Our nursery finds ways to help your premature baby develop as normally as possible during his/her stay in the hospital. This is called “developmental care.” A major goal of developmental care is to protect the premature baby’s brain and central nervous system. The brain and nervous system control the five areas of development: physiological, motor, level of consciousness, attention and self-regulation. These areas are the basis for your baby’s motor, mental, and social development.

Your Premature Baby’s Development
To understand your premature baby, it helps to know the 5 systems of development that make up your baby. The brain controls these systems, and they work together.

The systems are:

- **Physiological:** Controls automatic functions. These include breathing, heart rate, color changes, and bowel movements.
- **Motor:** Controls the body’s posture and movements.
- **Level of Consciousness:** Controls the time your baby is asleep and awake.
- **Attention:** Controls the ability to focus on faces, objects, and sounds.
- **Self-Regulation:** Provides balance between the systems. This system allows your baby to calm down.

Communication
Because your baby is premature, these systems are not fully developed. If these systems are in balance, your baby will show you “ready signals.” But if any of the systems are upset, your baby will show you “time-out” signals.”

**Ready Signals**
- Even skin color
- Steady breathing
- Even heart rate
- Sucks on hand or pacifier
- Has relaxed posture
- Curls body up
- Brings hands to mouth
- Looks at you
- Makes cooing sounds

**Time-out Signals**
- Changes in breathing rate
- Changes in skin color
- Crying
- Fussiness
- Yawning
- Drowsiness
- Looking away
- Grimacing
- Spreading fingers
- Arching back
- Kicking legs
- Waving arms
- Spitting
- Hiccoughing
- Sneezing
- Arms and legs stuck extended "straight out"

Your baby communicates with you through these signals. As you learn how to read these signals, you will know what your baby likes and does not like.
If your baby shows you any of the “time-out” signals, stop whatever you may be doing with your baby. This allows the self-regulation system to take over so your baby can calm down.

So, if you are talking, singing, rocking, changing, bathing or feeding your baby, and he/she shows time-out signals, stop briefly. Allow your baby to calm down.

You may want to try:
- Just holding your baby.
- Looking away from your baby.
- Holding his/her arms and legs close to the body.
- Swaddling your baby.

Wait for your baby to show you any of the ready signals. Then continue.

Remember that direct contact is not the only reason your baby will show time-out signals.

The Neonatal Intensive Care Unit (NICU) has equipment near and around your baby. This equipment often makes noise. Lights can also be bright at times.

Loud sounds and bright lights can startle your baby and cause a higher heart rate or faster breathing. They can also disturb sleep.

For a calmer environment around your baby, do a few simple things:
- Talk quietly.
- Whisper around your baby.
- Open and close portholes gently.
- Close the trash can lid softly.
- Don’t drop things on top of the isolette.
- Respond to monitor alarms.

The NICU provides covers when the baby is in an isolette and based on his/her age. A mask is used if your baby is receiving phototherapy. 2 sentences deleted here. Your baby is less likely to open his/her eyes in bright light. If you are holding your baby, your baby may open his/her eyes sooner if you shade the light by holding your hand over the eyes.

**Touch**

Touch is often thought to be soothing. For a small preemie whose skin is very fragile, touch can be more stressful. Touch has to be done with great care.

If your baby is very small and young, the nurses will take special care when touching your baby at scheduled care times. The rest of the time, touch should be limited, to allow the baby to sleep, rest, and grow.

When your baby is ready, touching and holding will be very welcome. The NICU staff strongly encourages skin-to-skin care for its many benefits.

**Handling**

Handling is when you are holding your baby and caring for your baby. Too much handling of your baby can cause time-out signals. It is helpful to:
- Provide supports that will allow your baby to feel contained. This posture includes arm and legs in and ears in line with his/her hips and shoulders.
- Offer a pacifier. Or, if your baby prefers, help your baby suck on his/her thumb or fingers.
- Offer a boundary against your baby’s feet to push off of.
- Give your baby a rest when your baby needs one.
- Space out your handling and care of your baby.
As a parent, you are an important part to your baby’s development. We encourage you to participate in your baby’s care.

**Positioning**

A small premature baby has not yet developed enough muscle strength, or tone, to stay in a tucked position. Therefore, positioning aids are used to help keep your babies’ arms and legs curled up next to the body in a tucked position while in the nursery. This allows the baby to relax and valuable energy is saved for growing. The baby also has better oxygen levels and warmer temperature when he/she is positioned correctly.

When the arms and legs are straight, stiffness can occur and normal development can be delayed.

- Allow your baby to have a nest. The NICU has special rolls that can be put around your baby. These help your baby stay curled up.
- Allow your baby to have his/her hands near the face and mouth, even when swaddled.
- Try to offer some boundary even when bathing your infant. Containing the baby will keep your baby calm and relaxed.

**Developmental Milestones**

As you monitor your baby’s development, remember that all children learn differently and not at the same time. Also, if your child is born prematurely, you must allow a different timeline for this. For example, if your baby was born six weeks early, your baby may not move the same at four weeks of age than a term infant would at four weeks of age. Therefore, for the following table, its best that you use your baby’s due date, not the birth date, to calculate months and to judge your baby’s development.

<table>
<thead>
<tr>
<th>Average Age</th>
<th>1 Month/Developmental Milestones</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Lifts head</td>
<td></td>
</tr>
<tr>
<td>- Responds to sounds</td>
<td></td>
</tr>
<tr>
<td>- Smiles spontaneously</td>
<td></td>
</tr>
<tr>
<td>- “Talks”</td>
<td></td>
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</tbody>
</table>

**Ways to promote development**

- Talk to your baby.
- Play with objects 8-12” in front of baby’s face.
- While you’re with baby, place baby on stomach for play.

<table>
<thead>
<tr>
<th>2 Months/Milestones</th>
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<tbody>
<tr>
<td>- Holds head erect in the supported sitting position.</td>
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<tr>
<td>- Follows face/object with eyes.</td>
</tr>
<tr>
<td>- Smiles.</td>
</tr>
<tr>
<td>- Squeals.</td>
</tr>
</tbody>
</table>

**Ways to promote development**

- Talk to your baby.
- Move object up/down, side to side in front of baby’s face.
- Smile.
- Sing songs.
- Play with different textured toys.

<table>
<thead>
<tr>
<th>3 Months/Milestones</th>
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</thead>
<tbody>
<tr>
<td>- Lifts head and chest while on stomach.</td>
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<tr>
<td>- Improved head control.</td>
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<tr>
<td>- Recognizes bottle or breast.</td>
</tr>
<tr>
<td>- Plays with rattle.</td>
</tr>
<tr>
<td>- Reaches for objects.</td>
</tr>
<tr>
<td>- Glances from one object to another.</td>
</tr>
</tbody>
</table>

**Ways to promote development**

- Offer toys that baby must reach for.
- Offer toys that baby can grasp.
- Shake the rattle in baby’s hand.
Developmental problems by 3 months: unable to lift head or push up on arms, stiff legs, constantly fisted hand, or difficulty to move out of a position.

4 Months/Milestones
- Has good head control.
- Rolls over.
- Pulls to sitting position, follows moving object.
- Turns to sounds.
- Laughs aloud.
- Enjoys play.

Ways to promote development
- Encourage rolling over by offering toys on side opposite baby’s position.
- Bring baby’s hands together to center of body.
- Shake rattle to get a response.

6 Months/Milestones
- Sits briefly without support.
- Rolls over from back to stomach.
- Transfers objects from hand to hand and from hand to mouth.
- Bangs toys.
- Babble.

Ways to promote development
- Lie baby on back and place toys out of reach to one side to encourage rolling over.
- Encourage banging and sound production.
- Sing, talk, smile, and laugh with your baby.

9 Months/Milestones
- Waves bye-bye.
- Plays pat-a-cake.
- Says mama and dada.
- Wants.
- Pulls to stand.

Ways to promote development
- Play social games with baby.
- Name objects to encourage vocabulary development.
- Place infant on floor with several toys to play with.

12 Months/Milestones
- Says two or three words.
- Drinks from cup.
- Can pick up toys using thumb and forefinger.
- Likes to imitate.
- Turns pages in book.
- Walks, although unsteadily.
- Gives affection.
- Follows simple directions accompanied by gestures.

Ways to promote development
- Continue to name objects.
- Offer cup with lid.
- Give simple commands.
- Read to child and let him turn pages.

Developmental problems by this age: difficulty getting to stand, stiff legs with pointed toes, cannot crawl on hands and knees, uses only one side of body to move.

Developmental problems by this age: unable to lift head, rounded back, stiff arms, stiff legs.