

Your premature baby's development

If your baby is born very early in gestation, his or her sensory systems (vision, hearing, smell, touch) are still developing. Yet, babies learn through interactions with the world around them. Premature babies benefit from very gentle touch, soft sounds and voices, dim lights, and some other gentle exposures and activities as detailed below.

- **Touching and holding:**
 - At young gestational ages, your baby's skin is very sensitive. In early stages, your baby will not like being rubbed or stroked. Instead, touch your baby by using gentle and steady pressure
 - You may want to prepare your baby for touch by speaking to him/her in a soft voice first
 - Since your baby's skin is too immature to maintain normal body temperature, he/she will likely be in an incubator to keep warm
 - Talk to your baby's care team about holding your baby skin-to-skin every time you are in the NICU; this helps bonding and development, as well as increases mother's milk supply
- **Infant feeding:**
 - Even at very young ages, your baby's senses (taste and smell) are already developing
 - Starting at 26-28 weeks, babies can suck gently on a finger. He/she may be offered a pacifier, but your baby may need help keeping it in his/her mouth
 - Since your baby's body and stomach are underdeveloped, only small amounts of breast milk or specialized formula are given initially, likely through a feeding tube; the amounts of nutrition gradually increase as babies become bigger and stronger
 - You can use drops of your (mother's) milk for your baby's mouth cares. You may also consider placing a pad scented with mother's milk in your baby's bed while your baby is receiving feedings via a tube
 - Ultimately, the goal for most infants is to reach the ability to take all their feeds by mouth without a feeding tube, and master feedings as nurturing experiences which provide optimal nutrition for growth and development
- **Infant states of activity:**
 - For premature babies, it may be difficult to tell when they are awake or asleep. Preterm infants may be "quiet", when babies appear seem calm and still, or "alert and active" when babies are opening their eyes, or moving their bodies.



The earlier a baby is born, the more time they spend in a “quiet” state, whether they are awake or resting/sleeping

- As babies mature, you will notice longer and more frequent periods of being “alert and active”; this is a sign of neurodevelopmental progress
- Crying is a normal stage of development and a form of communication for babies
- **Positioning and sleep:**
 - Sleep allows for brain and body growth and maturation. You can still gently touch or talk softly to your baby, but try not to wake him/her up
 - Decrease bright lights or loud noises around near your baby’s bed space
 - Before care times, wake your baby slowly by placing your hands gently on him/her
 - Your baby may be in a “therapeutic position” early on, to best support their body functioning and healing. As your infant get closer to being ready to go home, he/she will transition to “safe sleep” (which is sleeping on his/her back as recommended by the American Academy of Pediatrics)
 - Your baby will have an emerging routine sleep pattern; as he/she matures, your baby should be more awake/interactive during the day, and asleep more at night
- **Movement:**
 - Early on, your baby’s movements may include jerks, twitches, and startles. He/she will try to stretch his/her arms and legs but does not yet have full control over these movements. These movements will mature as your baby develops
 - Your baby’s care team will closely monitor this progress along with you. Please talk to your baby’s nurse and physical therapist about which positions and exercises best support your baby’s body functions and development
- **Looking, listening, and smelling:**
 - Preterm babies’ eyes are usually closed. Around 26-28 weeks, infants start opening their eyes, but they cannot yet focus well
 - Protect your baby’s eyes from bright or direct light. You can lower the shades in your baby’s room. Lift the incubator blanket slowly so that the light change is gradual
 - Even very young babies know their mother’s voice and other characteristics from their intrauterine life. We will work with you to gradually introduce stimuli such as sounds, lights, tastes, and difference touches and sensations which will help your baby’s brain, body and senses develop further
 - Talk, read or sing to your baby every day you are in the NICU. Speak to him/her in a soft voice. Every time babies hear words and language, their neurons (brain cells) connect which helps their future thinking skills and overall development.

