



Getting to Know Your Baby

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*The Special Start Training Program
Training in Developmentally Supportive Care
for Community Professionals & Caregivers*

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Getting to Know Your Baby

A Developmental Guide for Community Service Providers & Parents of NICU Graduates

Based on *FIRST*, Family Infant Relationship Support Training

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Introduction

This manual was developed to assist parents, foster parents and primary caregivers to learn how medically fragile and preterm infants communicate. Preterm babies are different from full term babies in that they have their own way of asking for help and signaling their needs. They demonstrate various kinds of behavioral cues that let caregivers know when they are tired and disorganized or feel relaxed, organized and ready to interact. Sometimes the meaning of these cues is clear, other times they may be more difficult to interpret.

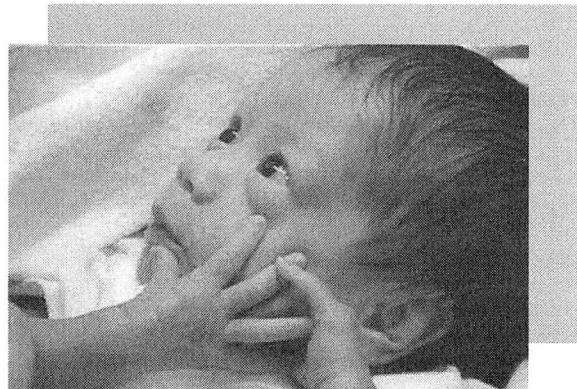
These cues are observed in four areas of behavior:

PHYSIOLOGY

MOTOR

STATE

SELF-REGULATION



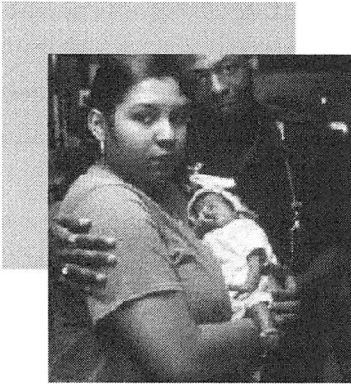
Behavioral cues of calmness, relaxation or readiness indicate stability or organization. Cues that signal a baby is not ready for interaction indicate stress or disorganization. Knowing how to interpret these cues will support the caregiver's efforts to be more sensitive and responsive to the baby. Reading and interpreting a baby's cues is a major part of a relationship with that baby.

It is important for caregivers to know that after medically fragile and premature infants leave the hospital they may be sensitive and easily stressed. With help, over the next 3-6 months babies will show fewer stress cues and more organized behaviors.

This manual will help caregivers recognize a baby's strengths and vulnerabilities. It will also provide developmentally supportive care strategies for your baby to gain more organized behavior. This can help improve your baby's overall development.

Developmentally Supportive Care

The signals that we are describing are part of a program called Developmentally Supportive Care. This program can begin in the nursery using the Newborn Individualized Developmental Care and Assessment Program (Als, 1984) and continue at home through use of Family Infant Relationship Support Training (Browne, MacLeod, Smith-Sharp, 2002).



The Basic Assumptions of this Program Are:

1. The family environment is the most important and consistent context in which an infant develops. Providing caregivers with appropriate information about their baby will support and optimize development.
2. Family members and other primary caregivers are considered experts in the baby when they take care of the baby. They know their infants and have information that can enhance their infant's health and development.
3. Developmentally supportive care is a collaborative approach that draws on the expertise, strengths, and resources of the family.
4. Infants continuously interact with their environment. These interactions have a lasting impact on the infant and the family (Als, 1982).
5. Infants are active players and collaborate in all of their interactions (Als, 1982).
6. Infants shape interaction by communicating through their behavioral cues. Caregivers play a major role by understanding and responding to these cues.

Developmentally Supportive Care

Which Infants?

Infants Born Prematurely

Any infant born earlier than 37 weeks of pregnancy is considered premature. The earliest age a premature infant can be born and survive is approximately 24 weeks of pregnancy. Premature infants may be healthy or sick. Those infants who spend weeks and months in the intensive care nursery may have some behavioral or developmental difficulty including behavioral disorganization.

Infants Born with Special Needs

Another group of newborns are infants born with genetic abnormalities, congenital syndromes, or medical complications. For example, infants with heart problems at birth may be very lethargic and may have lengthy stays in the hospital.

Infants Born at Term but Not Behaviorally Well Organized

Some infants born at full term may have some developmental difficulties. These include problems with self-regulation and self calming. If an infant is born unusually small for the number of weeks spent in the womb, he/she may have difficulty with behaviors and tolerance of environmental stimuli.

Infants Born to High-Risk Families and Environments

Infants raised in families with difficulties in their every day lives, health issues, or social problems may be at risk for developmental difficulties.

Physiological Behaviors: Introduction

Babies use many different kinds of cues to let us know how they are feeling. One category of cues is physiology, which is the way in which the organs of the body function.

The brain regulates body functions such as heart rate, breathing rate, blood pressure, and body temperature. A premature baby has immature organs regulated by an immature central nervous system.

Cues in the Physiology system include:

- * breathing rate
 - * heart rate
 - * skin color
 - * startles, tremors, twitches
 - * gastrointestinal behaviors (gagging, spitting up, hiccupping)
- (Als, 1982)*

In the early weeks of life most behavioral cues of the premature and sick newborn will be physiological. As the baby transitions to home from the hospital, some of these physiological cues may still be present, although most of them disappear during hospitalization as the baby recovers. They can reappear when a baby is very tired, or overwhelmed by the environment. They can be evident when baby has to use a great deal of energy for an activity such as feeding.

Organized physiology is stable breathing, stable heart rate, stable skin color, no gagging, spitting up, bowel straining, and no hiccupping.

Disorganized physiology is very fast or very slow breathing, or pauses in breathing that last 2 seconds or more. Skin color that is pale (white), dusky (purple dark), red, or covered with discolored blotches may be indicating stress. Startles, twitches and tremors are stress signals, as well as coughing, gasping, sighing, sneezing, yawning can be stress cues, if they are seen when the infant is upset, overwhelmed or exhausted. Pay attention to each baby's unique pattern.

Physiological Behaviors - Organized

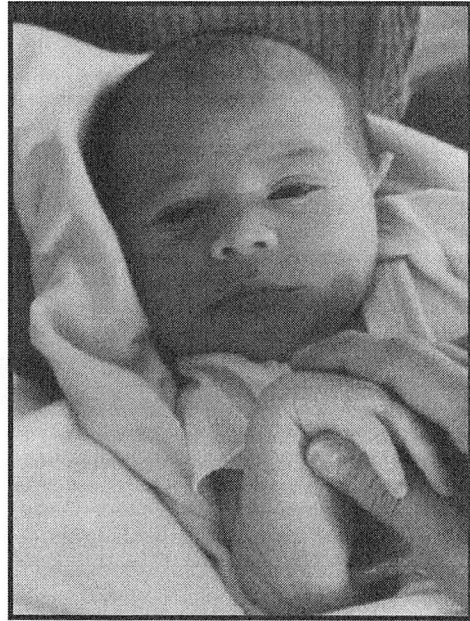
These are infant behaviors that communicate that he/she is ready to begin or participate in an activity and is feeling relaxed.

Color

Pink: Stable, pink coloring in face, trunk, and extremities with no changes.

Breathing

Regular: The breath-to-breath intervals are smooth and regular. A regular breathing rate is between 40 and 60 breaths per minute. There is no fast breathing or irregular breathing.



Gastrointestinal

Digestion: stable with appropriate burping.

Elimination: regular elimination patterns.

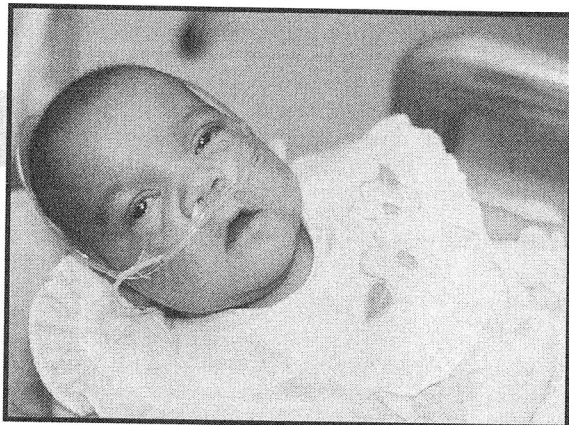
There are few tremors, startles, twitches, or other signs. It is normal for babies to occasionally spit up or hiccough. As the healthy baby matures these behaviors diminish.

Physiological Behaviors - Disorganized

These are disorganized or immature infant behaviors that communicate that he/she is NOT READY to participate in an activity or needs a break from activity.

Cough

The infant makes a coughing sound or has an observable cough.



Breathing

Irregular: The breath-to-breath intervals are variable, at times short and at others times longer. Breathing is also considered irregular if rate is less than 40 or greater than 60 breaths per minute.

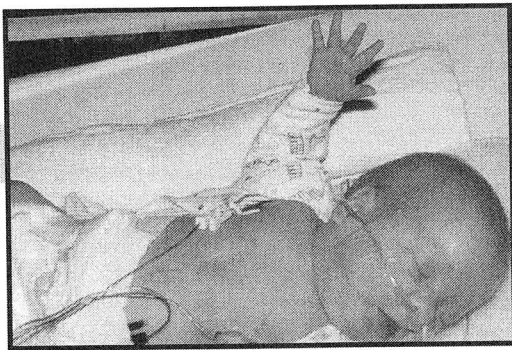
Gasp

A strong inspiration that is sustained or a burst of short inspirations without exhaling.

Physiological Behaviors - Disorganized

Startle

A sudden abrupt movement of the arms and legs away from the body and a quick return to midline. The neck may extend as the arms and legs move away from the body.



Tremor

Quivering of any part of the body, either whole body or body part.

Twitch

Abrupt, brief contraction of arm, leg, face or body muscle.

Sneeze

Expels air freely from mouth and nose in explosive, spasmodic fashion.

Adapted from Als, H. (1984) *Manual for Naturalistic Observation of Newborn Behavior (Preterm and Full Term)* The Children's Hospital, MA.

Motor Behaviors

Another category of baby cues is motor behaviors. These are visible signs of disorganized or organized states seen in:

TONE

POSTURE

MOVEMENT

A healthy full term baby is born with enough muscle mass/tone to maintain this posture after birth, but because of small muscle mass, immaturity, medical problems, a preterm or sick baby may not have much flexion.

Tone is the amount of tension and energy seen in a baby's body when resting.

When a baby is limp like a rag doll, he is considered to have low tone or "hypotonia". It is common for premature babies to be low in tone early on because they did not spend a full 9 months in the womb where tone develops.

As the baby matures, tone develops and the baby learns to curl or tuck his body as if curling up. Normal development of tone gradually develops first in the legs and moves up to the trunk and then to the arms. Therefore, the legs might be stronger than the arms at first. They will eventually both develop full tone.

Posture means the position of the arms and legs. Extension means that the arms or legs are stretched out.

Flexion is the opposite of extension and means that the body is curled with arms and legs curled in near the body so that the trunk is rounded. Soft, relaxed flexion usually is a sign of stability. Very tight flexion may mean a lack of balance between extension and flexion. Arching can occur when the muscles of the back and neck become too tight.

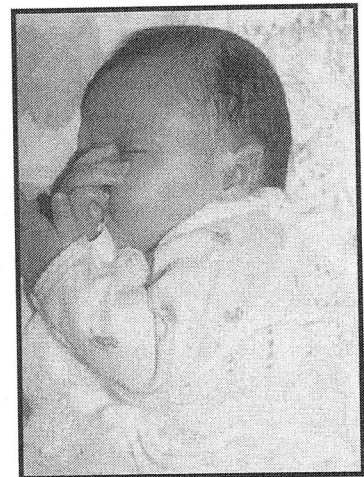
Movements vary from jerky and uncontrolled early on to smoother more controlled movements as the baby matures.

Motor Behaviors - Organized

*These are behavioral indications that a baby is **READY** for activity:*

Tone

Balanced: The infant will lie in a softly tucked position well rounded with softly bent arms, legs and trunk. He does not stiffen or become rigid or limp.



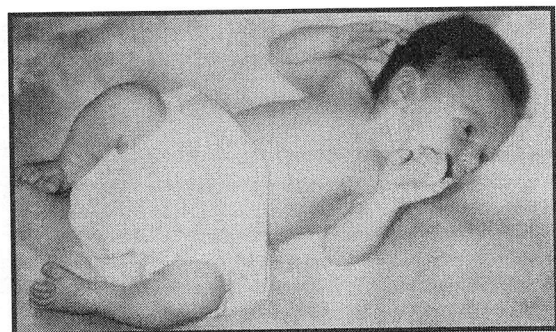
Posture

The infant is able to maintain a flexed relaxed posture with arms and legs tucked in close to the body and hands near face. No extensions are seen.

Movements

Smooth: Movements are fluid in the arms, legs and face and stay at a close range in cycles.

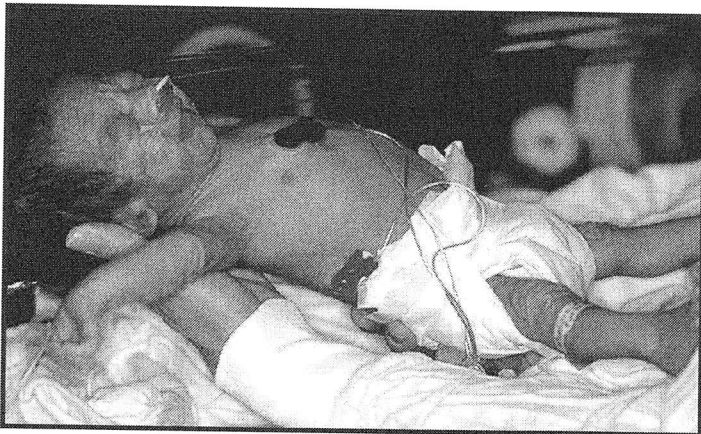
The infant is able to maintain a "flexed" (arms and legs bent) and relaxed posture with arms and legs tucked in close to the body and hands near face. No extensions are seen.



Motor Behaviors - Disorganized

These are behavioral indications that an infant is **NOT READY** for activity and may need to rest:

Tone



Hypertonic

Tone in any part of the body is high, stiff or rigid. The infant may be "hyperflexed" (tightly curled) or "hyperextended" (rigidly extended).



Hypotonic

Tone in any part of the body is low, flaccid or limp. Flexion or extension postural adjustments may be observed in the presence of low tone and may be a sign of exhaustion.

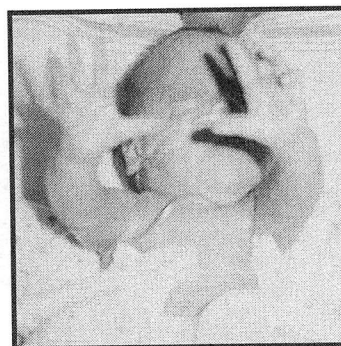
Motor Behaviors - Disorganized

These behaviors may indicate that the infant is NOT READY for activity and may need a break from the activity.

Posture

Arms Salute

The infant extends the elbow and flexes the shoulder. A salute is often accompanied with a finger extension or splay.



Sitting on Air

The infant's knees and legs are extended and hips flexed. If the infant is lying on his back, the legs will extend off the bed. Can also be observed in sidelying.

Toe Splay

Toes are extended and spread open.

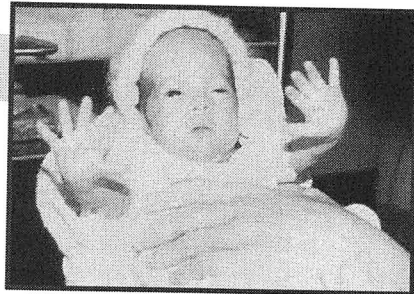


Motor Behaviors - Disorganized

These behaviors may indicate that the infant is NOT READY for activity and may need a break from the activity.

Finger Splay

The infant's hands open and fingers are extended and separated from each other.



Fisting

The infant's hands are tightly flexed to form a fist.



High Arm Position

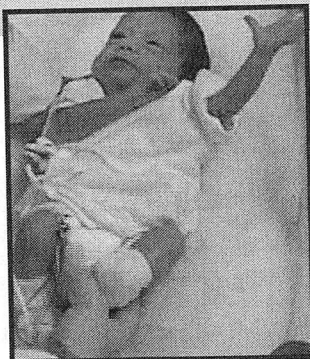
Infant's arms are extended over the head and/or may lay the forearm across the face in self-protecting or shielding manner.



Motor Behaviors - Disorganized

These behaviors may indicate that the infant is **NOT READY** for activity and may need a break from the activity.

Movements

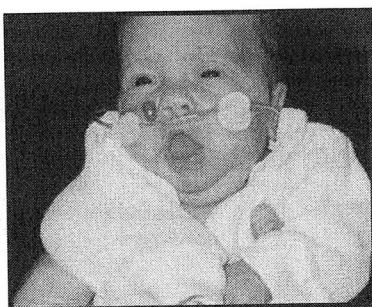
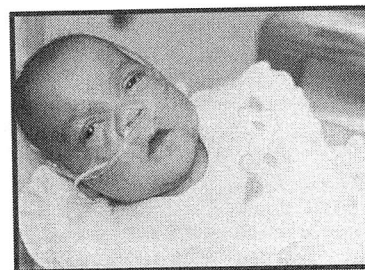


Squirm

Small writhing, wriggling motions of trunk, often accompanying movements of the extremities.

Jerky

Jerky movements of arms and legs.



Gape Face

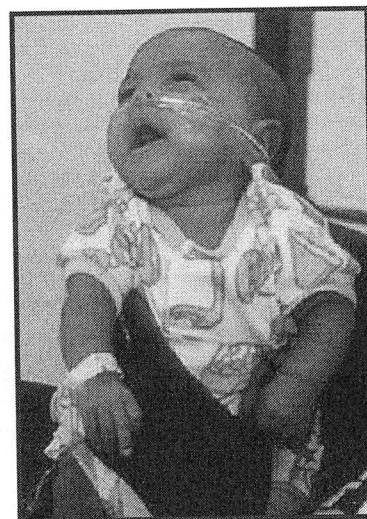
The infant's mouth is open limply, looking exhausted.

Tongue Extension

The infant's tongue protrudes beyond the lips. The extension can be maintained or repetitive.

Arching

Infant extends head and/or trunk pushing neck backwards.



Adapted from Als, H. (1984) *Manual for Naturalistic Observation of Newborn Behavior (Preterm and Full Term)* The Children's Hospital, MA.

State Behaviors

State behaviors refer to sleeping and waking cycles. These include the range of sleep including deep sleep, light sleep and drowsiness. The waking cycles include quiet alert, hyperalert, hypoalert, fussy and crying.

The patterns of sleeping and waking are important for babies to develop because these lay the foundation for later learning. Being alert and learning to interact and relate to people is one of the most important, as well as one of the most demanding tasks that we will ask of a recovering premature infant.

Premature infants come into this world ready to learn how to sleep, but they are not ready to learn how to socialize yet. Full term babies come into this world ready to socialize.



Premature infants may be sick, easily fatigued, and sensitive to their environment. Asking them to interact before they are ready may be too much.

Looking, breathing, and managing movements and positions simultaneously takes time for a new premature baby to learn. Full term babies already learn how to do this being born a full 40 weeks since conception. When a premature infant learns to look and respond it is an important accomplishment. Watching for signs of fatigue, stress or disorganization, will be important for awhile and may require taking a break or stopping the interaction or activity to give your baby a rest.

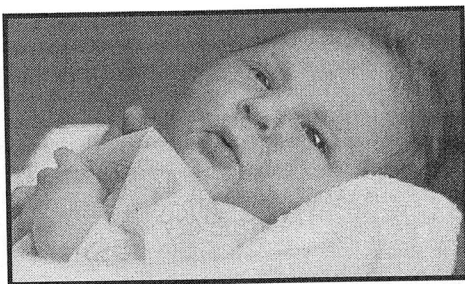
Gradually, with time and maturity, social play and interacting with people and the world around him/her, will become a consistent regular, smooth activity. You can help your baby by adjusting to the signals from your baby.

State Behaviors - Organized

Awake States

Calm Alert

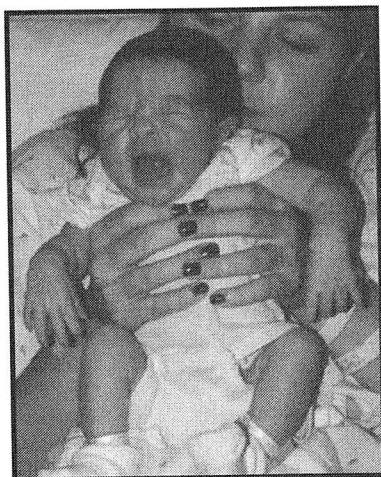
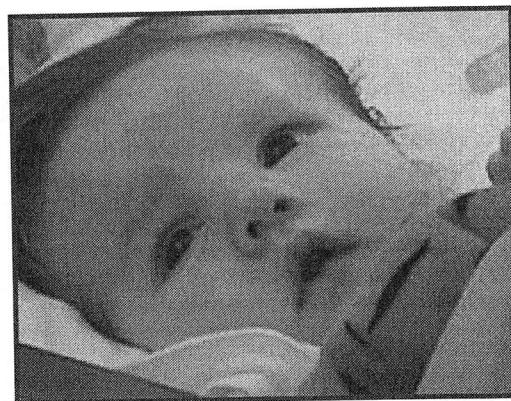
Regular breathing, little or no body movement. Alert with bright look.



Note: Baby shows ability to control visual and auditory stimuli by breaking gaze or looking away.

Alert & Focused

Regular breathing, eyes open. Appears ready for social interaction and information processing.



Fussy

Infant is active and awake with eyes open or closed. Considerable movement and is restless, but not crying.

Crying

Eyes may be open or closed and infant has irregular breathing. Rhythmic robust crying is present.

State Behaviors - Organized

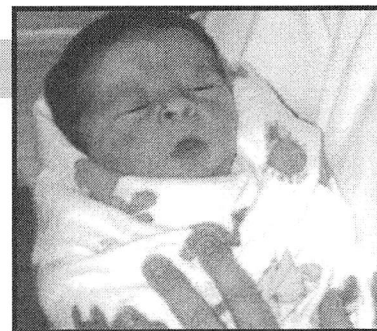
Deep Sleep

Regular breathing, eyes closed, no rapid eye movements, relaxed facial expression and no spontaneous movements.



Active Sleep

Irregular breathing, eyes closed or partially open; rapid eye movements seen, mild sucking or low level of activity may be observed.



Drowsy Sleep

A transition state. Infant is trying to awaken or sleep. Breathing is irregular and eyes may be open or closed. Some movement present.

Sleep is organized when baby has stable, predictable sleep with smooth transitions from sleeping to waking.

An organized well modulated baby will wake up and go from deep to light sleep and become drowsy, and then become very alert. Then after some time, he/she will go slowly and gradually back to sleep. He/she will smoothly transition from one state to another.

State Behaviors - Disorganized

These behavior patterns may indicate an infant is not ready for activity or may need a break. These patterns may indicate immaturity.

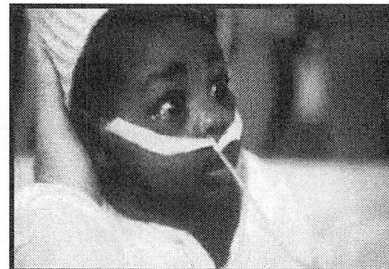
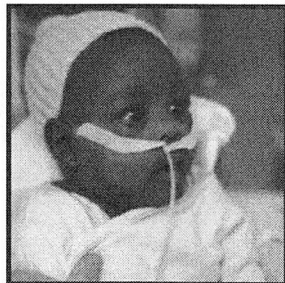
Hypoalert

This is low level alertness in which infant's eyes are slightly open looking fatigued, but he/she is quiet with little movement.



Hyperalert

Infant is quiet and eyes are wide, wide open giving the impression of panic or fear. Infant appears to be intensely focusing and may be unable to break the fixation on the stimulus or stop looking.



Gaze Averting

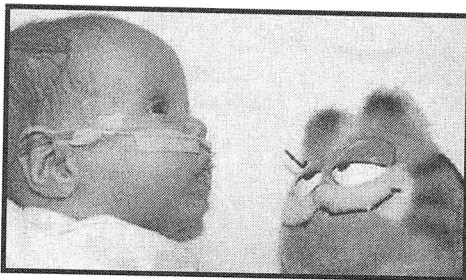
The infant looks away from a face or object. Usually means baby is overstimulated or needs a break and is viewed as a "time out" signal, or an indication from baby to stop or limit activity.



State Behaviors - Disorganized

Fussing & Crying

Some babies cry and appear unable to calm themselves. These babies need help with learning to self calm. (See self regulation.) Some babies have unpredictable cycles of crying and are easily upset by the environment (light, noise, activity). Some cry with abrupt movement and some from internally triggered arousal.



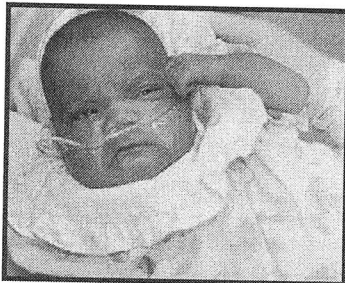
Upward Gaze

Eyes looking up over visual object in front of infant's face, or putting head back to look up.

Staring

Infant demonstrates glassy-eyed alertness with eye opening. Eyes look glazed or fixed and infant appears to be staring.

Some babies are at the mercy of the incoming stimuli and cannot calm themselves or move away from the activity or stimulus.



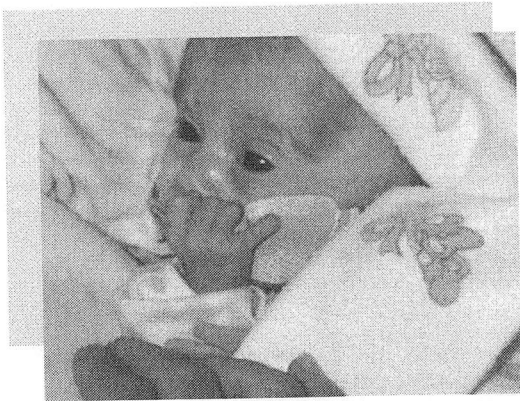
Grimace

Face retracts and looks distorted. Infant looks uncomfortable.

Adapted from Als, H. (1984) *Manual for Naturalistic Observation of Newborn Behavior (Preterm and Full Term)* The Children's Hospital, MA.

Self Regulation

A very important new skill for your baby to learn is to calm himself and cope with his/her surroundings. Your baby started to comfort him/herself in the womb by sucking on his/her hands, and bracing his feet. In order to maintain balance in his physiology, his motor and state systems, your baby will learn to organize and regulate all three of these systems at the same time.



The development of this balance comes as your baby's nervous system develops and learns to have more and more control over his/her behavior. Several self-calming maneuvers will become evident in your baby's behavior as this system matures.

At first these efforts may be unsuccessful or barely successful, and then will mature to become consistently successful.

Most babies who graduate from the intensive care nursery are not ready to self calm themselves and cannot regulate their system successfully for extended periods of time. They will learn to become more proficient with help from their caregivers and their environment.

The self regulating behaviors include:

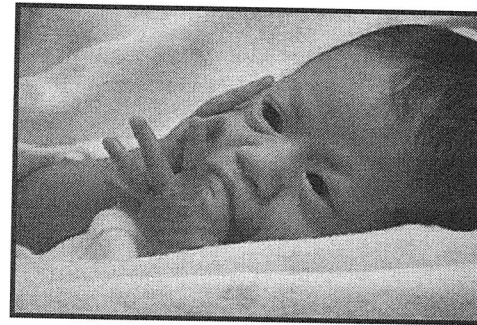
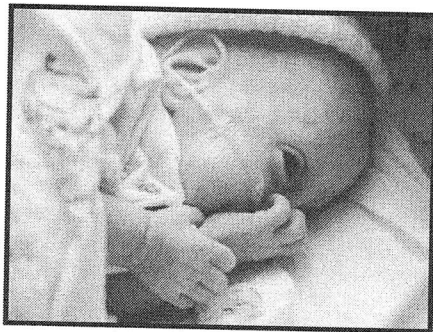
- *hand to mouth and face
- *bracing feet and legs
- *clasping hands together
- *clasping feet together
- *tucking their body
- *sucking behavior
- *grasping and holding on
- *looking and attending

(Als, 1982)

Each baby will make their own choice of self regulating behaviors. Not all will be present in all babies. Watch your baby in order to recognize which behaviors are his/her favorites.

Self Regulation Behaviors

These are infant's behaviors that help him/her to become organized. They are self comforting and regulating behaviors that need to be supported. If your baby is successful at calming him/herself, he or she is considered to be "organized."



Hands to Mouth/Face

First attempts to do this may be swipes near the mouth, but after developing coordination baby will be able to suck on own fingers and hand.

Hand Clasping

Infant grasps own hands together and holds hands or presses them against each other.



Leg/Foot Bracing

Straightens leg or foot in attempt to connect with a boundary to inhibit movements. Once boundary is touched infant may relax while maintaining the brace or restart active bracing again.

Self Regulation Behaviors

These are infant's behaviors that help him/her to become organized. They are self comforting and regulating behaviors that need to be supported.

Sucking

Infant sucks on hand, pacifier, nipple, breast, clothing, bedding or caregiver's finger.



Suck Search

Infant actively seeks something to suck.



Foot Clasping

Infant places one foot against the other and touches the other foot or leg. Legs may cross.

Tucking

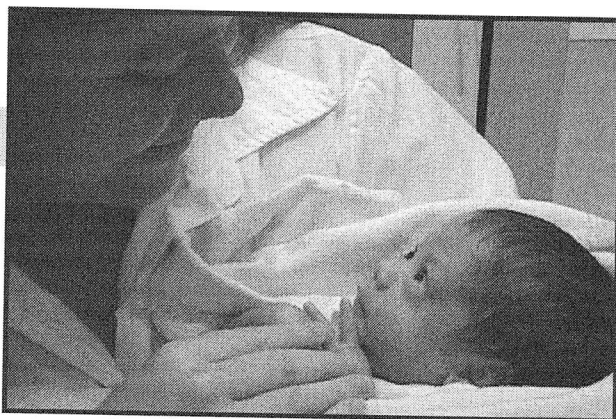
Infant actively flexes trunk or maintains a curled trunk position. Often infant will simultaneously tuck legs or arms into flexion.



Self Regulation Behaviors

Grasping and Holding

Infant makes grasping movements with the hand. Curls fingers around bedding, caregiver's fingers or tubing. He may hold on after making contact successfully.



Looking and Attending

Infant calms self by focusing intently on caregiver's face or a visual object.

Adapted from Als, H. (1984) *Manual for Naturalistic Observation of Newborn Behavior (Preterm and Full Term)* The Children's Hospital, MA.

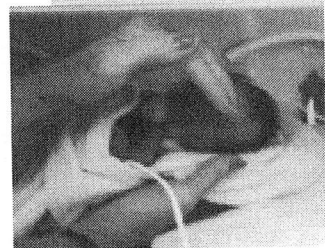
Promoting Your Baby's Development at Home

As your baby makes the transition from hospital to home, he/she may appear confused for a period. Leaving the noisy, brightly lit intensive care nursery for a very different environment at home with different sounds, light and activity levels is like moving to another planet. These activities will help your baby adjust in the first couple of weeks at home. Watching your baby's reactions to the sounds and lights in his/her environment will help you learn when your baby is sensitive or relaxed.

Light Reduction

A dimly lit and quiet environment is more relaxing and less stressful for babies. Your baby is getting used to the new sounds and light in your home. Recovering babies often do best when the following is observed:

1. Avoid placing your baby under bright lights
2. Dim the lights as you hold your baby to feed; it may help him/her relax and nipple more smoothly
3. If you are trying to look at your baby and he/she is alert, shield the eyes so that he or she may look at you with low lighting.



Noise Reduction

Your baby may be more sensitive to sound than to light. Reducing noise in general may help your baby be able to feed more smoothly and longer. In addition, it may help your baby maintain alertness longer and even help sleeping.

1. Feeding your baby in a quiet area away from the major activity in your house will help your baby establish a rhythm and preserve his or her energy while trying to coordinate sucking, with swallowing and breathing.
2. Some recovering babies can get overly tired quickly. Reducing noise can help them settle and smoothly transition into sleep.
3. Speaking quietly around your baby may help your baby relax and be calm before going to sleep. It also may help your baby remain alert.

Promoting Your Baby's Development at Home

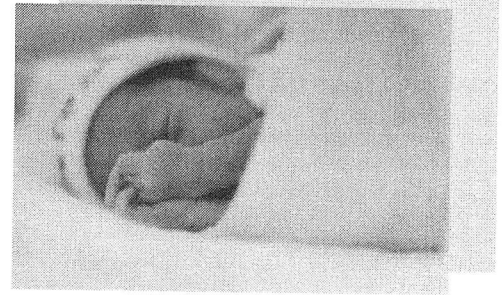
Positioning

1. Position your baby with rolled blankets and supports (similar to the positioning in the nursery). This will help your baby maintain positioning and improve sleep.*

2. Placing your baby's hands or fingers near his/her face and mouth may help your baby learn to suck on her fingers and learn to calm.

3. Provide boundaries around your baby to create a little "nest" to facilitate tucking his/her extremities close to their body.

** Avoid putting loose bedding or blankets near your baby's face in the bed and ask your doctor for "Back to Sleep" positioning suggestions for your baby.*



Comforting

Your baby may be more sensitive to sound than light. Reducing noise in general may help your baby feed more with less difficulty and for a longer period of time. In addition, it may help your baby maintain alertness and even sleeping.

During the transition from hospital to your home, learning to calm and soothe your baby becomes a priority. Here are two suggestions:

1. Offer a finger to hold and assist your baby grasping it.

2. Gently but firmly contain your baby's arms, legs and trunk in a curled position with your hands providing support.



Promoting Your Baby's Development at Home

When Your Baby is Fussy

- Hold him/her quietly and still
- Reduce light and noise
- Keep environment as calm as possible
- Swaddle securely (but not tightly) in a blanket



During Caregiving:

During routine handling such as changing a diaper, turning your baby over, feeding, dressing and bathing activities, there are numerous opportunities to support your baby's development.

Recovering babies are easily fatigued and overwhelmed. Consider the stimulation your baby experiences during activity. If possible, reduce some of this input so your baby can avoid becoming overwhelmed. (VandenBerg, 2007).

Simply feeding your baby involves 7 or 8 modes of stimulation, including:

- visual stimulation
- auditory stimulation
- tactile stimulation
- gustatory stimulation if taste is involved
- vestibular stimulation while moving your baby
- vestibular stimulation while moving
- olfactory stimulation if any smell is involved
- proprioceptive stimulation during holding and touching (pressure on the skin)

Promoting Your Baby's Development at Home

It is important to monitor your baby's energy level. Infants have a limited amount of energy for daily activities such as bathing, feeding and playing. A bath alone can take all the energy your baby has saved up for several hours.

Signs indicating your baby is moderately tired and needs to recover:

- irregular or fast breathing
- mild changes in color, particularly around the eyes, nose and ears
- squirming and fussiness
- glazed look or staring eyes

Signs indicating your baby is exhausted and needs rest before any further activity:

- limpness in legs, arms, neck or face
- irregular or fast breathing
- color changes to pale, reddish or blueish

Signs indicating your baby has recovered his/her energy:

- regular, relaxed breathing
- pinkish color around the eyes, nose and ears
- bright and alert when awake or sleeping restfully
- strong or balanced muscle tone and energy in legs and arms

Promoting Your Baby's Development at Home

Caregiving

During caregiving, help your baby in the following ways:

1. Maintain a flexed, tucked position when you handle him/her.

This is achieved by wrapping up the arms and legs, or containing with another pair of hands.

2. Look for signs of stress or frustration.

Examples of such signs include fussiness, squirming, pale color, fast breathing, irritable behavior, staring eyes or glazed appearance, limp muscle tone, and extended arms or legs.

If you observe any of these behaviors, stop activity and contain your baby by holding him/her still and quiet. Once your baby appears rested, calm and relaxed, slowly resume activity but carefully observe your baby for cues that indicate fatigue or stress.

3. Take several breaks.

If you find your baby needs several breaks it might be best to stop activity, or at least slow the pace. For example, a bath right after feeding might be overwhelming.

Most recovering babies can handle two or three modes of stimuli when they go home from the hospital. If they stay healthy, this tolerance will grow and eventually they will be able to handle three or four modes.

You can help your baby handle stimuli by moving slowly and gently, as well as by making gradual transitions between activities. These behaviors will help your baby adjust to various activity levels.

Promoting Your Baby's Development at Home

Playing with Your Baby

Looking & Attending

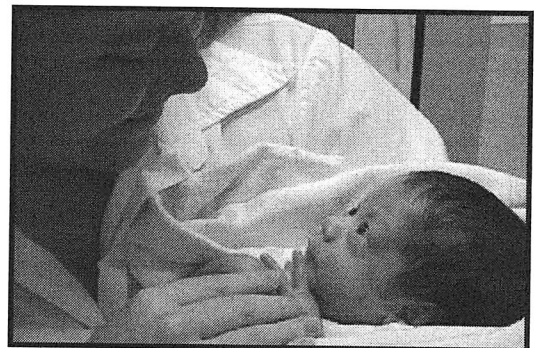
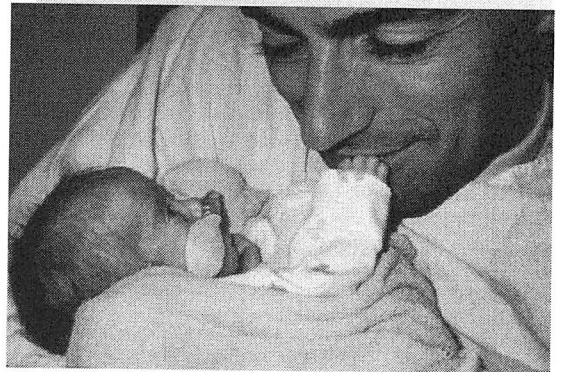
As you notice that your baby is waking up and looking spontaneously, there are some simple ways that you can help your baby with looking and attending.

As your baby is alert, watch and see how long these periods last. Short periods (a few minutes) may be all that your baby can muster up at first, but gradually you will see these awake times increase. Learn to appreciate them by watching them.

Your baby may appear to want to look around. One of his/her favorite things to watch will be the face of Mom and/or Dad or caregiver. To encourage and help your baby focus, present your face quietly and slowly, looking away from your baby's line of vision. Be still at first and then move, without talking from side to side SLOWLY. Watch and see if your baby follows your face. Experiment with moving faster, or slower, and in different directions.

STOP if any of the stress cues are seen (see page 17 an 18).

Once your baby is able to focus, and follow your face consistently, you could try a small, bright colored toy. Once you have your baby's attention focused on the toy, move it in different directions also SLOWLY. Watch for "time out" signals and STOP if baby signals stress or fatigue. Respect your baby's communication. (VandenBerg, 2007).



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