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# The Newborn: Development and Discovery

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## Overview

The newborn, or neonate, undergoes a complex developmental process during the first four weeks of life and must make tremendous adjustments for life outside the uterus as well as achieve balance within. Infants are born with cognitive abilities and social skills in place. Current research on brain development includes new methods for assessing speed of reaction and pain sensitivity as well as techniques such as the revised Brazelton Assessment Scale and Random Mass Spectrometry. In addition, the APGAR scale is utilized to determine the newborn's appearance and responses. Though most babies are born full term a small percentage are born prematurely. These newborns are considered high-risk infants and may need special care and attention. There have been many changes in the treatment of low birth weight, premature, and small for date newborns that help them bond with their parents and adapt to the world outside of the womb.

Parents usually make a decision to breast or bottle feed before the birth of the infant. Although breast milk is considered nutritionally more beneficial, infants also may thrive on formula as long as they are held and cuddled by their parents. Choices regarding breast or bottle-feeding are based on how comfortable the couple feels about nursing as well as other factors such as work or school obligations.

After birth, the newborn makes the transition from dependent fetus to independent neonate. Physiological functions such as digestion, elimination, respiration and circulation once dependent on the placenta must now function on their own. Motor responses are at first reflexive, but as the brain becomes more complex the infant gains more control over motor capabilities. Very young neonates have demonstrated their capacity to learn. It is a challenge for parents to tune into their infant's temperament, which in turn influences the ways in which the parents respond to the infant. In order for the baby to continue to develop, bonding, attachment and trust must be established.

## Questions To Consider

1. What are the characteristics of the newborn?
2. What are the advantages and disadvantages of breast or bottle-feeding?
3. How do different assessment scales inform us?
4. What ability does the newborn have for learning? For expressing emotions?
5. What is involved in bonding with the newborn baby?
6. What is meant by the term high-risk infant?
7. How are high risk infants treated so that stimulation and relationship are promoted?

## Vocabulary

Read these terms with their definitions before viewing the program.

**Anoxia** The lack of oxygen to the fetus during prenatal development or labor and delivery.

**Apgar Score** A rating scale that assesses the newborn's appearance and responses.

**Bonding** The close caring connection between parent and infant.

**Cerebral Palsy** Brain damage characterized by poor muscle control, muscle spasms, and unclear speech.

**Cognition** The interaction of perceptual, intellectual, and linguistic abilities that are involved in thinking and learning.

**Fontanelles** Soft spots on the head of the newborn.

**Lanugo** Soft downy hair on the infant's back and neck.

**Low Birth Weight** An infant weighing less than 5 pounds at birth.

**Neonate** The infant in the first four weeks of life.

**Neurons** Nerve cells that the human will need throughout life.

**Premature Infant** An infant born three or more weeks before the end of term.

**Respiratory Distress Syndrome** Lack of surfactant, lubricant needed for breathing in premature infants.

**Reflex Behavior** Inborn automatic responses to environmental stimuli.

**Reflexes** Indicate how the central nervous system is functioning.

**Small for Date** An infant born full term but weighing less than 5 pounds

**Surfactant** A lubricant in the lungs necessary for breathing.

**Temperament** The inherent consistent dispositions in a person.

**Vernix** A substance that the fetus secretes to protect the skin from amniotic fluid.

**Vestibular** Maintaining balance

### **Instructional Objectives**

When you have successfully completed this module, you will be able to:

1. Describe the details of the normal newborn's appearance.
2. Discuss two changes that occur in order for the newborn to function independently.
3. Identify two assessments used to screen the newborn's physical and behavioral functioning.
4. Describe the neuron development of the neonate.
5. Describe reflexes present at birth, and group according to function.
6. Discuss the newborn's sensitivity to pain and recommendations for medical procedures.
7. Discuss the emotional and cognitive behavioral states of the neonate and what they contribute to the bonding process.
8. Identify five states of arousal of the neonate.
9. List pros and cons of breast feeding and bottle feeding.
10. List the different temperaments of newborns and parental responses to each category.
11. Describe the different types of high-risk infants, including the risks, effects of standard care and new practices in care.

### **Self-Test**

After studying the objectives and watching the video, take the self-test to check your progress.

1. Describe the appearance of the average newborn.
2. What are the 5 items assessed on the Apgar Scale? What is the purpose of the Apgar?
3. What is the purpose of the Clinical Neonatal Behavior Scale?
4. List and describe the importance of three of the newborn's reflex behaviors.
5. Describe bonding and minute ways the infant contributes to this process.
6. Name and describe 5 states of arousal of the infant.
7. Please answer true (T) or false (F):  
 a. Newborns show cognitive skills through remembering their mother's face and recognizing what is old and new.  
 b. Parents learn to distinguish between the different types of cry of the newborn.  
 c. Newborns respond to pleasurable and painful stimuli.  
 d. Newborns are unable to distinguish their mother's voice from all others  
 e. Newborns are not sensitive to pain.  
 f. Newborns will snuggle into the parent's arm or shoulder.  
 g. Motor development is slower than sensory development.  
 h. The sense of touch is one of the most advanced senses at birth.  
 1. Newborns are able to feel and express basic emotions.

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8. Complete the chart below regarding the parents' decision to breast or bottle-feed.

<b>Parents' Decision</b>	<b>Advantages</b>	<b>Disadvantages</b>
Breast Feeding		
Bottle Feeding		

9. Many babies are colicky the first three months of life. Based on the most recent research, explain why the baby may be colicky during this time.

10. Describe the three categories of temperament of neonates established by Thomas and Chess. Describe the variation in temperament of infants that do not fall into the three categories.

a. Easy

b. Difficult

c. Slow-to-warm

d. Other

11. Describe in a paragraph the characteristics of infants that are considered high risk, three problems that they may face, and standard hospital treatment given.

12. Discuss two new practices with high risk infants to promote stimulation and relationship with parents.