taking more notice of things, it is a good time to introduce him to a reclining chair. These provide good support for baby and enable him to have a good view of things around him. You can move the chair around the house with you so that he can watch what is going on. Remember, it should never be placed on a table or work bench. Always use the harness to secure your baby in the reclining chair.

A rug or sheet that you can spread out on the floor is essential for this age group. Remember it is important to continue to lie your baby in different positions during the day. This will help to strengthen his muscles and will also give him different views of the world. While laying on his tummy, he can practice lifting up his head and looking around.

Where should baby play:

- near you
- in a reclining chair
- in a variety of positions each day

ROUTINE ACTIVITIES THAT HELP BABY TO LEARN:

Don't forget that there are many routine activities that you do with your baby everyday which provide important opportunities for him to learn and interact with you.

Feeding:

Feeding is still one of the most special times of the day that you spend with your baby. It provides you with an ideal opportunity to develop your relationship with him. While being held close to you during his feed, he can feel your heart beat, the warmth of your body and can clearly see your face. Make the most of these times by using them to communicate with your baby. Talk to him quietly about his day, how he is growing or even use the time to quietly sing him a lullaby. Your baby will learn a great deal from these quiet times together.

Nappy changing time:

By this stage you probably feel that you do little else but change nappies! Nappy changing does not have to be an unpleasant chore, that you have to do as quickly as possible. Of course

there will be times where you will need to rush, however, at other times use it as a special time to spend with your baby. You will find that now your baby is more alert and responsive, nappy changing can be quite enjoyable. It provides a wonderful opportunity to talk to him, to play with him and to simply be with him.

Remember that you will still need to lean over him so that he can clearly see your face. Again, talk to him about what he is doing, how he is growing. Although he can't understand the words you are saying, he will respond to how you are saying them. Nappy changing times will also give him the opportunity to have kicks without his nappy on.

Bath-time:

At this age baby still may not always be keen to be undressed and dressed. Generally your baby will find the warm water very relaxing. He can kick and move his arms freely in the water. Remember to talk to him as you bath and dry him. It is through these conversations that your baby will learn about his body parts and his actions. He is also learning many other skills such as taking turns, attending to the same thing.

Routine Activities:

- feeding
- dressing
- bathing

EVERYDAY ACTIVITIES THAT HELP BABY TO LEARN:

Now that your baby is taking more notice of things around him, you can place his reclining chair near you while you perform your normal daily activities. For example, he'll be very interested in the things he can see and smell and hear in the kitchen while you prepare dinner. When the family are sitting down to dinner, don't forget to include baby. He will enjoy being with you, listening to your conversations, and even participating at times.

He will also enjoy going outside for short periods of time. At this age you can begin lying him on a rug or in his reclining chair on the grass. Talk to him about the things he can hear and see outside, such as the birds flying over head, the trees and the colour of the flowers. Talk about things in which you notice he shows interest. For example, if he stares at the dog, talk to him about it and pretend that he is talking back to you.

He will also start to take more notice of things around him as you take him out in his pram. Try to go for a walk at least once a week. It will be good exercise for you and a great adventure for him. Again, don't forget to talk to him about all of the things that you can see and hear as you go.

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage conversation:**

By this age your baby is becoming more alert and responsive. Through your conversations with him, he will learn so many things. Here are some more ways that you can help your baby to learn how to have conversations:

- remember that your baby needs to be able to see your face while you talk to him.
- talk to him during your routine activities with him. You don't need to set aside "special" times to talk to him.
- use variety in the tone and inflection of your voice.
- give him the opportunity to take a turn in the conversation. Initially accept any movement or sound as his attempt to have a turn. The more you do this, the more deliberate his turns will become.
- pretend that he is talking to you! When he makes sounds, talk back to him as if he is starting up a conversation with you. By doing this, you are reinforcing the sounds that he makes.
- remember to give him eye contact when you talk to him.
- encourage other people to talk to him. This will help him to become familiar with other people and will also add to his general experiences.

To encourage listening:

Now that he is becoming more alert, you will notice that he is taking more notice of the different sounds around him. Continue to add to his listening experiences:

- introduce him to different sounds in his environment by moving him around the house to where all the activity is.
- sing him songs, lullabies and simple rhymes with actions.
- show him brightly coloured rattles with different noises. Move them in front of him while they rattle.
- place a music box or pull musical toy in front of him and activate. When the sound stops, wait for him to respond before activating it again.
- play different types of music on the radio or record player.

To encourage looking:

At this age, your baby is very attracted to bright colours. He is particularly interested in things which have distinctive contrasts in shapes and colours such as black and white, red and blue.

- remember that baby can see objects best 20- 30 cm from his face.
- hang toys from a frame over his reclining chair or cot. Place them close enough for him to accidentally touch them if he moves his hand, This will also encourage him to reach.
- place bright prints or magazine pictures on the wall near his cot, at eye level.
- move bright objects in front of him to encourage him to follow them with his eyes.
- sit him up on your lap or in his reclining chair or hold him upright in your arms to give him a better view of his environment.

To encourage touching:

Although he doesn't have a lot of control over his hands as yet, he is beginning to use his hands more to explore his environment. You can encourage this:

- continue to give your baby massages. This will be enjoyable for both of you.
- dress baby in clothes made from a variety of materials or with different textures. Move his hand across them so that he can feel them.
- wear clothes yourself that have contrasting texture; encourage baby to touch them.
- place objects close enough for baby to touch them accidentally; encourage him to touch them by gently moving his hands across them.

THINGS THAT MAKE LEARNING FUN

Your baby's most important play thing is still you! Although he is still unable to play with toys, he is more aware of them. The most important functions of toys at this age are still to encourage listening, looking and touching. Toys that are appropriate for this age include:

- noise makers such as rattles, bells; preferably small and brightly coloured.
- teethers in a variety of shapes, textures and colours.
- wrist rattles
- toy frames to hang over the reclining chair (essential)

- bright and contrasting toys to hang from the toy frame
- a bright mobile to hang over the cot
- bright and contrasting prints or magazine pictures
- a roly poly
- pull music boxes and chimes.

LEARNING TO COMMUNICATE

SESSION FOUR

PARENT HANDBOOK

DEVELOPMENT AT FOUR MONTHS:

By four months your baby has begun to learn that he can have an effect on the world around him. He is starting to be aware that he can cause things to happen through his actions.

Baby is learning that he can cause things to happen through his actions.

This is an important milestone in your baby's development.

MOTOR DEVELOPMENT:

Your baby's head control is much more developed at this age. Although he still requires some back support, he can now keep his head up and can turn it from side to side to see what is happening around him. He will enjoy being propped up for short periods so that he can look around and use his arms more.

At 4 months, your baby is starting to discover his body. You may notice him looking at one of his outstretched hands for a short time, rotating it as he opens and closes it. He may even start to bring his hands together. Gradually he will develop more control over his hands. One of the most exciting skills your baby will learn at this age is how to reach for things that he wants. Reaching involves many skills. For baby to be able to reach effectively, his muscles must be strong enough to support and turn his head, he must be able to focus on objects and he needs to have some control over his hands to guide them in the right direction.

At first your baby will tend to lean toward things that he wants and occasionally will accidentally touch objects placed in front of him. You will notice that his movements are becoming more purposeful. Through trial and error your baby learns that if he reaches out, he can often get things that he wants. Gradually, he will learn to guide his hand in the direction of the toy that he wants and close his hand around it.

Grasping is another important skill that your baby learns at this time. Initially he will only be able to hold an object placed in his hands for a very brief time. At this stage he often isn't aware that he is holding the object and will tend to drop it without noticing it fall. He will soon start to take more notice of an object placed in his hands and will move it so that he can see it better.

Once baby can reach out and grasp, he will start to do many more things with his hands. He will tend to mouth everything placed in his hands, he will start to bang and shake rattles and will soon begin holding toys in both hands. At this stage he is unable to transfer objects from one hand to the other.

Motor Development:

- head control is more developed
- discovering his body
- hands are coming together
- leans in the direction of things he wants
- beginning to reach
- beginning to grasp objects
- unable to transfer from one hand to the other

LOOKING:

Bright colourful objects still attract your baby's attention the most. At this age he will take much more notice of objects placed in front of him, and will try to reach for them. You will also notice that when you are reading with him on your lap, he is beginning to take an interest in colourful pictures in your magazines and books.

As he is now able to see objects placed further away from him, you will notice that he is starting to become a little sticky beak, watching everything that is going on around him. He will enjoy watching you do your chores or other children playing near him. Moving objects are particularly fascinating at this age. Watch how he turns his head to follow objects as they move.

Your face is still one of the things that he likes to look at best. His eyes are naturally drawn to yours because they contrast with the rest of your face. Notice how well he now maintains eye contact with you.

Looking:

- is still attracted to bright colours
- watches intently what is happening around him
- follows moving objects with his eyes
- maintains good eye contact with you

LISTENING:

Four month old babies are fascinated by sounds, particularly voices. Notice how he stops moving (including sucking) when he hears a sound. He will now search by turning his head to find out where the sound is coming from. At this age he is attracted to sounds with lots of variety. You will notice that he will tend to listen intently and suck faster when he hears a new sound. Music is very interesting to baby's of this age. Watch how your baby reacts to different types of music.

Listening:

- is fascinated by sounds
- stops moving, then sucks faster when he hears a new sound
- beginning to search for sounds by turning his head
- is attracted to sounds with variety
- is attracted to music

UNDERSTANDING OF THE WORLD:

What your baby knows about the world has a major effect on his communication skills. Initially your baby is like an observer, just watching what is happening around him. However, by four months your baby is starting to interact more with his world. He is beginning to learn about relationships between things and is beginning to realise that he can cause things to happen, that he can have an effect on his world.

There are several important skills that your baby will learn in order to develop an understanding of the world in which he lives. These are:

- Object permanence
- cause and effect relationships
- problem solving
- play
- imitation

Object Permanence:

This is a fancy name for knowing that things still exist when we can no longer see, hear or touch them. Most of the things that we talk about to each other are things that are not within our view, such as what we did at work, or what we are going to do tomorrow. We often ask people to get things for us from another room, or out of a cupboard. Without object permanence skills we would only be able to talk about things that we could still see or touch or hear.

To develop object permanence we must build up images or pictures of people, objects and events in our minds. This forms the basis of our memory banks.

Think of a car!

Do you imagine a mini, a commodore or another sort of car? The car that you imagined is probably different to the car that your friend imagined. This is because your different experiences effect the images that you build up in your memory banks.

At four months your baby has very primitive object permanence skills. He will follow moving objects with his head, however, will not continue to search for them once they are out of sight. Similarly, he will search for a sound while it is still happening, however, will stop searching when the sound stops. Because he hasn't yet developed images of objects, actions, or events, he does not search for objects that are either completely or partially hidden.

Object Permanence:

- is not aware that objects still exist when he can no longer see, hear or touch them
- is beginning to search for sounds that he can hear
- follows moving objects to the point of disappearance
- does not search for objects which are fully or partially hidden

Cause and effect relationships:

At this stage your baby is learning about cause and effect relationships. He is learning that by his actions he can have an effect on his world.

You will notice that his actions are initially random. Occasionally he will accidentally hit something with his hand or his leg causing it to make a noise. Gradually his actions will become more deliberate as he begins to understand the connection between his actions and the noise.

Another useful thing he will learn at this age is that when he cries you come and pick him up, or when he makes a noise, you talk to him. Understanding these basic cause and effect relationships is essential to communication. Remember that one of the main reasons that we communicate is to have an effect on other people and our world. You can help your baby to understand cause and effect relationships by providing him with opportunities to experience them.

Cause and effect:

- is learning that he can have an effect on his world
- is developing a connection between his actions and effects they have

Problem Solving:

As your baby's understanding of the world develops and he begins to understand cause and effect relationships, he also begins to solve problems, such as "how can I get things that I want". He is now not only developing goals (that is, things that he wants), but is also starting to work out how he can achieve them. He is also beginning to be selective in his goals. He will tend to turn away from things that he doesn't want and will reach towards things that he does want. Watch how he now shapes his hand in anticipation of getting the object he wants.

At this stage he does not realise that he can use other people to help him get things that he wants. He has not yet developed a connection between people and objects. Over the next few months you will help your baby to develop this connection by:

- giving him things that he is reaching for;
- talking to him about objects that he is holding or looking at;
- encouraging your baby to look at you and the object.

Problem solving is basic to our communication. It is through communication that we achieve many of our goals. Through communication, we can get other people to help us to get things that we want.

Problem Solving:

- beginning to use his own body (eg reaching) to get what he wants
- doesn't yet connect people and objects (doesn't know that he can use other people to get what he wants)

Imitation:

It is through imitation that your baby learns the words that we use to communicate to each other. At four months your baby will tend to simply watch you carry out actions, he will find them fascinating. Soon he will learn to copy simple actions such as banging, shaking a rattle, splashing in the bath. or copying faces that you pull. Later he will progress to copying simple sounds that you make like "bububu".

Imitation:

- attends to actions that you perform
- will soon begin to copy simple actions such as banging and splashing

Play:

Your baby explores and learns about his world through play. At this age your baby's play with objects is limited to a few actions such as hitting, holding or mouthing. Soon he will start to shake and bang rattles and other noise makers. Gradually his play will become more complex. In this way he is gradually building up information in his memory bank about these objects and what they can do. To your baby, play is not a special time to sit down with toys, play is everything he does whenever he is awake. It is learning about his world through exploring.

Play:

- explores his world through play
- play is limited to a few actions, mouthing, banging, hitting.
- will soon start to shake noise makers

COMMUNICATION SKILLS:

Although your baby has not yet developed true communication skills, he is beginning to learn all the important rules he will need in order to be an effective communicator.

By this age your baby will maintain eye contact with you while you are having little conversations with him. Because he does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him get objects. Therefore when he wants something or is playing with a toy, he will tend to look only at that toy. Similarly, if he does not want something or does not want you to do something, he will tend to pull his arms back and turn away without giving you eye contact.

As your baby's cause and effect and problem solving skills develop over the next few months, you will notice that your baby will begin to use eye-contact more in his communicative

attempts. You can encourage this by talking to your child about what he is playing with and positioning yourself so that he can achieve eye-contact with you. You can also do this when he is reaching toward something:- talk to him, position yourself so that he can achieve eye contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

By this age your baby is learning to take turns in a conversation. He will vocalise to you and will stop when you talk and continue when you stop. He does not really start up conversations yet but will join in if you start one up.

Taking turns is important to any communication. We would not be very good communicators if one person always did all the talking. Over the next few months your baby will become much better at taking turns, he will overlap less with you and will also begin to start up conversations.

Your baby is also learning to take turns in games, which helps his turn-taking in conversations. If you play games like banging on the table, he will tend to wriggle his body or make a sound when you stop. He will stop wriggling when you bang again.

You can help your baby to develop turn-taking skills by playing games like this with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

You will also notice that your baby is beginning to make more sounds. At this stage he will tend to make more open mouth sounds such as "ah" or "eh". He may even use a few consonants such as "m" or "b".

Babies are very variable in the type and amount of sounds that they make at this age. Try not to compare your baby with other babies. Some babies are very talkative while others tend to be quieter. The most important thing is that your baby is experimenting with sounds, not the amount of sounds he is making.

He will enjoy lying in his cot or on the floor and discover all of the different sounds that he can make with his mouth. Listen to the different sounds that he can make!

At this age he will take a great interest in his own mouth and in your mouth especially when your talking. Encourage him by talking to him and letting him play with your mouth.

Communication Development:

- maintains eye contact when you are talking to him
- doesn't yet indicate to you things that he wants
- doesn't yet show you objects/things of interest
- is taking turns by moving his body and sometimes vocalising
- beginning to make more sounds
- using more variety in the sounds he makes
- shows an interest in his own and your mouths

HELPING YOUR BABY TO LEARN:

Parents are the best people to help babies to learn. There are so many things that you do each day which provide your baby with ideal opportunities to learn about his world. Here are some ideas to help you:

WHERE SHOULD BABY PLAY:

The best place for your baby to learn is near you. He will enjoy watching you as you carry out your normal daily activities. Remember to place him in a variety of positions through out the day. This will help to strengthen different muscle groups and will also give him different views of the world.

Although he is unable to sit unsupported as yet, he will enjoy being propped up for short periods each day. In addition to allowing him to look around more, it will enable him to use his arms more. A reclining chair is very useful at this age.

He will also enjoy sitting on your lap at a table. Place toys in front of him to encourage him to reach. Because he is well supported in this position, he is able to easily move his arms around.

Where can baby play:

- near you!
- in a variety of positions, on his back, tummy, side, sitting propped up with support
- on the floor on a rug
- in a reclining chair
- on your lap, at a table
- in his pram

ROUTINE ACTIVITIES:

Now that your baby is taking more notice of what is happening around him, routine activities such as nappy changing, feeding and bathing take on a whole new meaning. Here are some more ideas on how you can use these times to help your baby to learn:

Nappy changing:

Nappy changing itself is not the most exciting activity in the world, however, it can be an enjoyable time spent interacting with your baby. Use the time to have a conversation with your baby. Watch how he uses his eyes and body movements to communicate with you. Play games with him, such as pat-a-cake or peek-a-boo. After several goes at the game stop midway and wait for your baby to respond before you continue.

Bath-time:

By four months your baby will start to enjoy his bath more. He won't mind being undressed as much as he did when he was younger. When dressing, undressing and bathing your baby, give him a chance to have a kick and to move his arms and body without the restriction of his clothes. Again use the time to have a conversation with him. Don't forget to allow him to have a turn in the conversation.

Dressing:

Remember to talk to your baby while you are dressing him. He can learn lots of interesting things about his body, his clothes and his world as you change him. Talk about what you are doing, how he is growing and the different parts of his body. Although he can't understand your words as yet, he is responding to the sounds that you are making. With your help, he will gradually begin to connect those sounds with things in his environment. This is how he begins to learn the meanings of words.

Feeding:

At this age your baby is still being fed very frequently. Feeding is a very special time to spend with your baby. During feeds your baby feels secure and content. Again make the most of these times by holding your baby close to you so that he can look into your eyes and, by quietly talking to him.

Your baby may start taking small amounts of solids over the next few months. The reclining chair is very useful for sitting baby in while he has his first solid meals. Remember to sit at baby's eye-level so that he can easily maintain eye-contact with you. He will feel intimidated if you lean over him. He will enjoy having a chat to you while you feed him.

EVERYDAY ACTIVITIES:

Make sure your baby has the opportunity to spend time in a variety of places during the day. Imagine how bored you would be if you were kept in the same room all day! At four months your baby will enjoy being moved around with you (both inside and out), while you carry out your normal daily activities. This is a good way to keep your baby entertained.

The washing:

Take your baby out-side with you while you hang out the clothes. Place a rug near you on the grass (in the shade). Baby can either lie on the rug or in his reclining chair. If he has a brother or sister, they might like to keep him entertained with some toys. Your baby will enjoy listening to all of the different sounds and seeing all of the different sights in the garden. Remember to talk to your baby about the things he can see or hear while he is out-side.

Doing the ironing:

While you are doing the ironing, why not place baby across the room from you so that you can talk to him while your doing it. Of course, you need to make sure he is not too close to the ironing board for safety reasons. He will find your actions entertaining and will enjoy the opportunity to chat to you. Place his toy frame across his reclining chair. so that he can play with it. Talk to him about what he is doing

The gardening:

Gardens are wonderful places for babies. These are so many interesting things to see in the garden! Place baby's rug near you while you do the garden. Talk to him about what you're doing, about the plants, the plane going over head, the birds sitting in the tree. He will enjoy feeling the breeze on his face, the grass under his hands and hearing all of the different noises: mowers, people talking, hammering, dogs barking.

Going for walks:

Walking is not only good exercise, it can be very relaxing for both you and your baby. Your baby will find the motion of the pram very soothing. It is often a good way to get a difficult sleeper to sleep! Baby will also find the walk very interesting. It gives him the opportunity to see new things and to hear new sounds. While walking point out to your baby the different things that you see. Remember that although he can't understand the words that you are saying, he will respond to your voice. Gradually he will come to connect the sounds that you make with the things around him.

Reading Books:

Although your baby is unable to actually read at four months, it is a good time to introduce him to baby books. Reading books with your baby helps to develop many skills such as attending to specific things, looking where someone else points, listening, taking turns, connecting sounds with pictures and pictures with objects.

At this age your baby will be attracted to books with big, bright pictures. Hard covered books are much easier for baby to handle than the cloth books. The best books are the hard cardboard books especially designed for babies. These usually have only one main picture on each page (this helps to focus baby's attention). The hard pages allow baby to turn them more easily. Most of these are also wipeable. Cheap baby board books (under \$3.00) are now available through most department and general book stores.

Good books to look out for:

* Brimax baby books such as-
Rogers M. and Ricketts M. "A first book - open and look"
Brimax Books, England, 1986.

Rogers .M. and Ricketts .M. "A first book - open and see"
Brimax Books, England, 1986.

* Dick Bruna books

* Lady Bird books such as-
"Baby's first book"
"Baby's green picture book"
"Baby's red picture book"
"Let's play outside"

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage listening:**

- talk to your baby about things that you are doing
- place noise makers on his toy frame, and place them close enough to his hands that they make a noise when he moves.
- talk to him about sounds that you hear
- play music to him and dance with him to the beat
- sing songs to him, particularly songs with actions
- shake noise makers in front of him then gradually move them out of sight to encourage him to follow them.
- shake noise makers slightly out of his line of vision and encourage him to turn his head to the direction of the noise.
- when you come into the room call him.
- place noise makers in his hand and encourage him to move his hands
- hang wind chimes in his room

To encourage looking:

Now that he is four months, you will find that he is beginning to take much more notice of things around him.

- give him objects to play with which are bright and colourful
- place bright mobiles in his room
- place bright pictures on the wall near his cot.
- hang a variety of different objects from his toy frame
- introduce him to his first book. Choose books which have hard cardboard pages and only one main picture on each page. (refer to reading books section above)
- sit baby on you lap while you are reading, he will enjoy looking at the colourful pictures in your magazines
- sit baby in a variety of positions to give him different views of his world
- take him for walks in his pram, so that he can look at different things around him

To encourage communication:

- talk to him about things that you are doing. Remember to give him a chance to have a turn too. Wait for him to move or vocalise before you continue.
- play games such as pat-a-cake with him. Stop half way through the game and wait for him to move or make a sound before you continue. This will help him to take turns.
- make sure that your face is close enough to him that he can make eye-contact with you.
- remember to make eye-contact with him when you are talking to him
- use variety in your speech, use high and low sounds, quiet and loud sounds. This will keep him interested.

To encourage object permanence:

- show baby bright objects and gradually move them out of his sight and then back again, talk to him as you do this.
- place objects in baby's hand and cover his hand and the object with a see-through cloth. Pull it off while baby is watching.
- play peek-a-boo with baby. Cover your face with a cloth, continue talking and then pull it off
- while talking to baby move your head out of his sight and then back again. He will follow your movements.

To encourage an understanding of cause and effect:

- place noise makers close enough to baby, that he will hit them if he accidentally moves his hand or his feet, gradually his actions will become more deliberate.
- place noise makers in his hand so that if he moves his hand he will make the noise.
- when he vocalises go up to him and talk to him,
- encourage him to kick his legs in the bath, so that he can see/hear the splashes

To encourage problem solving:

- place bright and interesting objects in a hanging frame close to him, so that if he moves his hand he can grab them, this will encourage him to reach
- wind up toys to activate them, stop them and wait for him to react (move or vocalise) before you let it continue.

To encourage play:

- give him light weight colourful toys and objects which are easy to handle
- place them in his hands as he is unable to pick them up by himself at this age
- talk to him about the toys that he has and help him to manipulate and mouth them. Don't stop him from putting things in his mouth (unless of course they are unsafe), this is your baby's way of exploring!.

To encourage imitation:

- * carry out interesting actions in front of him, such as banging on the table, clapping hands then manipulate his hands and repeat the action, make a game of it!
- * copy sounds that he makes, then wait for him to make a sound then repeat. Note: it is easier for him to copy sounds he can already make.
- * when he smiles, smile back at him

THINGS THAT MAKE LEARNING FUN:

Now that baby is starting to use his hands more, his need for play materials has changed. Play materials for four month olds should encourage baby to touch and explore, learn about cause and effect relationships, learn how to solve simple problems, learn about object permanence. Look for objects that:

- are easy to handle, that is, are not too heavy or too large for little hands. (Note: some rattles are a little top heavy, try rattles that are dumbbell shaped)
- are safe to put in his mouth (as everything will soon go in his mouth)
- are bright and colourful
- have different shapes and sizes
- make noises when moved
- have different textures

Toys which are appropriate for your baby at this age:

- colourful balls - several soft balls which are small and easy to grab (cloth and rubber balls are ideal). Baby will enjoy reaching for them, mouthing and manipulating them.
- chime-ball and roly-poly - these will help to develop cause and effect relationships, remember to place close enough to baby for him to accidentally hit them.
- noise makers - which have a variety of shapes and noises, tie them to the toy frame or place them in baby's hands
- wrist rattles- which again can help to develop cause and effect relationships.
- plastic key rings- these are easy to manipulate and mouth and make great noises
- soft toys- to encourage touching and mouthing.
- teething rings - to encourage touching and mouthing.

Play materials from around the home:

As your baby is now starting to reach for things, you must ensure that anything within reach is safe for baby to touch. Therefore avoid objects which:

- have parts that are small enough to swallow
- have sharp or rough edges
- may have poisonous paint
- have contained and poisonous substances such as dishwashing liquid
- have contained medicines
- have small parts which may break off.

The following items from around your home make ideal play materials for four months olds:

- plastic containers- various sizes and shapes such as small fruit juice bottles, empty film canisters, old plastic herb or spice jars. Fill with pasta or rice, place superglue to the rim of the container and secure the lid. Don't give to baby until the glue has set.

Note: only a small amount of glue is required and it should not be visible around the rim of the lid).

- empty cotton reels- these are good to mouth and manipulate
- plastic spoon- select spoons that are colourful and have rounded handles, these are good for baby to mouth, manipulate and bang.
- plastic bangles- in a variety of colours and textures, good to mouth, manipulate and hold on to.

LEARNING TO COMMUNICATE

SESSION SIX

PARENT HANDBOOK

DEVELOPMENT AT SIX MONTHS:

Over the past six months your baby has learnt many things. Through looking, listening, touching and tasting, he has begun to understand more about his world. You will have noticed that as his skills have developed, the way in which he interacts with his environment has also changed. Let us look at what baby can do now.

MOTOR DEVELOPMENT:

By 6 months, your baby is learning many things about his body. He has found his hands and his feet, and spends many hours looking at them, feeling them and putting them into his mouth. With your help, he will soon discover other parts of his body.

Gradually your baby is gaining more control over his body. He will soon be able to sit by himself, although only for few seconds at first. You can help him by sitting him squarely on the floor with his legs spread apart and supporting him until he balances. He will also use his hands to prop himself up for a short time. While he is learning to balance, you will need to provide him with some support (using pillows behind and to the side of him to prop him up) so that he can be free to use his hands. He can also sit supported in a high chair, which will allow him to use his hands more.

Sitting helps your baby to become a little more independent. He is now free to do more with his hands and can play quite differently. He is able to reach more consistently and easily toward things that he wants.

Your baby is now able to do much more with his hands, he is no longer limited to just holding or grasping toys. He is learning that he can do many things with his hands such as banging, crumpling, passing toys from one hand to the other, holding toys in both hands (at the same time) and turning toys over to examine other sides. He still tends to take everything to his mouth, so that he can explore them more. Although he still has difficulty releasing toys that he is holding, he will learn how to do this over the next few months with your help. He is also now able to consistently reach for things that he wants including your face!

Over the next few months your baby will develop even better control over his body. Soon he will be trying to go places. He will try to roll over, at first from his back to his tummy and will soon begin trying to crawl.

Motor Development:

- has better control over his body
- is beginning to sit-supported
- is using his hands much more
- is beginning to transfer from one hand to the other
- is consistently reaching

LOOKING:

Sitting upright gives your baby a whole new view of the world. He can now clearly see quite long distances away such as across the room, or to trees when out in the garden. His increasing visual skills allow him to explore his surroundings more. You may have noticed that he is becoming much more inquisitive. At this stage he likes to explore everything, turning toys over to examine the other sides, looking at himself in the mirror, examining your face, poking his fingers in your nose eyes and mouth.

One of his favourite things is just looking at you. You will notice that he now maintains much better eye contact with you, especially when your both having little conversations. Remember that eye contact is one of the most important parts of communication.

He is still very attracted to bright colours and contrasts in shape. He will often stare for quite long periods at things that he wants which are out of his reach. He is also beginning to attend more to objects and books placed in front of him, and will enjoy touching his book as you read it to him.

Looking:

- can see clearly across a room
- is attracted to your face
- will stare for long periods at objects out of reach
- is attracted to bright colours and contrasts
- is able to maintain good eye contact

LISTENING:

Your baby is very interested in sounds by this age, especially your voice. He prefers sounds which have lots of variety. You will notice that he attends to you more when you use lots of variation in your voice. He doesn't like it when you use a flat voice. Similarly, he likes to hear and play with noise makers (such as rattles) that make a variety of sounds. He is also beginning to be able to work out the direction from which sounds are coming. You can help him to learn how to do this by shaking noise makers (such as rattles) within his sight and gradually moving them out of his sight to encourage him to follow the sound. Call him from out of his line of vision and gradually come into his view while still talking.

Listening:

- prefers sounds with variety
- is beginning to work out the direction from which sounds are coming
- is attracted to the human voice

UNDERSTANDING OF THE WORLD:

As we have said before, what your baby knows about the world will significantly affect his communication skills. Over the past few months, you will have noticed that there has been a major change in your baby's understanding and his awareness of the relationship between things in his environment.

Object Permanence:

Remember, this is a fancy name for knowing that things still exist when they are out of our sight. By 6 months, your baby is beginning to develop his object permanence skills. You may have noticed that recently your baby has started to cry when you leave the room or when an unfamiliar face comes into view. This is not because he is being naughty, but because he has begun to develop these little images in his mind - of you, familiar people and objects. This is a very important step for your baby to make.

He will also soon begin to search for objects which have fallen out of his view and will try to uncover partially hidden toys. You can help him to develop this skill by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also play hide and seek in the bath, show him how the toy can go under the water and later under the bubbles.

Object Permanence:

- starts to cry when you leave his sight
- developing little "images" of familiar people/objects in his mind
- starting to search for objects that fall out of sight or that are partially hidden

Cause-effect relationships:

At this stage your baby is learning about cause-effect relationships. He is learning more and more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, such as giving him toys that he can easily activate and by responding to his actions.

Cause and effect relationships:

- starting to learn that he can make things happen through his actions
- starting to learn to activate simple toys such as a roly-poly

Problem solving:

Your baby's ability to solve problems is gradually increasing. He is learning that he can use his own body to get things that he wants. He is also starting to decide that there are things that he does not want and will turn away from them. He now realises that he can get things within reach by reaching out his hand, and is starting to shape his hand in anticipation of getting the object.

At this stage he still hasn't developed a connection between people and objects and so does not yet realise that he can use other people to help him get what he wants. Over the next few months this connection will begin to develop as you continue to:

- give him things that he is reaching for;
- talk to him about objects that he is holding or looking at;
- encourage him to look at you and the object.

He will soon begin to solve other problems, such as dropping one toy so that he can pick up another one; or pushing one object out of the way to get another one, or pulling a cloth to get what is on top of it; or pulling a string to get a toy tied to it.

Problem Solving:

- gradually increasing
- learning to use his own body to get things that he wants
- turning away from things that he doesn't want
- hasn't yet developed a connection between people and objects
- doesn't realise that he can use other people to get what he wants
- doesn't realise that he can use objects/toys to get other people's attention
- starting to use tools such as strings/cloths to get what he wants

Imitation:

As we've said before, it is through imitation that your baby learns the words that we use to communicate to each other. You may have noticed that your baby is starting to become a little mimic, copying simple actions such as banging or splashing in the bath; or copying faces that you pull. He will soon progress to copying simple sounds that you make such as "bubub".

Imitation:

- starting to copy simple actions such as banging
- will soon copy simple sounds

Play:

It is through play that your baby learns about his world. Initially your baby only used a few actions when playing with objects such as holding them or mouthing them. Now he is much more active in his play. Although he still uses his mouth to explore objects, he now also carries out other actions on them such as banging, hitting, shaking, waving and crumpling. In this way he gradually builds up information about what these objects are and can do. Remember that to your baby, play is not a special time to sit down with toys, play is everything he does whenever he is awake, it is learning about his world through exploring.

Play:

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys.

COMMUNICATION SKILLS:

At this stage your baby still has not yet developed true communication skills, he is continuing to learn the important rules he will need in order to be an effective communicator.

Over the past two months, you may have noticed that he is using much more eye contact with you while you are having little conversations with him. Because he still does not yet connect you and objects, he will not try to talk to you about objects or ask you to help him to get objects. Therefore when he wants something or is playing with a toy, he will only look at that toy. Similarly, if he does not want something or does not want you to do something, he will still tend to bring his arms back and turn away without giving you eye contact.

As your baby's cause effect and problem solving skills develop over the next few months, you will notice that your baby will begin to use eye-contact more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward something: talk to him, position yourself so that he can achieve eye contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Your baby is continuing to develop his turn-taking skills. He is using more consistent turns in conversations. Notice how he vocalises to you and stops when you talk and continues when you stop. Over the next few months he will get even better at taking-turns and will overlap less with your turns. He might even start to initiate conversations with you.

Your baby will enjoy playing turn-taking games such as peek-a-boo or pat-a-cake . These games will help him to develop his turn-taking in conversations. Notice how when you bang on the table, he bangs on the table when you stop; and stops when you start to bang again. You can help your baby to develop turn-taking skills by playing games like this with him and by having lots of little conversations with him. Remember to make sure you give him a chance to have a turn.

You will also notice that your baby is beginning to make more sounds. At this stage he is beginning to use more consonants such as a s "m" and "b". He might also be starting to string sounds together, such as "bubub"; "ah-oo". Don't forget that babies are very variable in the type and amount of sounds that they make at this age. The important thing is that your baby is experimenting with sounds. He likes to lie in his cot or on the floor, or sit in his high chair and discover all of the different sounds that he can make with his mouth. At this age he will take a great interest in his own mouth and in your mouth especially when your talking. He will try to touch your lips and put his little fingers into your mouth. You can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quite times to experiment with sounds.

Communication:

- eye contact is continuing to improve
- not yet using toys to get your attention
- not yet aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

HELPING YOUR BABY TO LEARN:

Everything that you have done with your baby over the past 6 months has been helping him to learn. Look at the many skills he has developed up until now. Without you he would not have learnt these skills. Because he isn't yet very mobile, he relies on you to help him to interact with his world. In some ways you are like his interpreter with the rest of the world.

Remember that you don't need to set aside special times each day to teach your baby new things. He learns best by being with you and having the opportunity to experience new things.

WHERE SHOULD BABY PLAY:

The best place for baby to play is still near you! Although he likes being in his own room for a small part of the day, he would rather be with you.

He still needs the opportunity to be in a variety of positions each day, so that he learns to use his different muscles. These positions also give him different views of his world.

On the floor:

Now that your baby is learning to sit, he should have the opportunity to practice this skill every day. Sit him squarely on the floor with his legs spread to the side, supporting his weight until he is balanced then let him go. At first he will only sit for a few seconds, however, soon he will be able to sit for longer periods by himself.

Although he will initially require support (pillows behind his back and to the sides to help him balance), it is important that your baby also have the opportunity to play while sitting on the floor. This position enables him to manipulate his toys with his hands and to bend forward and reach to toys in front of him. This will help him to develop more control over these parts of his body.

It is also important that he spend some time each day on the floor on both his back and his tummy, especially his tummy in preparation for crawling. You may find that he isn't very keen on being placed on his tummy, however, he won't get used to it if he is never placed in this position. Obviously you need to do this when he is awake and when you are around to watch him. Placing toys to the front and side of him will encourage him to reach and roll toward the toys. Placing toys slightly out of reach will encourage crawling. Time spent on his tummy will help to strengthen his neck muscles.

On your lap:

Your baby will enjoy sitting on your lap at a table. As he doesn't have to concentrate on balancing, he is free to use his hands to explore things in front of him. He might also like to sit on your lap facing you so that he can have a good chat to you or play little games like "round and round the garden".

In a high chair:

Now that your baby can sit supported in a high chair, he can more easily watch you while you are doing your daily chores. It's sometimes a bit hard to see what mum and dad are doing when you're close to the ground and they are so far above you. He'll enjoy sitting in his highchair at meal times, watching the family eat and participating in conversations with you.

In his cot:

Each day your baby should spend some quite time in his cot, playing with his toys, exploring his body and practicing his sounds. This is generally a relaxing time for baby and a good time for Mum and Dad to have a rest and to spend time with each other.

Where should baby play:

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair
- In his cot

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

As you are now aware there are many routine activities that you carry out with your baby every day which are ideal opportunities for you to play with your baby and help him to learn.

Routine Activities:

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

By now you will have become very skilled in the art of nappy changing. Are you having fun while you change his nappy or is it a bit of a chore? Remember that with a little imagination, nappy changing time can become a lovely opportunity to communicate with your baby. You can talk to him about his body and the new actions he is starting to perform. As he gains more control over his body, you will notice him wriggling more trying to investigate the things around him, including his own body. See how limber he is- can you suck your toes! He thinks he is very clever to be able to do this. Watch how he inspects the different parts of his body. there are so many wonderful things for him to learn about his own body.

You can also use it as a time to play little games like "round and round the garden". But don't forget to keep the nappy handy!

Bath-time:

By now your baby probably loves bath time. He can now kick and splash, probably all over Mum and Dad. Remember that he is learning that he can make things happen through his actions! Don't forget to take the time to talk to him while he is having his bath. You can talk to your baby about his body parts as you wash him, for example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

There are lots of things your baby can learn while having his bath. He can learn about cause-effect relationships by watching the water splash as he hits it with his hands or kicks it.

Now that he can sit up more you can begin to introduce toys into his bath. He can watch them float; tip water out of them, sink them and push them along the water. Some times you might like to hop in the big bath with him. Bubble baths are also lots of fun. He'll enjoy hiding toys in the bubbles or watching you blow bubbles.

Dressing:

When you're dressing your baby, don't forget to talk to him about what you're doing; "daddy putting singlet on" "one arm in, other arm in, pull it down, there you go". By doing this he will gradually learn the names of his clothes and the actions that go with dressing. You can also have a little conversation with him. For example: "you want dress or jumpsuit today". Pretend that your baby's vocalisations are his answer eg: "you want dress, ok". Now that he is moving more, you'll find that he's a bit of a "wriggle pot", squirming all around the place while you're trying to dress him.

Meal-times:

Meal times are now becoming a lot of fun. Again, they provide you with an ideal time to interact with your baby. Over the last month or so, he may have started to eat small amounts of solids. Now that he is sitting and can use his hands more, he can also begin to learn to feed himself. Give him his own spoon to play with while you feed him with another. This will help to develop his independence. Remember to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner". Talk to him about what you are doing "nice bicky, eat it up, all gone", "more juice". When he has finished his dinner let him play with the spoon and empty bowl. He will enjoy hearing the sounds he can make.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Remember everyday activities provide your baby with an opportunity to learn. Don't keep your baby in one room, take him around the house or outside with you while you do your chores. Here are a few examples of how you can do it.

The washing and gardening:

When you are hanging out the clothes or doing the gardening, don't leave your baby inside. This is a great chance for your baby to go outside and explore! Place a rug or a blanket near you on the grass, out of the sun. Sit or lie your baby on it with a few toys. There are so many things happening outside. He can look around at the garden, listen to all the different sounds around him: birds, the neighbours talking, the man next door hammering, an aeroplane going over head. He can look at all the different things in the back yard, the flowers, clothes, grass and the sky. He can smell the neighbours freshly cut grass and the cake the lady next door has just baked.

While you're working, you can talk to him about what you are doing and all of the things that he can see, hear and smell:

"look, here's your jumpsuit, nice and clean", "what's that, it's an aeroplane", "can you hear the birdie".

Wait for your baby to say something and then continue on as though you were having a conversation about the things that you see.

Cooking and doing the dishes:

While you are cooking or doing the dishes, you can sit your baby in his high chair so that he can watch you. Again give him a few things to play with, so he won't get bored, but still show him and talk to him about what you're doing. For example: "daddy's got nice orange carrot, peel carrot" "yum, baby like carrot". The kitchen is a very exciting place for baby. Obviously some things in the kitchen are dangerous so now that baby is reaching you'll have to keep them out of his reach. The baby can hear, see and touch lots of interesting things in the kitchen, such as the sound of the dishes being washed, the sounds of pots and pans hitting each other, the smell of cooking, watching you peel and cut the vegetables, looking at all the different types of food and listening and watching mum and dad talking. To you the kitchen may be boring but to your baby it's Aladdin's treasure trove.

Going for a walk:

Remember to try to go out for a short walk each day. Your baby will enjoy being pushed along in his pram. Walking is relaxing for both you and your baby. As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice your baby looking at something, tell him what it is, "that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Visiting Friends:

Don't forget that you need to have stimulation as well. Visiting friends is important for you and can provide your baby with yet another opportunity to learn. You will have noticed that lately your baby is less friendly toward unfamiliar people. As we have learnt, this is because he has started to develop little images in his mind of people who are familiar to him. If you limit the access he has to other people to a very small circle, your baby will find it difficult to interact with other people.

Playing games with music:

He will enjoy playing games that involve music. Try playing music on a radio or cassette player, then turning the music off and waiting for him to do something before you turn it back on. In this way he will gradually begin to associate action and the music coming back on. You can also help him to develop problem solving skills by gradually expecting more from him. Through waiting for him to give you eye contact before turning the radio back on, you are helping him to understand the connection between you and the music. In this way he is gradually learning to use you as a tool to turn on the music.

Watching Television:

Your baby may be starting to take an interest in your television. Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly.

You will find that your baby will become distressed if left in front of a television set for too long. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby.

Reading books:

Although your baby is unable to actually read, he is becoming increasingly interested in books. These are many benefits of reading with your baby at this age, can you remember what they are?

Book reading:

- provides you and your baby with a quiet time to share with each other,
- encourages your baby to attend to the same thing that you are;
- provides your baby with an opportunity to connect pictures and words;
- introduces your baby to another way that we use language;
- provides baby with an opportunity to learn how to take turns
- sets up an important pattern for later in your child's development:- it helps him to grow up into a reader.

At this age your baby will be attracted to books with big, bright pictures. Don't just give your baby cloth books as he will find them hard to manipulate and will have difficulty turning

the pages. Try to pick books that have only one main picture on each page (which helps to focus baby's attention) and the hard pages allow baby to turn them more easily.

Sit your baby on your lap with the book in front or both of you. Tell your baby about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

You will find that your baby will not always listen intently, she'll be pulling at the book, chewing the pages, but don't give up, she is enjoying it.

Playing games and singing songs:

Games and songs are special activities which teach your baby so many things. They teach your baby: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

For those songs with actions you can help your baby to carry out the actions by moving his hands. After a few goes at doing this, stop half way and wait for your baby to do something before you continue. Remember to be close enough to your baby so that you can make eye contact.

The up and down song:

Up and down, up and down,
Little baby's going round.

Up and down, up and down,
Little baby's dancing round.

Pat-a-cake:

Pat-a cake, pat-a-cake,
baker's man
bake me a cake
as fast as you can

Pat it with flour
and bake it with ghee
and put it in the oven
for baby and me.

The Dancing song:

Dancing, dancing, one, two, three,
come along and dance with me

Dancing, dancing, one two three,
wont you come and sing with me.

The Bus song:

The wheels on the bus go round and round,
round and round, round and round,
the wheels on the bus go round and round,
all the way to school.

The children on the bus go up and down,
up and down, up and down,
the children on the bus go up and down,
all the way to school.

Everyday activities:

- the washing and gardening
- cooking and doing the dishes
- going for a walk
- visiting friends
- playing games with music
- watching TV
- reading books
- playing games and singing songs

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage listening:**

- continue to talk to him about things that you are doing
- give him noise makers such as rattles to play with
- take him for walks so that he can hear all the different sounds in the neighbourhood
- read books to him
- have him around you when you are talking to friends

- sing songs to him, especially action songs, help him to do the actions
- call him when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- don't make everyone whisper around the house, he has to get used to noises.
- continue to use lots of inflection in your voice.

To encourage looking:

- continue to give him bright colourful objects to play with
- show him colourful pictures in magazines and books
- sit baby on your lap while you are reading, encourage him to look at the pictures
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood
- sit him on your lap while you watch TV., he'll enjoy all the colours and movement
- play with him with colourful toys, move them around for him to follow.

To encourage communication:

- talk to your baby!
- remember to act as if he is trying to communicate with you
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turn may be vocalising or moving his body)
- use lots of variety in your speech to maintain his interest
- encourage other people to talk to him
- remember that although he is now using vocalisations more as his turn in the conversation, he might still sometimes only move his body.
- wait until your baby does something before you have another turn.
- get down to his level so that he can make eye contact with you

To encourage object permanence:

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered..
- play peek-a-boo with his face washer or bib.

To encourage an understanding of cause and effect:

- give him different toys to play with that he can shake and bang. Let him hear the many different noises that he can make through his actions.
- when he vocalises, go up to him and talk to him about what he is doing.
- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.

To encourage problem solving:

- place his toy just within reach so that he has to lean forward and reach for the toy to get it.
- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.

To encourage play:

- give him toys that are easy to manipulate, particularly toys with interesting details.
- place toys within reach. There is nothing worse than trying to reach for something you can't get!
- encourage him to rotate toys to view their different sides, show him how its done! Point out little details to him, such as a hole in his block.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- encourage his brother or sister or little friend to play with him. Babies love playing with young children.

To encourage imitation:

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes- what a fun game!
- copy facial expressions that he makes.
- sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

THINGS THAT MAKE LEARNING FUN:

There are so many things that your baby will enjoy playing with at this age. Many of these things can be found around the house such as ice block containers, old pavlova plastic eggs, empty film canisters, cotton reels, colourful plastic spoons and children's bangles, egg cartons, cardboard rolls from paper towels etc.

Play materials for 6 month olds should encourage baby to touch and explore; to manipulate; to discover details; to learn about cause and effect, to solve little problems such as how to get something that he wants; and to learn about object permanence.

Toys that are appropriate at this age include:

- colourful balls- small ones to hold in one hand, and larger ones that need two hands.
- roly-polies and chime balls
- a variety of different noise makers
- soft toys with different textures
- bath toys
- bubble makers
- coloured blocks with different shapes and colours
- wind up toys (you do the winding!)

LEARNING TO COMMUNICATE

SESSION EIGHT

PARENT HANDBOOK

DEVELOPMENT AT EIGHT MONTHS:

Life for an eight month old infant is one great adventure. Your baby is getting ready to move! Now that he can sit by himself, he has much greater independence. His understanding of the world in which he lives has significantly increased by this age. He not only knows that he can make things happen through his actions but that he can use other people to get things that he wants. Let us look more closely at the skills that he has at this age.

MOTOR SKILLS:

By eight months of age, your baby has much greater control over his body. His muscles are much stronger and he no longer needs your support in order to sit. If he leans too far to the side when he is sitting, he has learnt to put out his arm to balance himself again. Look how straight his back can be as he sits playing with a toy.

As he begins to sit more steadily, he will also start to reach for toys that are not only in front of him but also to his sides, and sometimes behind him. Sometimes, he might turn all the way around. Since he no longer fears falling to one side, he can use his arms for playing rather than supporting himself. Sometimes he might even lean so far forward that he finds himself in a crawling position, without really meaning to. You can just imagine him saying "How did I end up like this?".

When your baby is lying on the floor, he may start to try to move! At first he will try to roll from his back to his tummy and later from his tummy to his back. Now that he is starting to roll you will need to be extra careful about where you lie him. Later he might roll over and over to get to something that he wants. Sometimes babies will learn to shuffle along on their bottoms to get where they want to go.

Crawling often starts with your baby pulling himself forward with his hands, while moving his tummy along the floor. Sometimes he might go backwards first and seem a little confused about what he is supposed to be doing. Soon he will be getting up on his hands and knees to crawl along.

Moving requires a lot of effort from your baby. It is very hard work at first and he'll only be able to go a very short distance before he's exhausted. Later it will be like second nature to him, and he'll constantly be on the go. He needs lots of reinforcement at this stage. Give him plenty of cuddles and claps as he tries to move.

Remember that he will not move until he is ready to do so. Some babies take their time in becoming mobile, while others quickly learn how to put it all together.

As his hands are now free, he can use them to manipulate toys in many different ways. He now easily reaches for toys that he wants. Watch how he shapes his hand in anticipation. Soon he will start to use his thumb and index finger to pick up small objects. Remember you need to ensure that small objects are not left around for him to get at.

Your baby is now able to do much more with his hands. His movements are more accurate and precise. He is able to easily rotate objects, turning them over with his hands, in order to view their different sides. He is able to carry out many different sorts of actions with toys such as shaking, banging, crumpling, dropping, pulling, knocking them down. Watch how easily he can transfer a toy from one hand to the other. He can now hold toys in both hands (at the same time) and is starting to bang things together, which requires a much greater degree of co-ordination. These skills enable him to explore his environment more easily.

Motor Development:

- has better control over his body
- is able to sit unsupported
- is using his hands much more
- is able to transfer from one hand to the other
- is consistently reaching
- is able to roll from his back to his tummy
- is beginning to crawl
- is able to hold toys in both hands at the same time
- is starting to bang toys together
- is able to do more actions with his hands: banging, crumpling, shaking, dropping

LOOKING:

By eight months, your baby is becoming very inquisitive. His increasing visual skills enable him to explore his environment more easily. You will notice that as he can now see things at a distance more clearly, he has started to move toward things that are out of reach. At this stage he likes to explore everything, turning things over and over to examine the other sides. At this stage he is very interested in details. Notice how he pokes his finger in any little nooks and crannies. He particularly likes looking at himself in the mirror. Watch how he gets excited and pulls faces at his reflection. "Who is that?" he says.

Your face is still very interesting to him. Notice how he now examines different parts of your face, poking his finger in your eyes, nose and mouth. One of his favourite things is just looking at you. You will notice that he now maintains much better eye contact with you, especially when you're both having little conversations. Remember that eye contact is one of the most important parts of communication.

He is also starting to recognise familiar objects and people. Notice how excited he gets when he sees a favourite toy.

Looking:

- can see clearly across a room
- is attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is interested in detail, spends long periods examining toys
- is starting to recognise familiar people and objects.

LISTENING:

At this age your baby is becoming a very good listener. Watch how he stops what he is doing when he hears an interesting sound. He is starting to recognise some familiar sounds like your voice or the sound of the tap running for the bath. He now can easily locate where sounds are coming from and will soon begin to move toward them. He is particularly interested in voices. Notice how he prefers speech that has a lot of variety in it, and he doesn't appear very interested in people with monotone voices.

He has lots of fun making different noises while he plays. What good noises he can make with his toys by banging and shaking. How clever he is to make all those different sounds with his mouth.... Remember to talk to him about all the different noises that he can hear.

Listening:

- prefers sounds with variety
- able to locate where sounds are coming from
- is attracted to the human voice
- is beginning to recognise familiar sounds
- will soon begin to move toward sounds
- enjoys making different noises with toys
- enjoys making lots of different sounds with his mouth

UNDERSTANDING OF THE WORLD:

As we have said before, what your baby knows about the world will significantly affect his communication skills. Over the past few months, you will have noticed that there has been a major change in your baby's understanding and his awareness of the relationship between things in his environment.

Object Permanence:

Now that he is 8 months old, he has learnt that things still exist when they are out of his sight. He easily follows moving objects and will have lots of fun watching his toys drop to the floor. Watch as he searches for toys that have fallen from view. Notice that he now doesn't hesitate to uncover a favourite toy which is partially hidden.

You may have noticed that he is starting to recognise familiar people more. He will also become very excited when a favourite toy comes within his view because he now remembers what fun it is to play with it.

A favourite game at this age is peek-a-boo. Watch how he anticipates what is happening. He likes to join in too. Wait for him to pull down the cloth when its his turn in the game.

Object Permanence:

- recognises familiar people
- recognises favourite toys
- searches for objects that fall out of sight or that are partially hidden
- continuing to develop little "images" of familiar people/objects in his mind
- starting to search for and uncover fully hidden objects

Cause-effect relationships:

By this age, your baby has learnt that he can make lots of different things happen through his actions. He has learnt that if he shakes or bangs a toy he can make a noise; that he can make things move by pushing them; and that he can make mum laugh by doing something funny again. Watch the look of delight on his face as he drops a toy from his highchair to get you to pick it up!

Cause and effect relationships:

- knows that he can make things happen through his actions
- can activate simple toys such as a roly-poly
- looks to other people to activate interesting toys
- explores more complex toys to try to work out what activates them

Problem solving:

Your baby is now becoming quite clever at solving little problems. He has learnt that he can use his own body to get things that he wants. He easily reaches for toys and is now starting to move toward toys that are out of his reach. He will push things out of his way or move over them to get to things that he wants. He is learning that he needs to use two hands to pick up larger toys and that he might have to drop one toy to pick up another when both of

this hands are full. These are all quite difficult problems that he has to solve each day. He is also learning that he can use tools like a string or a cloth to get what he wants (so beware of table cloths!). Watch as he pulls the sting on his toy train to get it closer.

At this stage he is developing a connection between people and objects. He now realises that he can use other people to help him get what he wants. This connections has been developing over the past few months through his interactions with you. By responding to his actions, you have been teaching him that by reaching and using eye contact, he can signal to you to help him to get what he wants. Watch as he tries to get a favourite toy. At first he will try to reach it by himself. When he realises that it is out of reach, he will turn to you and will look from you to the toy and back again. Notice how he keeps doing this while reaching for the toy as if to say "can you get it for me mum?". He might also vocalise while looking back and forward between you and the toys.

Problem Solving:

- has learnt to use his own body to get things that he wants
- turns away from things that he doesn't want
- has developed a connection between people objects
- realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- is able to use tools such as strings/cloths to get what he wants

Imitation:

Through imitation your baby will learn the words that we use to communicate to each other. He is now becoming much more accurate in his attempts to imitate the sounds and actions that you make. He has lots of fun trying to copy you, especially when you copy him first! He is starting to copy more complex sounds and actions. He particularly likes joining in action games.

Imitation:

- is much more accurate in copying simple actions such as banging
- is able to copy simple sounds
- attempts to copy more complex sounds

Play:

Now that your baby has developed more skills with his hands you will have noticed a change in his play. He is now able to do lots of different actions with toys. He likes to turn them over, inspecting their different sides. He especially likes poking his index finger into all the little nooks and crannies. He is learning to use his index finger and thumb to pick up smaller objects (sultanas are good for this) and to manipulate smaller parts on toys. He likes to knock toys down and will soon start to put toys into other toys.

Gradually he is building up information about what objects are and what they can do. Remember that to your baby, play is everything he does whenever he is awake, it is learning about his world through exploring.

Play:

- much more active during play
- using a variety of actions on objects (banging, crumpling, shaking)
- still using his mouth to explore toys
- using his index finger and thumb to pick up small objects
- starting to put toys together
- likes knocking down blocks
- small objects

COMMUNICATION SKILLS:

At his age, your baby is learning to truly communicate. He is learning that he can signal to you to help him get what he wants. He has been learning all the rules he will need in order to be an effective communicator. He is now using eye contact more in his communicative attempts.

Now that he has developed a connection between people and objects in his environment, he will also start to tell you about the things that he plays with, sees and hears. He is starting to use eye contact, gesture and sometimes vocalisation to signal to you in his communication attempts.

He is beginning to use these signals to express a variety of communicative functions including requesting, rejecting and informing.

Notice how he looks back and forward between you and his toy as he reaches for it. He's requesting your help "get that for me, please mum!".

You have probably noticed that when he is playing with a toy he now frequently looks at you and smiles, as if to say "look at this Dad", "Aren't I clever", or "see what I can do".

Now when he doesn't want something he will tend to look at you and pull his hands back and whinge. Sometimes he might even shake his head. He's on his way to saying "No!".

As your baby's cause effect and problem solving skills have developed he has learnt to use eye-contact, gesture and vocalisations more in his communicative attempts. Continue to encourage this by talking to him about what he is playing with and positioning yourself so that he can achieve eye contact with you. Remember to do this when he is reaching toward something: talk to him, position yourself so that he can achieve eye-contact with you and give him the toy once he looks at you. This will help him to develop a connection between you and the toy.

Observe how easily your baby now takes turns. He now consistently responds to your conversations with him. He enjoys taking turns with you. Notice how he waits for you to take a turn before continuing. Sometimes he also repeats his turn using a louder voice when you fail to respond, as if to say "Well come on, aren't you going to say something!". Occasionally he might even start to initiate conversations with you.

Your baby will still enjoy playing turn-taking games such as peek-a-boo or pat-a-cake. These games have been helping him to develop his turn-taking in conversations. He particularly likes banging games. Watch how he copies you banging on the table and then waits for you to take a turn before continuing.

You will have noticed that your baby is becoming much more vocal. He is now using a greater range of sounds, particularly consonants like "m" and "b". He is starting to string sounds together, such as "bubub"; "ah-oo". Remember that each baby is very different in the range and frequency of the sounds that they make. Try not to compare them. The important

thing is that he is using more variety and is starting to join some sounds together. Remember that some babies are very quiet and others are noisy. It goes with their very different personalities.

He still finds his mouth interesting but he finds your mouth even more interesting. He will have lots of fun watching and feeling all the different sounds that you can make. Watch how he tries to copy you. Sometimes he might like doing this in the mirror.

He is now showing his emotions much more, he smiles and laughs and frowns when he is unsure of himself. It is important that you respond to these little signals. Say what you think he is feeling. "that's very funny", "you like that?", "you're a happy boy today" or "are you worried". By interpreting his feeling you are teaching him the words to go with how he feels.

Communication:

- eye contact is continuing to improve
- using toys to get your attention
- aware that you can help him to get things that he wants.
- using eye contact, gesture and sometimes vocalisations in his communicative attempts
- beginning to use a range of communicative functions - requesting, rejecting and informing
- taking turns more in conversations and play
- starting to copy you more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- starting to string sounds together
- enjoys experimenting with sounds
- interested in his own mouth and your mouth

HELPING YOUR BABY TO LEARN:

Although your baby can do more things by himself and is a little more independent, he still needs you and will often reach up to you to be picked up. He needs the security of knowing that you are there.

WHERE SHOULD BABY PLAY:

Watch how your baby uses you as a base from which to explore his world. Notice how he keeps checking that you're there. Set aside a play area for him where he can explore his world in safety. Place a small number of toys around him. Some within reach and others just a little further to encourage him to move. Show him how its done if he doesn't look like he is getting anywhere. Don't give him too many toys at one time as this can be a little overwhelming.

He will now tend to place himself in a variety of positions each day. He'll try to go from sitting to lying. Soon he'll roll and try to crawl. All of these activities are continuing to help his muscles to strengthen and develop.

He particularly needs to spend time on the floor at this age. Now that he is learning to move, he needs lots of opportunities to practice his new skills. Although baby walkers may seem like good baby sitters, they do not encourage crawling and walking. By spending time on the floor, your baby is learning to use all the muscles he needs for crawling, rolling, standing and walking. Some babies don't like being on their tummies, but it is still important to continue to place them in this position, so that they can practice these skills.

Place toys around him, just a little out of reach to encourage him to move.

Your baby will still enjoy sitting on your lap. From this position he can see everything that is going on around him, particularly if you are out visiting!

He particularly likes sitting in his high chair. This enables him to get a very good view of what is happening around him. From this vantage point he can easily see what mum and dad are up to. He still enjoys sitting playing with his toys, dropping them on the floor for mum and dad to pick up for him!

Where should baby play:

- Near mum and dad
- In a variety of positions each day
- On the floor
- On your lap
- In his high chair

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

As you are now aware there are many routine activities that you carry out with your baby every day which are ideal opportunities for you to play with your baby and help him to learn. These include:

Routine Activities:

- Nappy changing time
- Bath time
- Dressing
- Feeding

Nappy changing time:

You probably feel a bit like a contortionist, trying to control this wriggling worm so that you can change his nappy.

There are so many things that he can now do with his body. He is easily distracted by things that he can see around the room. "What else can I see" he says. Follow his lead. Talk to him about the things that he looks at. "can you see your toe, see it wriggle". If you sound interesting, you might be able to get him to stay still long enough to get the job done!

While you are changing his nappy he will enjoy the opportunity to play with different parts of his body. He still likes to suck his toes, (isn't he clever). Watch how he inspects the different parts of his body. There are so many wonderful things for him to learn about his own body.

Continue to use this as a time to play little games like "round and round the garden". But don't forget to keep the nappy handy!

Bath-time:

Bath times are such fun with an eight months old. He can now do so many things in the bath. He likes it when Mum, Dad, brother or sister joins in too. He enjoys watching all of the things that they can do in the bath. He loves the feeling of the water on his body. He can splash and kick. He can watch the bubbles, that Mum blows, float through the air. He enjoys watching the water as it pours from a watering can. Watch the look of delight on his face as you the toy you have pushed under the water re-appears. Bath activity toys can be useful to teach cause and effect skills.

Notice how he listens intently to you as you talk about what he is doing and seeing. He is learning the words that go with his actions and the things around him. Talk to him about his body as you wash him, so that he will learn the names of his body parts. For example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

Dressing:

Dressing your baby is also a bit of a challenge at this age. He's very busy wanting to always be on the go. Remember to talk about the things that he is showing an interest in. Through your conversations, he is learning the words that go with the things that he sees.

When he looks at you and the things around the room, pretend that he is telling you about the things that he sees. Say what it is that you think he has said. eg. "Are you telling mummy about your dress?". "Yes, I can see your toes".

Ask him what he wants to wear. Pretend that you understand his answer - "you want to wear your jumpsuit today".

Meal-times:

Meal times continue to provide you with an ideal time to interact with your baby. Now that he is eating more solid food, he'll enjoy the opportunity to explore his food, feeling its texture with his fingers. This is also a good opportunity for him to practice his pincer grasp in safety, he will have lots of fun picking up small pieces of food with his index finger and thumb.

He will also enjoy trying to feed himself. Give him his own spoon to play with while you feed him with another. This will help to develop his independence. Remember it is important to sit at eye level with him while you are feeding him so that he can easily maintain eye contact with you. This will not only help his feeding but will also enable you to have a "chat over dinner".

Continue to talk to him about what you are doing "nice bicky, eat it up, all gone", " more juice". When he has finished his dinner let him play with the spoon and empty bowl. He will enjoy hearing the sounds he can make.

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Gardening:

Continue to take your baby outside with you while you hang out the clothes or do the gardening, don't leave your baby inside. He really benefits from the opportunity to go outside and explore! Now that he is starting to move, you will have to keep a good eye on him, he'll be off his rug before you know it. Place a few toys next to him to help to keep him occupied.

There are so many things that your baby can see and hear while he is outside. Watch as he listens intently to the birds singing above him in the tree. Remember to talk to him about the things that are around him "can you hear the bird?... that's a mummy bird... what a lovely song". Wait for your baby to say something and then continue on as though you are having a conversation about the things that you see.

Cooking and doing the dishes:

Don't forget to let your baby watch you while you work in the kitchen. Now that he is starting to move, it is very important that he is restrained in his highchair while you are cooking so that he doesn't get hurt. He will enjoy watching all the different things that you do while you cook. You probably don't realise how many different actions you make while you cook: you stir, chop, cut, wash, wipe, twist, pull. As you talk about what you do, your baby is learning about all of these different actions.

Going for a walk:

Notice how he now tries to tell you about things as you walk along. Even though he can yet use words, pretend that you understand what he is saying.. "yes, that's a big car". As you walk along point out to your baby things that you can see and hear. "Look, there's a puppy dog". If you notice your baby looking at something, tell him what it is, "that's a bird". If your baby vocalises while looking at something, pretend that he has told you something or asked you a question and answer him.

For example:

baby: bu (while looking at a car)

dad: that's a car, brm brm

Playing games with music:

Does your baby enjoy playing games that involve music. Notice how he wriggles and now looks at you when you turn the music off as if to say " turn it back on dad". He is learning the connection between you and the music coming back on. He is learning to use you as a tool to turn on the music.

Watching Television:

Your baby may be starting to take an interest in television. Although it is not good for your baby to sit in front of the television for several hours each day, it can provide useful stimulation to your baby if used properly.

You will find that your baby will become distressed if left in front of a television set for too long. Television shows made for young children such as Playschool and Fat Cat are of most benefit to your baby. Sit down with him while he watches and join in the action songs. You can learn lots of good songs to sing with him through these shows.

Reading books:

Books are very fascinating at this age. Notice how he is starting to look where his own hand is as he manipulates the book. Encourage pointing, by pointing to the pictures as you read the book to him. Pretend that he is pointing when he touches the book. Talk to him about the pictures that he touches. You don't have to stick to the words in the book, you can also make up your own story to go with the pictures.

Sit your baby on your lap with the book in front of you both. Tell him about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will help to develop your baby's cause-effect relationships and turn-taking skills.

Playing games and singing songs:

Through action games and songs your baby can learn many different skills including: to attend to what is happening; to take turns; to join in an activity with someone else; to anticipate what is going to happen next. Through these games your baby will also learn more about cause-effect relationships (that he can keep the game going by doing something).

Help your baby to participate in the song or action game by gently moving his hands. After a few goes at doing this, stop half way and wait for him to do something before you continue. Notice how he is starting to perform part of the game by himself. Remember to be close enough to your baby so that you can make eye contact.

Fish alive:

One two three four five,
Once I caught a fish alive,
Six seven eight nine ten,
then I let him go again.

Why did you let him go,
Because he bit my finger so.
Which finger did he bite,
This little finger on the right.

SPECIFIC ACTIVITIES THAT HELP BABY TO LEARN:**To encourage listening:**

- continue to talk to him about things that you are doing
- make different noise makers for him to play with (try an old spoon and a plastic container for a drum!)

- spend time out-side and in different environments so that he can hear lots of different sounds (the beach, a B-B-Q, shopping, going for a walk around the neighbourhood.)
- read books and magazines to him
- sit him on your lap or near you when you are talking to friends
- let him talk to Grandma or his friends when you are on the phone
- sing songs to him, especially action songs, help him to do the actions
- say his name when you enter the room
- play music on the radio or record player
- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- talk to him about noises that are happening around him (ie the keys rattling at the door.. "Daddy's home".
- continue to use lots of inflection in your voice.

To encourage looking:

- continue to give him bright colourful objects to play with
- point to different things in his books and in magazines
- sit baby on your lap while you are reading, encourage him to look at the pictures
- point to pictures using his hands, talk about what you are pointing to.
- take him for walks so that he can see all the wonderful things in his back yard and in the neighbourhood, point to different things that you see.
- sit him on your lap while you watch TV, he'll enjoy all the colours and movement
- talk about things that he reaches for, pretend he is pointing them out to you.

To encourage communication:

- talk to your baby!
- respond to each of his communication attempts, remember that he is now intentionally communicating with you!

- wait for him to look at you before you respond to him
- wait for him to look at you before giving him something that he wants.
- wait for him to take a turn in the conversation before continuing.
- use lots of variety in your speech to maintain his interest
- encourage other people to talk to him
- remember that he should be using vocalisations more as his turn in the conversation,
- get down to his level so that he can make eye contact with you
- talk to him about things that he is playing with
- when he looks at you while playing with a toys, act as if he is telling you about it
- when he looks at you and pulls away from something he doesn't want, say what you think it is that he is telling you "no mummy, I don't want that"
- wait for him to look at you and move his body before picking him up - "you want up?"

To encourage object permanence:

- partially hide toys amongst the bubbles in his bath, encourage him to find them.
- cover his toy with a see-through cloth while he is holding it.
- cover a small part of a toy that he is reaching for with a cloth that he can't see through. Once he gets the toy repeat this game, each time covering a little more of the toy until it is completely covered..
- play peek-a-boo with his face washer or bib.
- encourage him to search for toys that he drops
- place favourite toys in see-through containers

To encourage an understanding of cause and effect:

- encourage him to play with toys that make different noises or that require different actions to make them work.
- when he vocalises, go up to him and talk to him about what he is doing.

- encourage him to kick his legs and bang the water with his hands so that he can see the splashes that he makes with his actions.
- show him objects that do different things, eg carousel,
- give him a spoon to bang on a container
- build a tower of blocks and show him how he can knock it over
- encourage him to push to button on a Jack-in-the-box to make it pop up

To encourage problem solving:

- wind up a toy to activate it. Wait for him to do make an action or vocalisation before winding it up again.
- give him a block to hold and then offer him a second one. Encourage him to take it in the other hand.
- give him a small ball to hold in one hand. Then give him a big ball to hold. Show him that he needs to use both hands to hold it.
- tie a string to his favourite toy. Put it out of reach. Encourage him to pull the string to get the toy.
- place a favourite toy on a cloth, encourage him to pull it to get the toy
- wait for him to look at you before giving him a toy that is out of reach.
- place toys in open containers, encourage him to tip them over to get the toy out.
- encourage him to move to get out of reach toys.
- push an orange or ball along the floor to encourage him to move after it.

To encourage play:

- give him toys that he can manipulate, particularly toys with interesting details.
- encourage him to rotate toys to view their different sides, show him how its done!
- encourage him to put his fingers in the nooks and crannies of his toys.
- sit down and play with him, it gets a little boring playing by yourself sometimes!
- play give and take games with him

- show him how to bang toys together
- blow cardboard tubes to make a good noise.

To encourage imitation:

- copy sounds that he makes, then wait for him to make the sound and repeat it.
- copy actions that he makes- what a fun game!
- copy facial expressions that he makes.
- continue to sing songs with actions. Help him to also carry out the actions. Gradually reduce your help.
- make funny noises for him. Encourage him to touch your mouth so that he can learn how the sounds are made.
- help him to do different actions and gradually reduce your help.

THINGS THAT MAKE LEARNING FUN:

Now that your baby is eight months old, he will enjoy playing with lots of different toys. Toys at this age should encourage him to explore, take notice of detail, solve problems, learn about cause and effect and develop object permanence.

There are many things from around the house that will provide him with hours of enjoyment. Find an old bag or box and fill it with interesting things like old keys, colourful plastic bangles, plastic measuring spoons, scraps of material, empty film canisters, egg rings etc. He'll spend hours enjoying what he can find in his box of tricks. Later he'll not only take them out but will try to put them back in! Ice block trays, empty cotton reels, and card board tubes are all fun to play with.

He will enjoy playing with many of his easier toys but will benefit from some new ones. Remember to try your local Toy Library, they have lots of interesting toys for you to borrow.

Toys that are appropriate at this age include:

- Toys to bang eg xylophone, drum, pegs
- Toys to push - balls, large plastic car,
- Books to feel and look at

-
- Toys of different sizes and shapes- some that need one hand to hold, others that need two
 - Colourful blocks to stack and knock over
 - Bubble makers (for mum and dad to blow!)
 - Interesting toys like carousels, pop-up-toys, Jack-in-the box
 - Toys with buttons to push and knobs to turn, such as activity centres
 - Toys to pull- like Walking caterpillars (or tie a string to any interesting toy that he can pull along).
 - Music box.

LEARNING TO COMMUNICATE

SESSION TEN

PARENT HANDBOOK

DEVELOPMENT AT TEN MONTHS:

Many changes have occurred in your baby's skills over the last few months. Most notably your baby is becoming much more active and is interacting more with his environment.

MOTOR SKILLS:

At around 10 months, you will begin to notice a major change in your baby's motor development. He is starting to move around more by himself. He can now get to where he wants to go by himself. He will often use a variety of ways of getting around, including crawling, rolling, shuffling on his bottom, and stepping around the furniture. You will notice that he rarely stays still for very long, his world is much too interesting for that!

It takes a lot of effort for your baby to move around at first. It's a bit like when you first learnt to drive a car, you needed to think about what you were doing, where to put your foot etc. As it was for you, it will soon seem like second nature to him.

When your baby first starts to pull himself to standing, he will have difficulty getting down and may fall back with a thud. You can help him to learn to balance by encouraging him to pull himself up while holding on to a small chair or small table. Practicing standing and holding on will help him to stand alone when he is stronger. You can also encourage him to take his first steps by holding his hands in yours and moving slowly backward. A baby walking trolley (that he can push) is very useful for encouraging walking. Remember to choose one that is very stable. He can use it to push around his favourite toys. If possible do not use the walkers that the baby sits in, as these tend to discourage him from supporting his own weight and balancing. They tend to hinder the baby's walking rather than helping it.

By 12 months, he may start to be more adventurous and take his first tentative steps by himself. This is such an exciting time for both baby and you. Watch the look of utter delight and surprise as he takes his first steps toward you. It is important, however, to remember that babies will vary in age at which they begin walking, it could be anytime from 10-18 months.

At 10 months, not only can he get around more easily, but he has developed much greater control over his hands. He can now reach and hold things much more easily. Again this enables him to explore things in his environment more. Watch as he holds his toys, bangs them, rotates them, swaps them from one hand to the other, drops them, shakes and performs

many other different actions on them. Each day he learns something new that he can do with his hands.

Because he is now able to explore objects more with his hands, you will notice that he doesn't mouth toys as much as he did when he was younger. He will still put toys to his mouth, but will spend more time playing with them, putting his index fingers into their small holes, banging them together, rotating them to view their various sides, shaking them etc.

As his hands become stronger, he will begin taking an interest in opening cupboards, doors and containers. He will also gain greater control over his fingers and will start to use his thumb and index finger to pick up small objects like peas rather than scooping them up into the palm of his hands. He will be fascinated by picking up small pieces of food, bits of fluff off the carpet etc. You need to watch him very carefully at this age, because he will tend to pick up small things and put them into his mouth. Make sure the family don't leave little things around for him to find.

At this age he is only just learning to release things. He may offer you toys but doesn't yet realise that he has to let go of an object in order to give it to you.

Motor Skills (at 10 months):

- has better control over his body
- is much more mobile
- is using a variety of ways to get around-
- rolling, crawling, shuffling, walking around the furniture
- is using his hands much more to explore objects
- is using a variety of actions on objects
- is beginning to use his index finger
- is consistently reaching

Motor skills (at 12 months):

- is much more mobile
- is pulling himself up on the furniture
- enjoys walking around the furniture
may have taken his first steps by himself
- is mainly getting around by crawling and walking
- is very co-ordinated with his hands
- uses his hands to explore new objects
- uses many different actions on objects
- is using his index finger more

LOOKING:

This is the age of the true explorer. Everything is fascinating to your baby at this age. We tend to take most things in our homes for granted because we have seen them all so many times before, but to your baby, the kitchen, the lounge room, his bed room, the yard, are like Aladdin's magic cave, with so many wonderful things to learn about. Now that he can move around more, he is able to explore his environment much more easily. From his different positions, (sitting, crawling, standing), he can gain many different views of his world.

Remember that he can now easily get into places that he couldn't reach before and this can lead him to danger. Low cupboards with sharp objects or chemicals, stairs, appliance cords, the iron, table cloths dangling from the table are all things that now attract him. It is essential to ensure that he doesn't get hold of them. Cupboards need to be locked in some way, cords put out of reach and stairs blocked so that he can't get near them.

His increasing visual skills also allow him to explore his surroundings more. He can now easily see quite long distances away such as across the room, or to trees when out in the garden. Notice how he watches people from a distance. He is now much more attentive to actions occurring around him and will crawl or move to join in. His developing hand skills enable him to explore objects more easily. Watch as he rotates toys, examining their detail. He will finger small holes and touch parts of contrast. He is taking much more interest in small details, like the eyes on a doll, or the coloured dot on his tee-shirt. He enjoys touching your face, feeling your eyes and mouth.

Over the next few months you will notice him beginning to attend to things for longer periods of time such as the dogs playing in the yard, dad washing the car etc.

He still enjoys looking at faces and now easily maintains eye contact with you when you are having little conversations. Notice how he is using pointing and eye contact more to direct

your attention. He is also starting to look where you point. You will notice this occurring more over the next 2 months. 12 month olds are very good pointers! Over the next two months he will begin to take much more interest in books. He will not only enjoy touching the book as you read it but may also begin to look at the pictures as you point to them.

Looking (at 10 months):

- is exploring his environment more
- is more interested in detail, rotates objects to
- view various sides
- can see clearly across a room
- is still attracted to your face
- is attracted to bright colours and contrasts
- is able to maintain good eye contact
- is using pointing and eye contact to direct
- attention
- is beginning to look where someone else points

Looking (at 12 months):

- is looking to where someone else points
- is frequently directing other people's attention by pointing
- is very inquisitive

LISTENING:

Your baby is still very interested in sounds at this age, especially your voice. He still prefers sounds which have lots of variety. He enjoys listening to you sing and talk. He now listens to and tries to copy a larger number of sounds.

He is now able to work out where sounds are coming from and will sometimes move to find the sound source.

Over the next few months he will begin to recognise the different sounds that he hears. He will learn to distinguish people's voices and will remember the sounds of favourite toys or animals.

Listening skills (10 months):

- prefers sounds with variety
- can work out the direction from which sounds are coming
- is attracted to the human voice
- is trying to copy sounds that he hears

Listening skills (12 months):

- enjoys complex sounds
- is beginning to recognise different sounds and voices
- is becoming more accurate in copying sounds that he hears

UNDERSTANDING OF THE WORLD:

Over the last 10 months, your baby's knowledge of the world has significantly increased. His whole world is growing rapidly each day.

Object Permanence:

He now consistently looks for and finds objects which are hidden under a cloth. He will search for an object which he has dropped on the floor. This is a great game for Mum to play. He is starting to signal to others to get objects which have fallen from his view, and will point in their direction.

He will enjoy games where you hide toys in containers or bags and he has to put his hands in to get them out. He will also enjoy playing hide and seek. Over the next few months he will

start to hide from you. Think of all the fun you will have chasing each other around the house, hiding behind the lounge or under the table.....

If he hasn't yet developed this skill, you can help him by playing games like peek-a-boo or hide and seek. Partially hide objects and help him to find them. If he is holding a toy he likes, cover his hand and the toy with a cloth. In this way he can still feel the toy even though he can't see it. Pull the cloth off the toy while he is looking. You can also do this in the bath by helping him to hold toys under the water.

By 12 months he will easily recognise favourite toys and people and will direct attention to them.

Object Permanence (at 10 months):

- cries when you leave his sight
- has developed little "images" of familiar people/objects in his mind
- searches for objects that fall out of sight or that are partially hidden
- uncovers hidden objects

Object Permanence (at 12 months):

- easily recognises familiar objects and people
- plays hide and seek

Cause-effect relationships:

Your baby is still learning about cause-effect relationships. Every day he is learning more that he can have an effect on his environment, that by doing certain things, he can cause other things to happen.

He is now very busy working out what makes things work. Watch him as he explores a new toy, pushing a button that makes a noise. He uses his hands now in many different ways to find out what he can make his toys do. Roly-polies and jack-in-the-boxes are good for helping him to learn that if he does something he can make something else happen.

Watch as he learns that if he blows in a paper tube he can make a good noise like a trumpet.

Remember that you can help your baby to understand cause-effect relationships by providing him with opportunities to experience them, such as giving him toys that he can easily activate and by responding to his actions.

By 12 months he will have a much better understanding of the effects he has on his environment. He will know how to attract your attention using his body and objects around him. He will repeat things that other people laugh at, sometimes much to your dismay!

Cause and effect relationships (10 months):

- knows that he can make things happen through his actions
- is able to easily activate simple toys such as a roly-poly
- is starting to be able to re-activate more complex toys

Cause and effect relationships (at 12 months):

- enjoys re-activating more complex toys
- enjoys watching the effects of his actions
- repeats actions that make people laugh

Problem solving:

Your baby's ability to solve little problems has increased significantly over the last few months. He has learnt that not only can he use his body to get things that he wants, but that he can also use other people. He has developed a connection between people and objects and realises that he can use other people to help him to get what he wants.

He now knows that there are things that he does not want and will turn away from them. Sometimes he might push them away as he looks at you. He's saying "no, I don't want it, mum".

He now not only reaches toward things that he wants but will move toward them if they are out of reach. Watch as he chases a ball that is rolled in front of him. At this age he enjoys following objects. A bright coloured car or a toy which rolls and makes a noise may particularly interest him.

Some toys need two hands to make them work. At first he might try to pick up a large toy with one hand but will quickly learn that in order to pick it up he needs to use both his hands. Again he has solved a little problem.

A favourite game is dropping things on the floor and signalling to Mum that he wants her to pick them up. Again he has learnt that he can attract Mum's attention by dropping things on the floor.

By twelve months he will have learnt that he can get Mum or Dad to make interesting things happen again, for example, he will hand Mum or Dad a wind up toy to make it play again.

There are so many little problems that he will learn to solve each day. He will enjoy solving them. He will learn that if he is holding something in both hands, he needs to drop one in order to pick up a third toy; or that he has to push one object out of the way to get another one, or pull a cloth to get what is on top of it; or pull string to get a toy tied to it.

Problem Solving (10 months):

- gradually increasing
- will crawl to get something that he wants
- turns away from things that he doesn't want
- has developed a connection between people/objects
- now realises that he can use other people to get what he wants
- realises that he can use objects/toys to get other people's attention
- often uses tools such as strings/cloths to get what he wants (eg. pulling a string to get a toy).
- learning to solve lots of different problems

Problem solving (12 months):

- spends much of the day solving little problems
- recognises that he can signal to other people to help him to get what he wants
- is much more independent

Imitation:

By ten months you will notice that your baby is attending more to the sounds and actions you make and is trying to copy them. He enjoys copying simple sounds that you make such as "bubub" and simple actions like banging on the table. He is also starting to copy more complex actions and sounds. He enjoys playing copying games. Watch as he tries to join in the sounds and actions of Twinkle Twinkle Little Star or pat-a-cake. His attempts to copy you are becoming much closer to yours. As we've said before, it is through imitation that your baby learns the words that we use to communicate to each other. You can play copying games

anywhere- in the bath, splashing or pouring water, banging on the table, pulling different faces.

Imitation(10 months):

- able to copy simple actions such as banging
- able to copy simple sounds
- starting to copy more complex actions and sounds.

Imitation (12 months):

- able to copy more complex sounds
- beginning to copy words, although not accurately
- enjoys copying more complex actions eg. those which go with songs such as twinkle twinkle little star

Play:

Now that your baby has gained better control over his hands, you will notice a significant change in his play. To him everything is a play thing including kitchen utensils, an old magazine, Mum's knitting! Remember that it is through play that your baby learns about his world. Initially your baby only used a few actions when playing with objects such as holding them or mouthing them. Now that he has greater control over his hands and is able to attend more to the detail in toys you will notice a change in his play. He uses a lot more variety in the actions he uses on objects, he will rotate them inspecting their various sides, he will shake rattles, push buttons, pull strings and cloths, finger holes and other details, crumples paper. He is starting to combine objects. He will enjoy playing with containers like card board boxes, egg cartons and ice cream containers. He can put lots of different things in them like dolly pegs, old keys, empty cotton reels and some of his blocks. A old tissue box will bring him much joy as a post-box.

Play(10 months):

- much more interested in toys
- using more variety in his actions on objects
- starting to combine objects, putting things in, taking them out

Play (12 months):

- is combining toys more in his play, putting toys in and out of containers
- using more variety in his actions
- beginning to use functional play, for example, pushing a small car, making a toy cow walk

COMMUNICATION SKILLS:

By 10 months your baby has started to truly communicate. Over the past 10 months he has been learning the rules of communication. He has learnt the importance of eye-contact and taking turns in a conversations. Watch him as he talks to you. Notice how good his turns are becoming. He is using vocalisations more in response to your vocalisations. He is also using much more variety in his vocalisations and often appears to be copying the sounds that you make. You probably have also noticed that he practices his sounds while he plays. He spends a lot of time experimenting with sounds, learning how he makes them. At this stage he is using many more consonants and is stringing sounds together more. Remember that you can help your baby to learn about speech and sounds by: talking to him; letting him touch your mouth; encouraging him to touch his own mouth; and by letting him have quite times to experiment with sounds.

Now that he has developed a connections between people and objects, you will notice that he is using a greater range of functions in his communication attempts. He will now request objects and actions, he will comment on things as he plays, he will reject actions and things that he doesn't want.

Watch as he tries to signal to you to get something that he wants. He will reach toward it at first, if he isn't successful, he will look to you and then reach back to it. Sometimes he might also vocalise to you as he reaches toward things that he wants.

He is also learning that he can use things to attract your attention. Over the last 2 months you will have noticed him talking to you more about what he is doing. Listen as he vocalises while playing with his toys. As he looks at you and vocalises, remember that he is telling you about what he is doing. Because he isn't yet using words, it is sometimes difficult to tell if he is just commenting on something or asking for something. When he looks at you and points to a toy, he is most likely asking you to get it for him. If you wait before giving it to him and he doesn't get impatient, he was most likely only commenting to you about it. Similarly, sometimes he might hold out a toy to you. If he lets it go, he is most likely giving it to you. He won't let it go, he is most likely only showing you.

Now that his communication skills are more effective, he will reject more effectively by giving you eye contact and shaking his head with a stern intonation. Sometimes he might push away an unwanted object while looking at you and shaking his head, or try to get away from you.

At around 12 months your baby may begin using his first words to signal to you in his communicative attempts. This is one of your baby's most exciting achievements. He will start to use words to express all the different functions he previously expressed non-verbally, that is with actions and general vocalisations. He is learning the power of words!

By 10 months you will notice that he is starting to recognise some familiar words, such as mummy or daddy or his own name. He is learning to associate the words he hears with the things in his environment. Watch as he searches when daddy's name is spoken. Through your conversations with him he is learning the connection between words and objects, actions and people. By 12 months he might be able to point to his nose or to the dog if you ask him. He might even be able to follow some simple instructions such as "give me the ball".

Your baby is continuing to develop his turn-taking skills. At 10 months, he is much more consistent in his turns, he is overlapping less with your turns and is also initiating turns more. He particularly enjoys playing turn-taking games such as peek-a-boo or pat-a-cake. These games will help him to develop his turn-taking in conversations. He is also starting to play more turn-taking games with toys.

His joint attention skills are also developing considerably by this stage. He now not only looks where his own hand is but is starting to direct your attention more. He is also starting to look where you point. By 12 months his pointing skills will be much more developed and he will easily look to where you point.

Communication (at 10 months):

- eye contact is continuing to improve
- using toys to get your attention
- is now aware that you can help him to get things that he wants.
- taking turns more in conversations and play
- starting to copy the sounds and actions that you make more
- enjoys turn-taking games like pat-a-cake
- generally making more sounds
- making more consonants like "m" and "b"
- enjoys experimenting with sounds
- interested in his own mouth and your mouth
- beginning to understand some familiar words

Communication (at 12 months):

- is understanding more words
- is starting to copy more sounds and words
- may have said his first word!
- enjoys directing your attention, has a good pointing finger.
- enjoys experimenting with sounds
- is combining sound more with his play with toys

HELPING YOUR BABY TO LEARN:

As you have learnt over the past 10 months, everything you do can help your baby to learn.

WHERE SHOULD BABY PLAY:

Playing near you is still very important. Although he is more mobile now and wants to join in things that are happening around him, he will develop and explore more if he is secure in the feeling that you are close at hand if he needs you. The best place for baby to play is still near you!

Remember that it is important that your baby has the opportunity to play in a variety of environments each day. Although a play pen is useful for keeping baby safe when you can't keep an eye on him, he should not play in there by himself for long periods of time. Playpens can limit his ability to explore his environment and thus his ability to understand the world in which he lives.

Where should baby play:

- near you
- in a variety of environments

ROUTINE ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Your baby's new found mobility will bring new challenges to routine activities such as nappy changing, bath time, meal times. Some-times it is almost like wrestling a monkey or a snake. Now you find that you have a squirming, wriggling little creature to deal with. Although these times still provide you with ideal opportunities interact with your baby, they will be different because he is taking a more active role in them.

Nappy changing time:

Do you realise that you have changed at least 2000 nappies by now? What a lot of nappies! Think of all the things your baby has learnt during these times spent with you. He has learnt to look at you when your talking and to take-turns in your conversations using his body and his voice. He has learnt to attend to you and to listen to your voice.

As you now know, nappy changing doesn't have to be an unpleasant chore, it can be wonderful opportunity to talk and interact with your baby. Remember to continue to talk to

him as you change his nappy, asking and telling him about his body and his actions. He still enjoys having a kick with his nappy off.

Bath-time:

Bath-time with a 10 month old is one of life's great joys! Your baby takes so much pleasure from his bath, that it is hard for you not to also enjoy it. Now that he is more active you will need to keep a very keen eye on him. He'll try pulling himself up in the bath, rolling, sitting, crawling. Non-slip mats or stickers are essential for this age group.

Safety tip: Try to establish rules for the bath early, such as "no standing up unless your getting out of the bath".

Watch as he gets excited with anticipation as he hears the water run for his bath. Sometimes you might hop in the big bath with him. This will give him the security to be a bit more adventurous, like lying down in the bath.

A favourite game is watching mummy or daddy blowing soap bubbles in the air. See how excited he gets as the bubbles float down. He may even try to catch them. Watch the look of surprise as the bubbles burst when he touches them. He may even look at you and vocalise in order to share this experience with you.

He will also enjoy splashing the water and will love to take turns doing it with you. Who can make the biggest splash?! Remember, to talk to your baby about his body parts as you wash him, for example, "mummy wash your face", "clean those feet". You can also play games like "this little piggy" or sing songs like "rub-a-dub-dub". Bath-times are good fun.

There are lots of things your baby can learn while having his bath. He can learn about cause-effect relationships by watching the water splash as he hits it with his hands or kicks it. He now has lots of fun with toys in the bath. He can watch them float, tip water out of them, sink them and push them along the water.

Dressing:

It's a little hard at times to dress a ten month old, as you're probably now well aware. He's much too busy to want to hang around while you put on all his cloths. He'll wriggle and squirm, twisting to get away and into all the wonderful things around him. Try making it into a game, it may help to keep his attention longer. You can help him to develop his object permanence skills by encouraging him to watch for his hands as they slip through his sleeves or his toes as they emerge from the bottom of the leg of his pants. This will also help him to learn about his body parts.

Continue to talk to him about what your doing, eg. "daddy putting singlet on ", "one arm in, other arm in"; "pull it down, there you go". It is through these games that he will gradually learn the names of his clothes and the actions that go with dressing. Now that he is more able

to make choices you can encourage this by giving him a choice of clothes to wear. eg. "you want dress or jumpsuit today?", pretend that your baby's vocalisation is her answer "you want dress, ok".

Meal-times:

By ten months your baby will be much more independent in his eating and will enjoy trying different finger foods, such as toast fingers, slices of fruit, celery sticks. This will not only help to increase his experiences with different tastes and textures but will also enable him to practice manipulating things with his hands and fingers. He'll have fun picking up squashed peas and other small pieces of food off the tray on his high chair. This will help to develop his pincer grasp. As we said earlier, he now enjoys picking up small things and putting them in his mouth. This is an important stage for him to go through in his motor development but it can be dangerous. What better way to let him do this safely than at meal times when your present and can keep a watchful eye on him?

Meal times are generally very social times. The evening meal in particular is a time when most families sit down together and chat about the events of the day. Don't forget to also include your baby in these activities. He'll learn so much by sitting with you while you have your meals. Often babies are fed separately from the rest of the family. Sometimes this is done, so that Mum can have her meal in peace. Maybe you could take turns in feeding baby during the evening meal, Dad one night and Mum the next. If you need to feed him before the rest of the family have their evening meal, why not give him his dessert or some finger food while your eating so that he can join in too.

Routine activities:

- nappy changing time
- dressing
- bath-time
- meal times

EVERYDAY ACTIVITIES THAT HELP YOUR BABY TO LEARN:

Now that your baby is more mobile he'll tend to follow you around the house as you go about your normal activities. He'll particularly enjoy the opportunity to go outside and play on the grass.

Gardening:

Now that he is more active he'll have lots of fun in the yard while you're doing the garden. He'll probably try to help. You'll need to watch him carefully, as he'll try to pick up bits of dirt and grass and put in his mouth. He'll have so much fun in the garden looking at the plants and flowers, listening to all the wonderful sounds that you hear out-side. While you're working, you can talk to him about what you are doing and all of the things that he can see, hear and smell:

Cooking and doing the dishes:

As you are well aware the kitchen can be a dangerous place for a baby, particularly one that is very mobile and inquisitive. Now that your baby is becoming stronger and starting to open cupboards and draws, you'll need to make sure that they are child-proofed. There is now a large range of safety catches available which you can use to secure doors and draws. It is probably Safest for your baby to be seated in a highchair while you prepare meals (don't forget to put his harness on). This will not only keep him out of harms way but will also give him a good view of what you are doing. He'll enjoy talking to you about what your doing. You can help him to learn about foods by showing them to him as you prepare them, talking about their characteristics eg. "look, a big long carrot" "yum" "Daddy likes carrots.

The shopping:

Although shopping is a little difficult with a baby in tow, (especially one who has started to grab at everything), an occasional shopping trip is good for your baby. It is best to try to pick a time when the store isn't too crowded as most babies aren't keen on crowds. Now that your baby is able to sit up steadily, you may be able to sit him in the shopping trolley. You will need to keep a very close watch on him as he can quickly fall out and seriously hurt himself if left unsupervised. From the trolley, he can get a good view of everything that is going on. He likes the feeling of motion as you push him around the store. Talk to him as you go round and select the items off the shelves, he will even try to help you sometimes!

Reading books:

Sit your baby on your lap with the book in front of both of you. Tell your baby about the picture on each page and if appropriate make noises to go with the pictures, such as "moo" for a cow or "brm" for a car. Wait for your baby to do something (make a noise, hit or chew the book) before going to the next page. This will not only help your baby to attend to specific things but will also help him to learn other skills such cause-effect relationships and turntaking skills.

Singing action songs:

Now that your baby is 10 months old, he will really start to enjoy participating in action songs. If you have been playing these for a while, he will probably start to try to carry out some of the actions himself, like wiggling his fingers to twinkle twinkle little star. He might even start to try to sing along with you. If he isn't yet trying to join in with the actions, you can help him to carry out the actions by moving his hands. After a few goes at doing this, stop half way and wait for him to do something before you continue.

Children's television programmes such as Playschool and Mulligrubs often have many action songs which you could play with your baby. He might also enjoy watching the programmes with you for short periods of time.

Here are some more actions songs for you to learn:

Round and round the garden

Round and round the garden,
like a teddy bear,
one step, two step,
tickling under there.

This little piggy went to market

This little piggy went to market,
This little piggy stayed home,
This little piggy had bread and butter,
This little piggy had none,
And this little piggy,
Went wee wee wee all the way home.

Incey wincey spider

Incey wincey spider climbed up the water spout,
down came the rain and washed poor incey out,
out came the sun and dried up the rain,
and incey wincey spider climbed up the spout again.

I'm a little teapot:

I'm a little teapot, short and stout,
Here is my handle, here is my spout.

When I get all steamed up, then I shout,
Tip me over, pour me out.

Going for walks and visiting friends:

Your baby's world is gradually expanding. Through going out for walks and visiting friends, your baby is learning that his world is not limited to your home. He is learning that the world is made up of lots of different people, in different shapes and sizes, different animals, buildings, plants and so on. Therefore it is important for both you and your baby that you don't stay at home every day. You both need to go for walks, to sit outside and to visit friends. By doing this you are enabling your baby to learn more about his world, you are providing him with opportunities to experience and learn new things.

Everyday activities:

- gardening
- cooking and doing the dishes
- the shopping
- reading books
- singing action songs

SPECIFIC THINGS THAT MAKE LEARNING FUN:

There are other things that you can do to help your baby to learn:

To encourage listening:

- talk to him about things that you are doing
- give him toys which have distinctive sounds such as a beeping toy telephone. See if he can recognise the sounds when he isn't looking.
- take him for walks so that he can hear all the different sounds in the neighbourhood, bring his attention to the different sounds he hears eg, "oh, listen dog woof"
- read books to him, make different sounds to go with the different things in the books.
- have him join in evening meals so that he can listen to your conversations.
- sing songs to him, especially action songs like *twinkle, twinkle little star*
- call him when you enter the room
- play music on the radio or record player

- dance with him so that he can feel the beat of the music
- make funny sounds for him, such as raspberries
- make sounds to go with different toys you are playing with eg brm for a car, moo for the cow.
- make sounds with him while looking into the mirror.

To encourage looking:

- give him objects with lots of detail to play with,
- point to detail in pictures, show him different things in the pictures eg the man's nose, the bird in the tree.
- sit him on your lap while you are reading, encourage him to look at what your pointing to and encourage him to point by moving his hand on the page.
- take him for walks and point out the interesting things that you see, encourage him to point too.
- sit him on your lap while you watch TV, again point out things that you see while you are watching "look, a big dog".

To encourage conversations:

- talk to your baby!
- when he vocalises to you act as if you understand what he is saying and "interpret" for him eg. "you want daddy do you?"
- expect him to give you eye-contact when he wants something.
- encourage him to look at you while you talk to him
- take turns with him, make sure that he gets a turn in the conversation (remember his turns should now always include vocalisations).
- remember to wait for him to vocalise before you take your turn in the conversation
- play turntaking games with toys, such as talking on a telephone, pushing a ball, pushing a car, banging on the table.
- encourage other people to talk to him
- when he is playing with toys, ask him about them

- if he looks at you while playing with his toys act as if he is telling you about them and again "interpret" for him. For example: "oh, you've got a big block" or "you're telling mummy about the car".
- if he doesn't want something, wait for him to vocalise and look at you before taking it away. Again "interpret" for him. For example: "no, I don't want any more, mummy"

To encourage Object Permanence skills:

- continue to play games in the bath, hiding toys amongst the bubbles
- blow bubbles in the bath, wait for him to indicate that he wants you to do it again.
- play hide and seek around the furniture, you can take turns crawling after each other.
- place blocks in different containers for him to get out, such as old nappy wipe containers, tissue boxes, tupperware, etc. Use solid containers that he can't see into so that when he puts his hand into the container he cannot see either the block or his hand.
- encourage him to put toys into containers and get them out again
- hide toys under cloths for him to uncover

To encourage problems solving:

- give him toys to play with that need an adult to wind them up. Show him how it works and then wait for him to look at you or give it to you before re-activating it.
- give him different sized toys (eg balls) to play with so that he can learn when to use one hand and when to use two hands.
- place strings on toys to encourage him to pull them.
- place toys in containers with lids (eg. an old shoe box). Show him how to get the toy out and then wait for him to indicate to you that he needs your help. Later he might be able to work out how to get the toys out himself.

To encourage the development of cause and effect relationships:

- give him toys to play with which require him to press a button, or push a lever to activate. Show him how they work.
- show him how to splash in the bath
- show him how to activate toys which make different sounds etc if you do different actions on them

- give him cardboard tubes to blow into to make into horns
- give him spoons to bang on different containers to make different noises.

THINGS THAT MAKE LEARNING FUN:

Toys are very important to the ten month old. Toys at this age should encourage the development of problems solving skills, object permanence and cause and effect relationships. We also want to encourage his functional play. He will have hours of fun finding out what he can make his toys do.

Appropriate play materials for this age group include:

- toy cars
- large rubber animals
- a doll of some description to feed, put to bed and give a bath
- action toys which require pushing, pulling or winding to activate.
- a music box
- lots of different containers with different sorts of lids, for example, egg cartons, plastic nappywipe containers, film canisters, plastic pavlova eggs, old tissue boxes.
- cardboard tubes out of which he can make trumpets (eg toilet rolls, old clingwrap rolls etc.)
- blocks to hold, throw, hide, stack, build
- books, baby ones, and homemade ones from cut out magazine pictures
- different size balls (to roll, throw, hide, roll)
- a toy telephone that rings
- a push trolley
- a cloth bag or old handbag with lots of interesting (but safe articles) such as coloured plastic bangles, crunchy paper, colourful lids, toilet rolls, old fashioned dolly pegs, spoons, plastic egg cups etc.