

HEALTH PROMOTION AND HEALTH MAINTENANCE FOR THE NEWBORN AND INFANT

8



SHANNON comes to the pediatric health services clinic with her 10-day-old daughter, Rhonda. Shannon is a 22-year-old single mother who lives with her 5-year-old daughter and male partner of 2 years, who is the father of their newborn. Shannon had an uncomplicated pregnancy and birth. Rhonda was born at 37 weeks' gestation. She required phototherapy for newborn jaundice and had initial difficulties breast-feeding. Rhonda was discharged at 5 days of age in good health. The nurse weighs and

measures Rhonda, and finds that she weighs 1 ounce more than her birth weight. Shannon voices concerns that Rhonda sleeps very little, cries a lot at night, and makes sleep difficult for her boyfriend, who has to get up early for work. The nurse asks Shannon how she knows when Rhonda is ready to feed. Shannon recognizes only Rhonda's crying as a feeding cue. The nurse gives Shannon information on newborn states and cues, and encourages Shannon to notice more subtle feeding cues. The nurse calls the lactation consultant and together they assess Rhonda's breast-feeding effectiveness. The lactation consultant works with Shannon on a feeding plan to ensure that breast feeding is successful. The then pediatric nurse partners with Shannon to strategize how to help Rhonda sleep for longer periods, recognizing that newborns often do not settle into a schedule until well into the second month. What ongoing assessment will Rhonda and her parents need? How can the nurse encourage shared parenting between Shannon and her boyfriend? What coordinated follow-up is required between the pediatric nurse and the lactation consultant?

LEARNING OUTCOMES

After reading this chapter, you will be able to do the following:

1. Explore the nurse's role in providing health promotion and health maintenance for the newborn, infant, and family.
2. Describe the general observations made of infants and their families as they come to the pediatric healthcare home for health supervision visits.
3. Describe assessment and intervention areas for health supervision visits of newborns and infants—growth and developmental surveillance, nutrition, physical activity, oral health, mental and spiritual health, family and social relations, disease prevention strategies, and injury prevention strategies.

(continued)

KEY TERMS

attachment	self-regulation 288
behaviors 284	separation
dental home 287	anxiety 300
developmental	stranger
delay 285	anxiety 300
pediatric health	
care home 294	

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(continued)

4. Plan health promotion and health maintenance strategies employed during health supervision visits of newborns and infants.
5. Apply the nursing process in assessment, diagnosis, goal setting, intervention, and evaluation of health promotion and health maintenance activities for the newborn and infant.
6. Recognize the importance of family in newborn and infant health care, and include family assessment in each health supervision visit.



CLINICAL TIP

Administration of medications can be stressful for the newborn and parents.

- Administer eye prophylaxis before, or at a different time, than the vitamin K injection. The newborn may cry during the vitamin K injection, making it difficult to administer ophthalmic ointment.
- Administer eye prophylaxis when the newborn is calm. Do not attempt to pry the newborn's eyes open when the newborn is crying, or when the infant is supine and facing bright overhead lights. Dim the room, swaddle or contain the newborn's limbs, and hold the newborn semi-upright. If the newborn is awake or drowsy, the eyes will usually open, allowing easier administration of the ophthalmic ointment.
- The newborn is less likely to cry during the vitamin K injection if the nurse lays the newborn on a firm surface and the parent gently holds the newborn's arms across the newborn's chest during the injection. This "containment" helps the newborn stay calm during the procedure.



NURSING ALERT

Cord care practices vary according to region and are often based on institutional tradition rather than evidence-based practice. The objective of cord care is to prevent infection and promote cord separation. Cord care practices include no care, application of triple dye, and application of povidone-iodone, isopropyl alcohol, or antimicrobial ointments. Aseptic cord care decreases bacterial colonization but delays cord separation (Blackburn, 2003, p. 538).

HEALTH PROMOTION AND HEALTH MAINTENANCE FOR THE NEWBORN

For a healthy woman, prenatal care, labor, and birth may be her first experience in an ongoing relationship with healthcare professionals. The quality of that experience is key to ensuring a continuing partnership between her and her child's healthcare providers.

The month following delivery is a time of huge transition for the new mother and her family. Not only is the mother coping with hormonal shifts and a postpartum body, but also changing roles and relationships. The nurse's role is to assess knowledge about self-care and newborn care, teach health promotion and maintenance activities, promote parental confidence in newborn caregiving, and promote a partnership among healthcare professionals and the family.

Contacts with the Family

The nurse who sees the expectant woman during prenatal care has the unique opportunity to help parents prepare for their new roles. The nurse listens attentively and provides information and support. During prenatal visits, parents learn to value health supervision and an active partnership with healthcare professionals. The nurse who interacts with the family in the prenatal period assesses risk and protective factors. Women are often receptive to altering risky behaviors in order to protect the newborn from harm. The motivation to give birth to a healthy newborn is usually strong, and the nurse can use maternal readiness for change to promote behaviors that improve maternal and newborn health.

Most obstetrical care providers encourage the expectant mother to choose her newborn's care provider prior to the baby's birth. Pediatric care providers usually welcome a short office visit, sometimes at no charge, to allow the expectant mother and care provider to assess their "fit" prior to committing to this important relationship (AAP, 2001; Shelov, 2004) (See Families Want to Know: Prenatal Visit to the Pediatric Care Provider). Most pediatric care providers have written information for expectant parents, explaining their professional philosophy of care as well as information about services.

The hospital length of stay for a healthy mother and newborn is short, approximately 48 hours for a vaginal birth and 72–96 hours for an uncomplicated cesarean birth; a hospital stay of less than 48 hours requires that certain criteria be met prior to newborn discharge [American Academy of Pediatrics (AAP), 2004b]. During the hospital stay, the nurse provides ongoing physical assessment of the mother and newborn, while providing education and anticipatory guidance to prepare the mother to care for herself and her newborn following hospital discharge.

Although challenging, the nurse incorporates many newborn health promotion and maintenance activities into this short stay. Starting at the moment of birth, the newborn is continuously assessed and procedures are performed to ensure newborn health. The nurse integrates methods that will help the newborn to adapt to the setting.

For the healthy newborn, early contacts include procedures such as first bath, umbilical cord care (Figure 8–1 ►), vitamin K and hepatitis B injections, and eye prophylaxis; comprehensive physical assessment (see Chapter 5 ∞ for details); screening procedures such as hearing, metabolic, and maternal syphilis screenings (AAP, 2004b); and observations of newborn feeding and of parent/newborn bonding. See the Medications Used to Treat Newborns on page 284.

FAMILIES WANT TO KNOW

Prenatal Visit to the Pediatric Care Provider

Encourage parents to visit the pediatric healthcare home before the baby is born. This ensures that the home will provide the type of care they want for their infant. Assist parents to prepare questions and make an appointment to visit the provider they are interested in interviewing.

Questions they can ask the provider include:

- How soon after birth will the baby be seen? Can parents be present during the initial physical examination? Will you speak with us again before hospital discharge?
- What is your philosophy about male circumcision? Do you perform circumcision? If not, who does this procedure? Is circumcision performed in the hospital before discharge or in the office after discharge?
- What if our baby needs intensive care? Under what circumstances would our baby need to be transported to a different hospital? Would you continue to provide the baby's care during the hospital stay and after discharge?
- When is our newborn's first office visit? Do we call for that appointment or is it made for us while we are in the hospital?
- As our baby's provider, what can I expect from you? What do you think is your most important job? What do you enjoy most about your work?
- As the parent of a new baby, what do you expect from me? What is my most important job?
- What are the costs of care? Do you accept my method of payment/insurance/government assistance?
- What are office hours? Do you take emergency calls from your own patients at night? What number do we call if we have a question or if we think the baby is sick outside of office hours?
- Who covers your office when you are unavailable? Do you have partners in the office or colleagues in the community who cover for you when you are out? May I have a list of their names and phone numbers?
- Who else answers our questions about routine baby and childcare? What is that person's training? May we meet that person today?
- How much time is usually spent for an office visit? How much time will we have to ask questions?
- If our child needs hospitalization, what hospital do you prefer to use? Would you be our baby's doctor, or would you refer the hospital care to someone else? Why?
- What do you think are the most important things you offer to new families like us? Do you have resources to support breastfeeding mothers? Working mothers?
- If we disagree about a childcare issue or a course of treatment, how would we come to an understanding?

After the interview, parents can ask themselves the following questions:

- Was I comfortable talking with this person? Did this person listen to me?
- Did I get clear answers to my questions?
- Do I feel that I could trust this provider with my child's care?
- Was I comfortable in the office? Did I feel welcome?
- Were all staff members friendly and helpful? Did all staff members seem good at their jobs?
- Did I feel like this provider would be a good "fit" for my family? (AAP, 2001; Shelov, 2004)

At discharge, the family is given an appointment for the first visit in the office or clinic setting; a physician, nurse practitioner, or nurse assessment is recommended at 3–5 days of age, with subsequent follow-up visits for newborns at risk for hyperbilirubinemia or feeding problems (AAP, 2004b). See Families Want to Know: Discharge Teaching for New Parents.



A



B

Figure 8–1 ▶ Two different methods for cord care: A, Betadine cleaning, and B, Alcohol cleaning.

NURSING ALERT

Standard precautions should be observed when handling the newborn immediately after birth. Most blood and fluids are wiped from the baby's skin at birth with a towel or blanket to prevent further heat loss and reduce the risk of blood-borne infection from mother to newborn and from newborn to care provider. However, to protect the care provider from residual blood and amniotic fluid on the newborn's skin, gloves must be worn when handling the newborn for any reason prior to the newborn's first bath. Wash hands immediately before gloving and after gloves are removed (AAP, 2002).

PROPHYLACTIC MEDICATIONS *Used to Treat Newborns*

Medication	Prophylactic Action/Implication	Nursing Implications
Vitamin K (phytonadione)	To prevent vitamin-K dependent hemorrhagic disease of the newborn.	1.0 mg IM is given within 1 hour of birth. Locate accurate site on ventrogluteal thigh.
Sterile ophthalmic ointment containing tetracycline (1%) or erythromycin (0.5%) or one of a variety of topical agents, including ophthalmic solution of povidone-iodine (2.5%)	As prophylaxis against gonococcal ophthalmia neonatorum.	Place 1–2 cm ribbon along the conjunctival sac of each eye within 1 hour of birth, taking care that the agent reaches all areas of the conjunctival sac.
Hepatitis B virus (HBV) immunoprophylaxis	All women should be screened for hepatitis B as part of routine prenatal care. The first hepatitis B vaccination for the newborn is preferably received prior to hospital discharge; if not received, the newborn should receive the first dose at the initial outpatient visit.	<ul style="list-style-type: none"> For babies of HbsAg-negative women, the first dose of HBV vaccine is administered during the newborn period (recommended time) or by age 2 months; second dose 1–2 months later, and third dose by age 6–18 months. Babies of HbsAg-positive women must receive HBV vaccine within 12 hours of birth AND receive one dose of hepatitis B immune globulin (HBIG) within 12 hours of birth at a second intramuscular site (opposite thigh). Check the mother's record of hepatitis screening so doses can be given within time recommended.



Figure 8–2 ➤ Observation of the newborn and family begins at first contact during the health promotion and health maintenance visit.

General Observations

At the first office visit, the nursing assessment begins with general observations of the newborn and family (Figure 8–2 ➤). This often occurs as the family is called in from the waiting area.

Welcome the family to the facility and comment on the newborn. Ask how the family is adjusting. In the first month of the newborn's life, parents are usually exhausted and experiencing stressful adjustments in their relationship with each other. The nurse gathers information in order to assess the family's needs, to invite discussion, to validate positive parenting efforts, and to promote partnership between the family and the healthcare team.

The nurse assesses development of **attachment behaviors** (behaviors that demonstrate an emotional connection between newborn and caregiver), parental perception of infant temperament, feeding status, safety, family integration, parental mental health, and parental coping mechanisms. Look again at the photo in the chapter opener and identify what attachment behaviors you see Shannon exhibiting toward the baby, Rhonda. The nurse may determine that further assessment is required; for example, if the parent states that breast-feeding is so painful she wants to switch to formula, she is continuously depressed, has started smoking again, or cannot calm her crying baby. The nurse in the pediatric setting is aware that pediatric health is closely connected to the entire family's health. Many concerns require referral for parents out-



FAMILIES WANT TO KNOW

Discharge Teaching for New Parents

Parents should be taught prior to hospital discharge about education materials to help ensure adequate newborn care and instructions regarding how to access healthcare providers for consultation. This information should also be accessible at home. Discharge teaching includes:

- Breast-feeding technique (position, latch, adequacy of urine and stool, lactation referral and resources)
 - or
- Formula feeding technique (formula type, preparation, safety, feeding)
- Umbilical cord care
- Bathing and skin care
- How to diaper and dress a newborn
- Temperature assessment using a thermometer
- Signs of newborn illness (Shelov, 2004)
 - Abdominal swelling, especially if accompanied by no bowel movement for 1 or 2 days and/or vomiting
 - Blue skin coloring, especially of the face, lips, or tongue (blue hands and feet are normal in the newborn)
- Persistent coughing or choking during feedings
- Unusually long period of crying that will not stop despite comfort measures
- Jaundice (yellow coloring of the skin) that appears head to toe
- Sleeping through feedings or baby that is too tired or uninterested to eat
- Infected umbilical cord (pus or red skin at base of cord, crying when skin near the cord is touched with your finger)
- Respiratory distress
 - Fast breathing (more than 60 breaths/minute)
 - Retractions (muscles between ribs suck in with each breath)
 - Flaring of nose
 - Grunting while breathing
 - Persistent blue skin color
- Immediate newborn safety
 - Infant car seat use
 - Supine sleeping position

side the pediatric care setting; therefore, the office or clinic should have a system in place and ready access to referrals and resources for parents in need.

Growth and Developmental Surveillance

At this visit, the baby's current weight, length, and head circumference are measured and plotted on a growth chart (see Appendix A ∞), and a basic physical examination is performed (see Chapter 5 ∞).

In the first week of life, most babies lose about 1/10 of their birth weight. For example, a 3500-gram baby (7 pounds, 12 ounces) could lose up to 350 grams (nearly 12 ounces). Growth spurts are evident at around 7–10 days, and again between 3 and 6 weeks of age. By day 10, most babies are back to their original birth weight and gaining about 2/3 of an ounce per day. Length increases by 1–1 ½ inches in the first month, and head circumference increases about 1 inch (Shelov, 2004).

Developmental surveillance includes assessment of the baby's ability to calm when being held or spoken to, and respond to sounds by blinking, crying, quieting, or startling. The baby should be able to fixate on a human face and follow it with his eyes. He or she should be able to lift his or her head momentarily when placed prone, demonstrate a flexed position, and move all extremities. Most babies will sleep for 3 or 4 hours at a time and stay awake for an hour or longer (Green & Palfrey, 2002).

It is normal for parents to compare their newborn's developmental skills with other children of the same age. Every baby develops according to an individual timetable; however, when a baby falls far behind, fails to reach a developmental milestone, or loses a previously acquired skill, the baby requires further evaluation (Shelov, 2004). In the first month of life, signs of **developmental delay** (a delay in mastering functions such as motor coordination and behavioral skills) in a full-term infant usually merit immediate investigation by a pediatrician, pediatric developmental specialist, pediatric neurologist, or a multidisciplinary team of professionals. Parents require additional emotional support, clear and honest communication, and resources to cope with the stress of this situation.

Table 8–1 summarizes some growth and developmental milestones that can commonly be observed during newborn care visits.



GROWTH & DEVELOPMENT

Signs of Developmental Delay

During the second, third, or fourth week of life, the following signs of potential developmental delay require a complete medical and developmental evaluation to determine if a disability exists and to plan interventions or future management. The pediatric nurse observes the newborn for these signs and may have opportunity to assess for problems through discussing the newborn's abilities and behaviors with the caregiver.

- Sucks poorly and feeds slowly
- Does not blink when shown a bright light
- Does not focus and follow a nearby object moving side to side
- Rarely moves arms and legs; seems stiff
- Seems excessively loose in the limbs, or floppy
- Lower jaw constantly trembles
- Does not respond to loud sounds

(Adapted from Shelov, 2004)

Table 8–1

NEWBORN GROWTH AND DEVELOPMENTAL MILESTONES OBSERVED IN HEALTH PROMOTION AND HEALTH MAINTENANCE VISITS

Growth	<ul style="list-style-type: none"> • Weight: Baby may lose up to 1/10 of birth weight in the first week of life; birth weight should be re-attained by day 10; weight gain is about 2/3 of an ounce per day thereafter. • Length increases by 1 to 1 1/2 inches. • Head circumference increases by about 1 inch.
Vision	<ul style="list-style-type: none"> • Focuses 8–12 inches away. • Eyes wander and may cross. • Prefers black and white or high-contrast patterns. • Prefers the human face to all other patterns.
Hearing	<ul style="list-style-type: none"> • Fully mature hearing. • Recognizes some sounds. • May turn toward familiar sounds and voices.



Figure 8–3 ➤ Breast-feeding has lifelong benefits for the mother and child and should be promoted prenatally, in the hospital, and through the first year of health promotion visits.

Nutrition

Healthcare providers in the prenatal setting play a vital role in educating expectant mothers about the health benefits of breast-feeding and providing anticipatory guidance prior to childbirth. The nurse in the birth setting promotes breast-feeding by facilitating nursing in the first 30–60 minutes of life, and providing supportive guidance as the mother begins to develop this skill prior to discharge. Shannon, described in the opening scenario, received breast-feeding information from the nurse and the lactation specialist. Continued assessment, encouragement, and support of breast-feeding are vital to the continued success of breast-feeding mothers, as many mothers initiate breast-feeding and discontinue after a few days or weeks (Committee on Nutrition, 2004). The nurse who encounters breast-feeding mothers should understand the basics of breast-feeding management (Figure 8–3 ➤). Ideally, the pediatric setting has a lactation specialist or resource person who can assess breast-feeding and problem solve with the mother. Referrals to a community lactation specialist or support group may be necessary.

In some cases, mothers choose formula feeding for a newborn. Mothers who use infant formula should feed iron-fortified formula (containing between 4.0–12 mg/L of iron) from birth to 12 months (Committee on Nutrition, 2004). This helps ensure adequate iron stores and very low rates of iron deficiency between 6 and 18 months of age. (See Chapter 4 ∞ for more information about formulas.)

Physical Activity

During the first month of life, the newborn gradually “unfolds” and the body straightens. Movements begin to change from reflexive to purposeful. By the end of the first month, the newborn should be able to:

- Bring hands to eyes and mouth
- Move head side to side when lying on abdomen
- Attempt to lift head when prone

In addition, the newborn’s hands are kept in tight fists, and the reflexes are strong (see Chapter 5 ∞) (Shelov, 2004).

Health promotion teaching for the family includes the following activities:

- Position the baby on his or her stomach for supervised play periods. This allows the newborn to lift the head and turn it from side-to-side, make crawling motions, and push up on his or her arms. Allowing supervised “tummy time” is also important for prevention of flat spots on the back of the baby’s head caused by constant supine positioning (Persing, James, Swanson, & Kattwinkel, 2003). Be sure to place the baby on his or her back when tired and starting to fall asleep.

- Allow the baby free movement of arms and hands. If the baby is swaddled, allow the hands to be outside the blanket and positioned in midline. This allows flexion and extension of arms, brings hands into the line of vision, and brings hands to mouth (Shelov, 2004).
- Encourage appropriate toys such as a mobile with contrasting colors and patterns; a plastic mirror; music boxes and exposure to soft music on the radio, tape recorder, or CD player; and soft toys with colors, patterns, and gentle sounds.
- Encourage switching positions when bottle-feeding. It may be most comfortable for the mother to hold the baby in a cradle position with the bottle in her right hand (or left hand if left-handed); however, switching arms encourages newborn muscle development and control on each side of the baby's body. Breast-feeding babies automatically feed from both sides. Parents who bottle-feed may need to be reminded to promote this skill in their newborn.
- Beginning at birth, prevent flat spots on the newborn's head from supine positioning by nightly alternating the head position from left to right during sleep and occasionally changing the newborn's orientation in relation to the activity at the room's doorway (Persing, James, Swanson, & Kattwinkel, 2003).

Oral Health

Ideally, pediatric oral health begins with prenatal oral health counseling for parents. If not already established, promotion of healthy oral hygiene practices and routine preventive dental care for parents establishes a foundation for a lifetime of good oral health for their children.

Protective factors for good oral health include good general health, appropriate use of fluoride in family members more than 6 months of age (either topically, in community water systems, or systemically as deemed appropriate by healthcare professionals), high socioeconomic status, family intake of simple sugars occurring primarily at mealtime, and regular use of dental care in an established **dental home**, a specialized dental care provider who manages and facilitates all aspects of oral health care. Risk factors include infant's siblings with dental caries in the past 12 months, active caries present in the mother, suboptimal fluoride exposure, frequent between-meal exposure of family members to simple sugars, low socioeconomic status, no usual source of dental care, and children with special healthcare needs (American Academy of Pediatric Dentistry [AAPD], 2004).

Parents can help prevent decay in their new baby by practicing good oral health habits from birth. In the first month of life, parents should be warned against propping the bottle in the baby's mouth while the baby falls asleep. Babies who sleep with their teeth exposed to juice, formula, or breast milk can develop early childhood caries in primary teeth, even before they emerge. (See Chapter 4 ∞ for further information on early childhood caries.)

Oral disease may be prevented if strategies are applied early enough in the child's life. The nurse plays an important role in assessing risk factors for dental disease, promoting oral hygiene beginning in infancy, and providing anticipatory guidance to help parents ensure good oral health for their children.

Mental and Spiritual Health

Bringing a newborn home can be an overwhelming emotional experience for the mother, her partner, and other family members. An immediate shift in roles and responsibilities must occur within the family. In addition to meeting the newborn's needs, the new mother must also deal with meeting other family members' needs, rapidly shifting emotions, and her postpartum body. At the same time, the family is establishing a secure and healthy atmosphere for the new baby. The nurse assesses signs of a growing secure attachment between parent and child in the first month of life by making observations such as:

- Parent frequently looks at the newborn.
- Parent has specific questions and observations about the newborn's individual characteristics.



RESEARCH

Newborn Self-Regulation

Some newborns and infants have a difficult time learning how to self-soothe, or self-regulate. Particularly affected are those with neurological delays or prematurity. A study was designed to measure the effectiveness of two strategies in assisting babies with brain lesions to quiet when crying. Twelve infants were randomly assigned to receive massage when crying, and 13 were randomly assigned to be swaddled in blankets when crying (Ohgi, Akiyama, Arisawa, & Shigemori, 2004). Parents were instructed in carrying out the prescribed techniques for a 3-week period. Swaddling was found to be the most effective intervention and succeeded in significantly decreasing the infants' crying time. Parents also reported greater satisfaction with this method. While massage therapy may be helpful for some conditions in infants and children, swaddling may be more effective in soothing the crying infant. Teach parents the swaddling technique (place the baby on a blanket and place arms at the sides, bring up the blanket securely around the baby and under one side, bring the other side around so the baby is securely wrapped, bring the bottom up over the feet). Ask about its effectiveness and provide other methods of calming the baby such as rocking, singing, and walking with the baby on the parent's shoulder.



Figure 8–4 ➤ A healthy parent forms strong attachments to the newborn and is motivated to ensure the child's physical and mental health. What observations can you make about these parents' attachment to their newborn infant?

- Parent touches, massages, or gently rubs the newborn.
- Parent attempts to soothe the newborn when the newborn is upset.
- Newborn looks content.
- Newborn signals needs.
- Newborn feeds well.
- Newborn responds to parent's attempts to soothe.

Newborns begin to make their needs known to parents through verbal and nonverbal cues. Engagement cues include looking at, reaching toward, and gazing at the caretaker. Disengagement cues indicate that the baby needs to have some quiet time and include turning away, falling asleep, flailing extremities, and crying. The nurse in this chapter's opening scenario helps the mother, Shannon, to learn her baby's cues of turning toward her, rooting, and engagement, as indicative of a need for feeding or attention. Babies also develop strategies for **self-regulation**, the ability to console the self.

The newborn's mental health and development is highly dependent on the mental and spiritual health of his or her primary caregiver, usually the mother. The mother who is emotionally whole and fully present in her newborn's life is best able to provide the nurturing environment necessary for optimal growth

and development (Jellinek, Patel, & Froehle, 2002). Assess for strengths as well as challenges, and offer resources to help the family meet their needs so that attention can be focused on the newborns (Figure 8–4 ➤).

During the health supervision visit, the nurse models behavior for parents that promotes positive infant mental health, such as handling the newborn gently, speaking in a soft voice, noticing attributes ("Look how you hold your head up today! You're really getting strong!"), and noticing likes and dislikes. The nurse strengthens parental confidence by asking the parent what the baby likes, such as, "How does he like to be carried, in your arms or up on your shoulder?" and then following the parent's advice. The nurse also promotes nurturing behavior by parents during procedures, such as allowing the parent to hold the infant on her lap and comforting him while the nurse administers immunizations or draws blood.

Most women experience postpartum "blues" or temporary sadness in the first week after delivery due to hormonal shifts and sleep deprivation. This usually resolves without intervention after a few hours to several days. Postpartum depression is a more serious and debilitating postpartum mood disorder (PPMD) that usually occurs 2–3 months after delivery. Counseling and medication originating from the mother's primary care provider may be necessary interventions. Postpartum psychosis is a serious condition that can occur at any point postpartum and is considered a psychiatric emergency (Jellinek, Patel, & Froehle, 2002).

Relationships

The family is the primary site where the infant learns to interact with other people. Therefore, family dynamics must be examined during health supervision visits. Observations are used to apply strategies that help parents in the relationship with the newborn. Identify both risk and protective factors in the family relationships (Table 8–2).

New parents may need assistance in identifying activities that promote family health and positive parent-newborn interaction. Provide the following suggestions to parents:

- Share newborn care activities. Recognize that you may do things differently than your partner, such as the way you change a diaper or give a bath, but if the baby is cared for, safe and secure, these differences in technique do not matter.
- Compliment one another on newborn caregiving strengths, such as the mother's ability to breast-feed and the partner's ability to calm the crying baby.

Table 8–2

RISK AND PROTECTIVE FACTORS IN NEWBORN AND PARENTS

Newborn Protective Factors	Newborn Risk Factors
Good health	Preterm birth, congenital disabilities, chronic illness
Normal eating, bowel, and sleep patterns	Feeding and sleep problems
Positive temperament	Fussing, crying, irritability, difficulty consoling
Responds to parent's attention	Diminished social interactions and responsiveness
Normal growth and development	Undernutrition, developmental delay
Parental Protective Factors	Parental Risk Factors
Welcome baby at birth	Baby unplanned and unwanted at birth; potential for neglect and/or rejection
Meet newborn's basic needs for food, shelter, clothing, health care	Financial insecurity, homelessness, lack of knowledge about how to care for newborn
Provide a strong nurturing environment	Cannot promote strong nurturing environment due to serious problems such as abusive behavior, depression, mental illness, substance abuse
Parents have a strong relationship with one another, share care of newborn	Severe marital problems, absent parent, or frequent change of partners
Strong self-esteem, developmental maturity, developing knowledge of infant development	Lack of parenting skills, lack of parenting self-esteem, inability to cope with multiple roles, inappropriate coping strategies
No history of maltreatment as a child	History of maltreatment as a child (risk increases with positive history)

- Attend health supervision visits together as much as possible.
- Be sensitive to when your partner is overstressed and overtired. Ask how you can help and then follow through with suggested activities. Sometimes listening is the most helpful thing you can do.
- Rest and take time for yourself. Make decisions about what must be done (paying bills, laundry, grocery shopping) and what could wait (traveling to visit grandparents, painting the house, cleaning closets). Accept help from family and friends.
- Discuss how you will raise your baby in a loving, supportive, and respectful environment.
- Discuss how you were raised and what you would like to be different in your new family. Learn about parenting strategies and try out what feels comfortable for you.
- Keep in contact with family and friends. Maintain community ties that are important to you, such as social, religious, cultural, or recreational organizations or programs.
- Leave the baby with a trusted friend or family member and take time to be alone once in awhile. Talk about something other than the baby.
- Prepare siblings for the new baby prior to the baby's arrival. Allow siblings to "help" care for the new baby in age-appropriate ways. Praise siblings for positive attention they give to the baby, and allow siblings to express their feelings about the new baby and changes in the family.
- Support one another in seeking and using community resources to strengthen parenting skills, such as classes and parenting groups.



CLINICAL TIP

Hearing loss occurs in 1 of every 1000 healthy newborns and 20–40 newborns out of 1000 requiring intensive care (AAP, 2002). Universal hearing screening (all newborns tested regardless of risk factors) prior to hospital discharge is becoming the standard of care; however, universal hearing screening is not mandated by law in some states.

Newborn hearing screening is not diagnostic. A baby who “fails” the initial screen may be re-tested prior to hospital discharge. Parents should be advised that a “failed” screen is only an indication for referral to an audiologist for more conclusive testing. The evaluation should occur as soon as possible, but no later than 3 months of age. If treatment is delayed for longer than 6 months, permanent developmental delays can occur in an otherwise healthy infant (AAP & ACOG, 2002, p. 209). Encourage parents to return for follow-up screening and provide suggestions for observing their infant’s hearing ability.



MediaLink

March of Dimes



Figure 8-5 ▶ Parents are more likely to place newborns to sleep lying on their backs when they have seen health professionals do this in the hospital. Role model this recommended position for parents when you care for newborns.

- Cuddle, hold, and rock the baby as much as possible. Babies cannot be spoiled by too much attention.
- Take advantage of the baby’s awake time to play with the baby. Singing, reading, and simply talking to the baby about what is happening around her or him provides the baby with developmental stimulation.

Disease Prevention Strategies

The newborn period is a critical time for identifying diseases at a time when they can often be successfully treated. Monitoring ensures that the sequelae of diseases can be minimized. For example, identification of a hearing problem may lead to early intervention to maximize the infant’s potential for communication development. Disease prevention in the first month of life includes health maintenance activities such as:

- *Metabolic screening* All states require screening for congenital metabolic diseases, such as phenylketonuria. The March of Dimes recommends screening for at least 29 disorders (March of Dimes, 2004).
- *Hearing screening* (see Chapter 19 ∞ for further information about newborn hearing screening).
- *Eye examination* which ensures that the infant’s ability to see is developing normally.
- *Immunizations*

See Table 8–3 for immunizations recommended at birth; detailed immunization recommendations can be found in Chapter 18 ∞.

- *Prevention of secondhand smoke exposure* Encourage all parents to avoid smoking near infants, and to stop smoking so that the baby does not inhale smoke from clothing and the environment. About 25% of children live with at least one smoker. Recent research indicates that secondhand smoke (also called environment tobacco smoke or ETS) contains gases and particles that cause Sudden Infant Death Syndrome, acute respiratory infections, slowed lung growth, ear problems, and severe asthma in children (Centers for Disease Control and Prevention, 2006).
- *SIDS risk reduction* (Figure 8–5 ▶) Sudden Infant Death Syndrome is a devastating problem. Chapter 20 ∞ has a detailed description of the condition. Some interventions can lower the risk of SIDS. For information on SIDS risk reduction, see Families Want to Know: SIDS Risk Reduction.
- *Formula safety* (see Chapter 4 ∞) When newborns are fed baby formula, parents need clear instructions about its preparation and storage. These guidelines ensure that the formula is kept free from harmful microorganisms and is prepared in the proper concentration.
- *Handwashing* Handwashing is the key to preventing illness in the newborn and family members. It should be encouraged and modeled at every health promotion and health maintenance encounter. Hand hygiene products can be inserted into diaper bags so that parents always have access to cleansing products.

Table 8–3

IMMUNIZATIONS RECOMMENDED FOR THE NEWBORN

Immunization	Recommendation
Hepatitis B	Before leaving hospital; for newborn with HBsAg-positive mother, must be given within 12 hours of birth
Hepatitis immune globulin	Only for newborn with HBsAg-positive mother, must be given within 12 hours of birth

FAMILIES WANT TO KNOW

SIDS Risk Reduction

Sudden Infant Death Syndrome (SIDS) is defined as the sudden unexpected death of an infant less than 1 year of age, with onset of the fatal episode apparently occurring during sleep, that remains unexplained after a thorough investigation, including performance of a complete autopsy and review of the circumstances of death and the clinical history (Krous, Beckwith et al. 2004). SIDS is the major cause of death in infants from 1 month to 1 year of age, with most deaths occurring between 2 and 4 months (Health Resources and Services Administration [HRSA], 2004). See Chapter 20 for further information about SIDS.

Currently, there is no way to prevent SIDS, but parents and caregivers can reduce the risk of a SIDS death. Prenatal behavior and ma-

ternal health can influence the occurrence of SIDS. Parents should know the following rules for basic sleep safety to reduce the risk of SIDS.

- Always place the baby on his or her back for sleep.
- Use a safe crib and a firm mattress.
- Remove all fluffy objects from the crib, such as quilts, stuffed animals, and pillows.
- Make sure the baby's face and head stay uncovered during sleep. Use a blanket sleeper instead of blankets in the crib.
- Avoid overheating the baby. A room temperature that is comfortable for the parent is fine for the newborn.
- Never smoke or allow anyone to smoke around the baby.

- *Minimizing the newborn's exposure to disease* Parents should be encouraged to avoid infant exposure to large crowds, especially in cold and influenza season; cover coughs and sneezes; and use good handwashing technique. If the newborn is exposed to varicella, pertussis, herpes, or other serious communicable diseases the caregiver should be alerted.

Injury Prevention Strategies

New parents are sometimes unaware of sources of potential injury for the newborn. Some aspects of injury prevention are pertinent to the newborn's immediate care and other topics promote discussion and provide opportunities for anticipatory guidance. In the immediate newborn period, the nurse should assess the parents' knowledge of injury prevention strategies, and promote healthy and safe habits. Injury prevention strategies include proper and consistent use of an infant car seat, and strategies to prevent falls, burns, choking, drowning, and suffocation (Table 8-4).

Newborn safety awareness begins in the birth setting. Parents should be cautioned against laying the baby on the mother's bed instead of in the bassinet, taught to use the bulb syringe in the event that the baby spits up a large amount of fluid, and instructed to position the baby supine instead of side-lying or prone. Parents should also be oriented to procedures in place to prevent newborn abduction and to their critical role in assuring newborn safety and security. Be sure the parents are equipped to provide the newborn a safe ride home. Refer parents to a local trained Child Passenger Safety Technician for assistance, or use 1-888-327-4236 to find a car seat inspection location. Web sites are also available for car seat safety information.

Following hospital discharge, the nurse promotes safety by encouraging parents to think about the hazards that the child could encounter and how to eliminate them. In the newborn period, the parent or caregiver is uniquely responsible for ensuring that the newborn is not placed in a dangerous situation. The newborn cannot turn on a hot water faucet or run with a sharp object, but it is possible for the parent to inadvertently place the newborn in danger. The newborn is capable of twisting and rolling off any surface higher than the floor, falling out of an infant carrier seat, or drowning while left unattended for a moment in a bathtub filled with only a few inches of water.

Parents might find it helpful to be aware that most pediatric injuries occur when the parents are under stress; for example, when a parent is hungry and tired (the hour before dinner), during pregnancy, during illness or death in the family, when there is tension between parents, and during changes in the environment, such as a change in the child's caregiver or the family's living environment (Shelov, 2004). At these times, the parent should be particularly vigilant and closely supervise children.

CULTURE

SIDS

The Back to Sleep campaign is an ongoing nationwide public health effort to disseminate information about the benefits of placing the baby to sleep on his or her back. It has led to an almost 50% drop in the number of SIDS deaths, but significant disparity still exists among racial and ethnic groups (HRSA, 2004). SIDS rates are highest for African Americans and American Indians and lowest for Asians and Hispanics. In 2001, the rate of SIDS among African Americans was more than twice that of Whites, and more than three times greater among American Indians than Whites (HRSA, 2004).

To promote the use of supine sleeping position for African American babies, the Back to Sleep campaign partners joined with the National Black Child Development Institute and other historically Black organizations to develop materials for a new initiative to reduce SIDS in African American communities. Another culturally competent effort to reduce SIDS deaths among American Indians and Alaskan Natives is a tool titled "Face Up to Wake Up,"™ which is used by health and medical service providers and community health trainers to expand SIDS risk reduction activities in Indian Country.



MediaLink

Car Seat Safety Resources

Table 8-4 INJURY PREVENTION TOPICS FOR NEWBORNS

Topic	Injury Prevention Teaching Topics
Car safety seat	<ul style="list-style-type: none"> • Choose an infant-only seat or a convertible seat suitable for an infant. • Ensure infant rides rear-facing until at least 1 year of age and more than 20 pounds. • Remember the safest place for all children to ride is in the back seat. Never place a rear-facing car safety seat in the front seat with an active passenger air bag. • Use a car safety seat every time the infant is in the car. • Read and follow the manufacturer's instructions for the car safety seat and the vehicle owner's manual for installation information. • Dress the infant in clothes that allow the straps to go between the legs. Never place blankets under the baby. Buckle the baby into the seat, and place blankets over the baby. • To make sure the car safety seat is installed correctly and the baby is positioned correctly, go to a car seat inspection station. A certified Child Passenger Safety Technician will assist you. Find a list of certified CPS Technicians by state or zip code on the National Highway Traffic Safety Administration web site. Find a car safety seat inspection station online or call 1-888-327-4236.
Shaken Baby Syndrome	Never shake a baby. Recognize that sometimes you will not be able to console your baby. Shaking a baby, even for only a few seconds, can cause serious brain damage and death. One of four shaken babies dies.
Crib	Use a safety approved crib. Slats should be no more than 2 3/8 inches apart. Mattress should be firm and fit snugly into the crib. Keep crib rails raised.
Co-sleeping	Do not co-sleep. The AAP discourages co-sleeping because of the risk of SIDS (with overheating as a possible factor) and the danger of suffocation. Sleep with the baby nearby, but not in the parental bed. If the parent must sleep with the baby, ensure that the infant is supine and separated from any soft surfaces such as pillows; ensure that no blankets will cover the infant's head; beware of spaces between the mattress and the wall, headboard, or footboard; and do not sleep with the baby under the influence of drugs or alcohol. The infant should never sleep in the same bed with siblings due to a significant risk of suffocation.
Baby toys	Use age-appropriate baby toys. Check toys for sharp edges or loose parts. Keep older siblings' toys out of baby's reach. Do not use toys with loops or string cords.
Drowning	Never leave the baby alone in the bathtub. If you must turn your back on the baby or leave the room, take the baby out of the tub.
Suffocation	Keep plastic bags and wrappings away from the baby (take the plastic bag off the crib mattress). Shake baby powder into your hand first and then apply it so the baby does not inhale it. Do not allow a baby or sibling to play with a latex balloon. Keep small objects (such as safety pins, coins, small toys) out of the baby's reach. Do not attach pacifiers, medals, or other objects to the crib or to the baby's body with a string or cord. Do not put the crib near blinds, curtains, or anything with a hanging cord. Do not let the baby wear clothing with strings near the neck (such as a sweatshirt hood that ties with a cord) or a headband that could slip down and wrap around the baby's neck. Use a tight-fitting crib sheet that does not come loose when the corner is pulled.
Burns	Set the hot water heater thermostat lower than 120 degrees F. Do not smoke or drink hot liquids while holding the baby. Do not microwave bottles of formula or breast milk due to uneven heating. Do not expose the baby to direct sunlight.
Falls	Keep a hand on the baby while dressing or diaper changing on a surface other than on the floor. Never leave the baby unsupervised on any high surface such as a bed, changing table, or sofa. Always keep one hand on the baby.
Pet safety	Keep some distance between the newborn and the pet until the pet's initial reaction to the new baby is assessed. Never leave the baby unsupervised with the family dog or cat, or any animal capable of harming the newborn.
Sibling supervision	Never leave your baby alone with a young sibling. When a young child holds the baby, seat the child on a large soft surface, such as the couch and supervise closely. Watch siblings for aggressive behavior toward the newborn, such as hitting or biting. Siblings may take on a caregiving role and imitate adults; watch for "feeding" of non-food items or choking hazards.
Fire safety	Install working smoke detectors on every floor of the house and in every sleeping area. Have a fire escape plan from your house and practice it.
Poisoning	Post the universal phone for U.S. poison control number near your telephone: 1-888-222-1222.
Gun safety	Keep the gun unloaded and locked up. Keep the ammunition locked up separately from the gun. Consider not keeping a gun in the household due to safety hazards for family members.
In case of emergency	<ul style="list-style-type: none"> • Know when and how to call your pediatric care provider. • Know when it is appropriate to go to the emergency department. • Take a first aid class and learn CPR for children and adults.

Adapted from American Academy of Pediatrics, 2004a; Carbaugh, 2004; *Child Restraints*, 2004; Green & Palfrey, 2002; Shelov, 2004.



NURSING MANAGEMENT

Nursing Assessment and Diagnosis

An essential skill for the nurse in the hospital, clinic, or community setting is the ability to assess the family and newborn and identify potential health promotion and health maintenance activities. Many health promotion and health maintenance activities are pertinent to prenatal health as well as the postpartum period. If maternal and pediatric care providers are located at different agencies, nurses must coordinate and integrate services so that the new mother and family benefit from a seamless continuum of care.

Based on nursing assessments, the nursing diagnoses form the basis for subsequent interventions. Possible nursing diagnoses for the family and newborn in the first month following birth might include:

- Anxiety (Parent) related to change in role status
- Risk for Impaired Attachment related to parental exhaustion or lack of knowledge of infant cues
- Risk for Impaired Parenting
- Effective Breast-Feeding related to basic breast-feeding knowledge
- Ineffective Breast-Feeding related to inadequate sucking by infant
- Infant Feeding Pattern, Ineffective related to newborn's inability to suck effectively
- Readiness for Enhanced Parenting related to lack of information or skills of newborn care

Planning and Implementation

Newborn health maintenance and health promotion begins in the prenatal period. In most cases, the expectant mother is highly motivated to engage in activities that result in a healthy newborn, and the healthcare team has a unique window of opportunity to promote maternal and newborn health.

In the prenatal period, the nurse's goal is to promote an optimal outcome for both mother and newborn. Comprehensive quality prenatal care is outside the scope of this text; however, important health maintenance and health promotion activities include interventions to help ensure healthy diet and exercise; avoid alcohol, tobacco, and drugs; and establish or maintain a dental home. The nurse may assess the need for assistance with food, clothing, and safe housing, which entails numerous referrals and advanced skills to ensure coordinated community services. The nurse provides anticipatory guidance regarding newborn care and safety, and the nurse may assist the woman with choosing a pediatric healthcare provider. The nurse in the prenatal setting plays an important role in educating the woman about breast-feeding's lifelong benefits, and guiding her toward an informed infant feeding decision.

Hospital-Based Care

The hospital length of stay is short for the healthy mother and newborn. The nurse in the birth setting is responsible for assessing and implementing nursing care during a time of dramatic physiologic changes in both mother and newborn, as well as helping the new parents learn basic newborn care skills. Consistent and accurate breast-feeding information is essential to ensure continued efforts at home, and referral to a lactation specialist or support group is helpful. The nurse assesses and refers the mother to community resources as needed for domestic violence and drug, alcohol, or tobacco use. The nurse may coordinate interventions such as WIC to help ensure adequate food and nutritional support. Refer the mother to parenting classes or support groups. Through listening to the family's concerns, providing nurturing responses, respecting cultural differences, and validating parental efforts to learn parenting skills, the nurse further develops the partnership between the family and their healthcare providers.

Prior to discharge the newborn has blood taken for metabolic screening, may have initial hearing screening, and may receive the first hepatitis B vaccination. Follow-up after these interventions requires communication among multiple community agencies and the pediatric care provider to ensure that the newborn receives appropriate continuing care.

Care in the Community

In the outpatient setting, the pediatric healthcare team's goal is to "help the parents gain knowledge and confidence in caring for the physical, intellectual and emotional needs of their infant, and to encourage their personal growth as parents and the family's development as a unit" (Green & Palfrey, 2002). In the first month of the newborn's life, health promotion and maintenance activities may include teaching the parents how to interact with their baby to promote attachment; provide a safe sleeping environment; continue development and validation of baby care activities, especially breast-feeding; and begin to learn about the newborn's temperament in order to respond quickly and correctly to needs in order to promote infant mental health.

The relationship between the family and pediatric healthcare team must be nurtured. Time should be allowed for parents' questions. Cultural differences in perspectives must be considered. Results of screening and testing should be explained. When the nurse involves the parent in the infant's healthcare activities in these ways, it is more likely that parents will be cooperative and interested in promoting and maintaining their child's health.

Evaluation

Expected outcomes for the family and their infant by the end of the first month include:

- The newborn makes a successful transition from intrauterine to extrauterine life.
- Risk factors are identified in the prenatal and newborn period, and nursing assessment coordinates with medical intervention to prevent or manage complications.
- The newborn achieves expected physical and developmental milestones.
- The family begins successful integration of the newborn into the family.
- Parents demonstrate newborn care skills and beginnings of healthy attachment behaviors.
- Parents recognize the importance of health promotion and health maintenance activities and partner with healthcare professionals to promote and maintain the physical and mental health of their newborn and family.

HEALTH PROMOTION AND HEALTH MAINTENANCE FOR THE INFANT

Infancy is a major life transition for the baby and parents. The infant accomplishes phenomenal physical growth and developmental milestones while the family adapts to the addition of a new member and establishes new goals for each of its existing members. Infant health supervision visits are very important to support the health of the baby and the family unit. These visits begin after the newborn period, at about 1 month of age. This is the time when parents establish an ongoing partnership with a healthcare provider. A "medical home" or "**pediatric healthcare home**" is identified to serve the baby's health needs. The goals of health supervision visits are to identify and address the infant's health promotion and health maintenance needs.

Facilitating breast-feeding, helping parents to understand their infant's temperament, and employing strategies to ensure adequate sleep by the baby and parents are examples of health promotion activities. Health maintenance activities focus on disease and injury prevention. Some examples of these interventions include administering immunizations and teaching about infant car seats.

Establishment of the relationship with a healthcare provider and agency is important so that trust develops and the family will feel comfortable about turning to the professionals for information and guidance as the baby grows. Nurses play a vital role in welcoming new families into office and clinic settings, establishing rapport, and applying principles of communication so that trust and positive partnerships develop between providers and families. Infancy is a time when the child grows in physical, psychological, and cognitive ways; health supervision visits play a key role in fostering healthy growth and development. When should the infant be seen for health supervision visits? What are key components of these visits? How can the nurse best assess and intervene to ensure the infant's health and safety? These are some of the questions that will be answered in this section of the chapter.

Early Contacts with the Family

Health promotion and health maintenance occur in a series of health supervision visits during the first year of life. Schedules vary among facilities, but a common pattern includes visits at about 1 month, 2 months, 4 months, 6 months, 9 months, and 1 year of age. In addition, most children have some episodic illnesses such as gastrointestinal illness or otitis media and visit the facility at other times for treatment of these illnesses. A few children have chronic or serious healthcare problems during the first year, and have extensive contact with the healthcare home and other services.

During these first visits, assess the family for protective factors and risks. Protective factors might include the knowledge level of infant needs, support from family and friends, and the mother's good health and nutritional state during pregnancy. Risk factors could include limited financial resources, lack of preparation for the baby, and illness or other stress among family members. Knowledge of these factors will shape the nursing interventions in the first health supervision in infancy. The nurse applies health promotion principles by building on strengths and fosters health maintenance by intervening to minimize risks.

General Observations

When the family comes to the clinic or office for care with an infant, general observations should begin at first contact (Figure 8-6 ►). Welcome the family warmly to the facility and comment on the baby. Ask how the family is doing with the baby and how the adjustment is going. Be alert for signs of fatigue or depression in the parents, as these can occur when caring for an infant and can interfere with bonding and positive transition. Upon entering the examination room, it is helpful to explain the plans for the visit, such as "I will weigh and measure your baby now and show you how she is growing. Then I'll ask a few questions about her eating, sleeping, and other things. Then the nurse practitioner will be in to do Rhonda's physical examination. Do you have any questions as we start? Will you undress Rhonda now so we can weigh her accurately?"



Figure 8-6 ► The nurse begins assessment of the infant's family when they are seen in the waiting room and called in for care.

What observations can you make of the infant's general appearance? Developmental accomplishments? Interaction of parents with the baby?

Growth and Developmental Surveillance

Physical growth and meeting of developmental milestones provide important information about infants. The baby is measured for accurate length, weight, and head circumference (see *Clinical Skills Manual* and Chapter 5; see Figure 8-7 ►). The measurements should be placed on growth grids and interpreted. Parents enjoy seeing how the baby is progressing and are usually eager to learn about the child's weight gain and growth percentiles. Be alert for an infant who demonstrates a change in percentile range. For example, if the baby was in the 75th percentile for length and weight at birth, but has fallen to below the 50th percentile for weight, additional assessment will be needed about the baby's feedings. Likewise, if the head circumference is much lower



SKILLS 6-1 THROUGH 6-7:
Growth Measurements

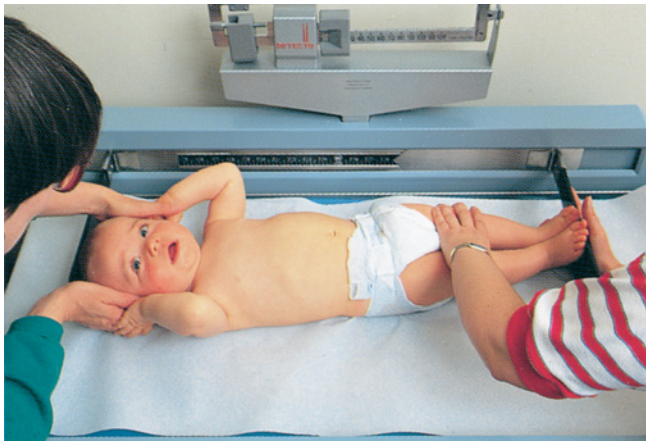


Figure 8-7 ▶ Weighing and measuring length during health supervision visits provides important information about the child's nutrition and general development. This young infant was measured, and then the nurse placed the findings on the growth grid while the parents dressed the child.

CULTURE

Developmental Milestones

Be alert for differences in cultural practices and beliefs that may influence developmental milestones. For example, if a child is kept on a cradleboard for much of the time, the baby may be slow in learning to crawl. This baby may progress directly to standing by furniture without demonstrating as much creeping or crawling as other infants. In addition, when parents do not have English as a primary language and the examiner uses English, common terms might be misinterpreted. Parents might not understand what is meant if you ask "Does your baby have a mobile over the crib at home?" or "Is she starting to be afraid of strangers?" How can you be alert for language differences and become sensitive to miscommunication?

or higher than the length and weight percentiles, further neurological and developmental assessment should be done.

Growth measurement is followed by a physical assessment. The nurse may complete parts of the assessment, with the remainder performed by the physician, nurse practitioner, or other primary care provider. The assessment evaluates each body system, with particular attention paid to heart, skin, musculoskeletal system, abdomen, and neurological status. See Chapter 5 ∞ for a thorough discussion of physical assessment.

Developmental surveillance is integrated into each infant healthcare visit by observing developmental milestones in the infant (see Chapter 3 ∞ for a summary of milestones expected at different ages and see Table 8-5 for specific tasks in infancy). When there is no opportunity to directly observe a skill, ask parents about whether the infant performs the skill. In addition to direct observation, parents are usually requested to fill in a form that asks questions about common developmental tasks. Review the results and determine if additional questions should be asked. When some milestones have not been met, make an appointment for the infant to have a developmental test by a certified examiner.

When a child has not been seen as often as recommended, perform a thorough developmental assessment to identify any expected milestones not yet achieved. Reinforce the need to make an appointment for the next visit and plan with the family how to remember the appointment and to ensure the family's ability to bring the child to the healthcare visit.

The nurse establishes health promotion and health maintenance interventions related to growth and development assessment data. Anticipatory guidance related to development is a major component of health promotion. The nurse anticipates the next milestones the infant will be meeting, and recommends ways for the parents to support the infant in progression. Some health promotion activities include:

- Teaching about food introduction that will foster growth
- Encouraging toys and activities that will assist in meeting the next developmental milestones
- Demonstrating gross and fine motor skills that the infant has achieved
- Demonstrating to parents how the child will focus on their faces and mimic their vocal sounds

Other interventions are focused on health maintenance or disease and injury prevention. Safety hazards and ways to avoid them are discussed, and parents are given brochures, web sites, or videotapes to enhance injury prevention information. Can you outline additional health promotion and health maintenance interventions that relate to the infant's growth and development?

Nutrition

The importance of nutrition during the first year of life cannot be overestimated. The baby will triple his or her birth weight by 1 year of age, and has a great need for nutritional balance. From the first sips of breast milk or formula as a newborn, to eating the family meal at 1 year of age, the fast progression of nutritional intake patterns is obvious. See Chapter 4 ∞ for a thorough description of nutritional needs during infancy.

During each visit, the nurse seeks to learn what the baby is eating, and whether the family has any questions or concerns related to intake (Story, Holt, & Sofka, 2002). Open-ended questions are a good way to begin, with more specific questions inserted after the parent's perceptions are known. Once the baby is in the second half of the first year, food patterns of the family become more important. Consider child-care settings as well.

Table 8–5

INFANT DEVELOPMENTAL MILESTONES OBSERVED IN HEALTH PROMOTION AND HEALTH MAINTENANCE VISITS

Age	Developmental Milestones
1 month	<ul style="list-style-type: none"> • Responds to sound by startle or increased alertness • Follows objects and human face with eyes • Has periods of alertness and restfulness • Comforted by touch or feeding by parent • Has symmetrical movements and generally has arms and legs flexed • Lifts head momentarily when prone
2 months	<ul style="list-style-type: none"> • Previous characteristics continue • Makes noises such as cooing in response to interaction with adult • Smiles • Lifts head, neck, upper chest when prone • Has increasing head control when held in sitting position
4 months	<ul style="list-style-type: none"> • Increasing cooing and babbling • Smiles, laughs, makes other noises during interactions • Supports self on hands when prone • Rolls front to back • Touches objects and grasps rattle placed near hand
6 months	<ul style="list-style-type: none"> • Uses sounds in repeated speech such as bababa, dadadada • Interested in surroundings and toys • When pulled to sitting has no head lag • Sits with support • Grasps objects easily and places them in mouth • Transfers objects from one hand to other • Bears weight on legs when held in standing position
9 months	<ul style="list-style-type: none"> • Understands simple words and uses more sounds in babbling • Responds to name • Enjoys interactive games with parent • Moves when placed on floor by crawling, creeping, or rolling repeatedly • Sits without support • Stands holding on to support • Plays with toys • Feeds self readily with fingers and tries to use cup
12 months	<ul style="list-style-type: none"> • Has one or more words • Imitates sounds readily • Increasing interactions and interest in surroundings • Follows directions such as saying or waving bye • Pulls to standing, walks a few steps holding on • Well-developed pincer grasp • Able to drink from cup

Observations from other portions of the visit can provide clues about additional questions to ask. If an infant has not gained weight as expected and has fallen into a lower channel of weight percentile, more specific analysis of intake is needed. Ask for a recall of the baby's intake in the previous day. When the baby does not meet developmental milestones on schedule or is lethargic, intake may be inadequate for age. In these cases support may be needed to ensure adequate intake; a thorough description of feeding may be the first step in analyzing the problem and planning interventions. When the child's ability to take in nutrients or the parent's ability to feed the baby is questioned, an observation of a feeding might take place, either at the healthcare setting or during a home visit.

Additional nutritional assessment measures are used at certain points in the first year. A hematocrit or hemoglobin is generally performed between 9–12 months of age. Lead screening may be needed in certain population groups (see Chapter 6 ∞). Food security screening can be used when appropriate (see Chapter 4 ∞). Each visit includes nutritional teaching about important items. The topics for discussion vary according to age group. See Table 8–6 for suggested teaching topics at specific ages.

Table 8–6

INFANT NUTRITION TEACHING FOR HEALTH PROMOTION AND HEALTH MAINTENANCE VISITS

Age	Nutrition Teaching
1 month	<ul style="list-style-type: none"> • Support breast-feeding efforts • Teach correct formula types and preparation if used • Teach burping and rate of feeding information • Suggest water during hot weather or if family wants to use a bottle at baby's bedtime • Encourage families to view feedings as social interactions; emphasize importance of holding the infant and not propping bottles
2 months	<ul style="list-style-type: none"> • Continue as previously noted • Review fluid needs of infants • Reinforce food safety for partially used bottles of breast milk or formula • Use warm water for heating bottles rather than microwave to avoid burning • Warn against feeding honey in the first year of life • Begin cleaning of infant gums daily • Provide information about any supplements needed (for example, iron for premature infant, vitamin D for babies not exposed to adequate sunlight)
4 months	<ul style="list-style-type: none"> • Continue as previously noted • Discuss introduction of first foods between 4–6 months, and surveillance for symptoms of allergy or intolerance • Discuss changing food patterns such as increasing amounts and decreasing numbers of daily milk feedings
6 months	<ul style="list-style-type: none"> • Continue as previously noted • Reinforce proper introduction of new foods, to include rice cereal, fruits, vegetables • Discuss any unusual food reactions observed • Introduce cup for drinking • Introduce soft finger foods • Serve juice only in a cup and limit to no more than 6 ounces daily • Caution about common choking foods and items • Provide information about fluoride supplement if water supply is not fluoridated
9 months	<ul style="list-style-type: none"> • Continue as previously noted • If mother does not continue to breast-feed, teach family to use iron-fortified formula for the first year of life • Encourage self-feeding of finger foods, integrating common foods for the family • Introduce source of protein such as tofu, cheese, mashed beans, slivers of meats
12 months	<ul style="list-style-type: none"> • Continue as previously noted • Support mother who wishes to continue breast-feeding beyond 1 year of age • Encourage cups for all feedings other than breast

Desired outcomes for nutrition in infancy include adequate growth, normal nutritional assessment findings, and knowledge by parents of the infant's nutritional needs.

Physical Activity

Physical activity is needed for adequate development of fine and gross motor skills in infancy. Unlike other times of life, the focus is on providing only the opportunities for activity, without a need to focus on motivation. As long as infants are meeting developmental milestones and have a stimulating environment that provides opportunity for fine and gross motor activity, they will use their motor skills, thus enhancing their performance. Time should be provided each day for the infant to reach for objects, exercise legs and arms freely, and increasingly use head control. Playing with parents or others and being surrounded by toys and other stimulating items will encourage motor behavior in all body parts. Ask the parents for a description of the baby's typical day and listen for these types of play periods.

Observe the infant's physical skills, ask questions about play periods provided, and compose a list of the family protective factors and risk factors in this area. Table 8–7 lists risk and protective factors related to physical activity during infancy.

Table 8–7

RISK AND PROTECTIVE FACTORS REGARDING PHYSICAL ACTIVITY IN INFANCY

Risk Factors	Protective Factors
<ul style="list-style-type: none"> • Premature birth • Delayed developmental milestones • Limited stimulation by family or other care providers • Lack of knowledge by family about infant's physical activity needs • Limited community resources for families with infants 	<ul style="list-style-type: none"> • Meets developmental milestones at expected ages • Has contact with parents, siblings, and others for significant time each day • A supportive environment with room to play safely, stimulating surroundings • Physically active family • Family knowledge about infant's physical activity needs • Community programs that promote physical activity in infants and information for families

Adapted from Patrick, K., Spear, B., Holt, K. & Sofka, D. (Eds.). (2001). *Bright futures in practice: Physical activity*. Arlington, VA: National Center for Education in Maternal and Child Health.

Based on the results of assessment and using the concept of anticipatory guidance, the nurse plans appropriate teaching for the family. Health maintenance deals with prevention of physical development delays. The nurse evaluates success of interventions by the child's progression in physical activity milestones at the next health supervision visit. Adequate parental understanding of the importance of physical activity and the means of supporting the child's activities is an important outcome of care.

Oral Health

The first teeth begin to erupt about midway during infancy. Two front teeth are common at about 6 months of age. However, even before this, parents lay the foundation for good oral health. The mother's intake during pregnancy and breast-feeding are essential to ensuring adequate availability of calcium and other nutrients that will be used as the infant's teeth develop. The nurse in child health supervision settings ensures that the baby has adequate intake of these nutrients via breast-feeding and other foods. A dietary recall of the mother's intake, as well as the infant's, is one way of assessing for nutrients. When the water supply is not fluoridated, inquire about use of fluoride drops.

Help the family establish healthy dental habits. The parents should wipe the infant's gums with soft moist gauze once or twice daily. This helps to clean food residues from the gums and gets the baby accustomed to having something wiping the gums, a practice that may assist when tooth brushing begins. Families are also cautioned to avoid having the baby nurse when sleeping, to avoid use of bottles in bed, and not to allow the baby to drink at will from a bottle during the day. Ask if the child is receiving fluoride drops. These practices are linked to early childhood caries (see Chapter 4 ∞) and can lead to tooth decay. Nurses assess for the presence of teeth and whether patterns are similar to those expected (see Chapter 5 ∞). It is wise to ask if the baby has had any difficulty with teeth eruption. Many babies have increased crying and parents have disrupted sleeping during these periods. Suggest comfort measures such as offering the baby cool beverages and safe "teething toys."

Mental and Spiritual Health

The baby's mental health is related to early experiences, inborn characteristics such as temperament and resilience, and relationships with caregivers. In addition, the first year of life provides opportunities for the infant to develop positive mental health; interventions during this important period can enhance the child's future mental status.

One way to evaluate mental health is to look carefully at the growth and development surveillance data that was previously described. Children who feel secure and have nurturing environments usually grow as expected and perform milestones at usual

NURSING ALERT

Be sure that parents do not give the child excessive fluoride because it can permanently discolor the teeth. For example, this may happen if the parents administer fluoride drops each morning since their water supply has no fluoride, but then have the child at a care center several days each week where the water supply is fluoridated. Fluoride 0.25 mg is recommended for the child who is from 6 months to 3 years in communities with drinking water that contains < 0.3 ppm. Consult drug references for doses recommended at other ages.



Figure 8-8 ➤ Interactions between the parent and infant provide clues to mental health. Do the adult and child appear comfortable with each other? Is eye contact and vocalization present? Are their bodies soft and relaxed or tense?



GROWTH & DEVELOPMENT

Infant Sleep Patterns

Birth – 3 months

10–16 hours of sleep daily in about five sleep periods of 30 minutes to 3 hours

3–6 months

14 hours of sleep daily with a longer sleep at night plus 2–3 naps daily
By 4–6 weeks, a consistent sleep pattern should emerge

6–12 months

12–14 hours of sleep daily with a longer sleep at night plus 1–2 naps daily

Adapted from Green & Palfrey, 2002.



MediaLink

*Helping the Infant Sleep
Video*

times. Slow growth and delayed development are sometimes related to a feeding disorder of infancy and early childhood (see Chapter 4 ∞). In these cases, a disturbed relationship with the primary caregiver influences the infant's psychological state and results in decreased food intake. Another way to assess mental health is to observe the child and parent interacting. Does the parent hold the baby securely and does the child cuddle and settle in to the parent's arms (Figure 8-8 ➤)? Is there eye contact between parent and child? Does the parent appear comfortable in holding and comforting the baby? These interactions indicate bonding or positive attachment.

During the first year, the baby learns to identify parents; beginning at about 6 months of age, infants may cry or protest when another person holds them. This is called **stranger anxiety** and indicates expected attachment to parents. Similarly, infants in the second half of the first year of life may exhibit **separation anxiety** by inconsolable crying and other signs of distress when parents are not present. Recognize that these behaviors are normal, demonstrate healthy attachment to primary caregivers, and indicate mental health. Help parents to recognize them as expected occurrences. Provide them ideas of how to deal with this behavior. They can remain in sight and talk to the baby during health supervision examinations, and they should be encouraged to hold and comfort the baby after painful procedures like immunizations. Once the infant has experienced that the parent leaves and returns, security in the care of others can emerge.

Another important indication of infant mental health is the ability to comfort oneself. Self-regulation is the process of dealing with feelings, learning to soothe self, and focusing on activities for increasing periods of time. Infants learn early how to comfort and calm themselves. Ask parents if the child sucks a finger, softly rocks, or otherwise comforts self when distressed. Some babies prefer to be alone and quiet when tired or distressed; others calm better when held, rocked, or placed in an infant swing. Help the parents to identify and reinforce the infant's methods of self-soothing, and teach swaddling and rocking techniques.

Self-regulation is needed when the infant is learning to go to sleep while tired and agitated. Infants progress into circadian rhythm at 2–3 months and begin to sleep more at night than during the day. By 6 months, the infant commonly sleeps 6 hours without waking, and returns to sleep after one nighttime feeding. A total sleep time of 14 hours/day is common (Davis, Parker, & Montgomery, 2004; Hoban, 2004). Nurses use health promotion principles to teach about sleep patterns in infants, and implement health maintenance when partnering with families to deal with problem sleep behaviors that lead to infant and parent fatigue. See Evidence-Based Practice: Infant Sleep on the following page.

The baby is born into a family with spiritual strengths and limitations. The nurse assesses the family and provides additional resources when needed. While the infant is not mature enough to understand the family's spiritual framework, the atmosphere in the family that relates to nurturing, valuing children, providing a safe and secure environment, and recognizing mental balance is conveyed readily to the infant. The infant's social and psychological health are closely related to these factors. Assess the family's meaningful activities and practices and engagement in faith-based practices. Ask if they have needs or desires for referrals in the community such as to an organized religious body or other meaningful activities.

Many of the nurse's interventions are aimed at healthy mental health development in the baby. Health promotion activities focus on teaching parents the needs of infants for security and interaction. Suggest healthy sleep patterns and how they can be achieved (see Families Want to Know: Helping the Infant Sleep). Teach self-regulation skills so that the parents can help the child become quiet and calm. Health maintenance seeks to identify babies with disruptions in mental health status, often manifested by growth or interaction abnormalities. When the infant has disturbed sleep patterns, difficulty calming self when upset, or the parents do not interpret infant cues related to hunger or discomfort, the nurse plans interventions to help prevent further problems. An expected outcome for these activities is the reestablishment of expected growth and development, and age-appropriate interactions of the infant with others.

EVIDENCE-BASED PRACTICE

Infant Sleep

Problem

Many babies have limited sleeping periods during the night, and their night awakenings disturb parents' sleep. Parents may have busy days and be unable to nap for adequate sleep, and thus cannot perform at a safe and productive level during the day. In an effort to increase sleep, some parents may feed the infant frequently during the day, believing that if the baby has fed well, longer night sleep periods may occur.

Evidence

Infants with more than 11 feeds in 24 hours at 1 week of age were noted to be nearly three times more likely to have night awakenings than infants who had fewer feedings. A group of 316 newborns with more than 11 feedings daily and their families participated in a study and were randomly assigned to receive one of three interventions:

- Three-step behavioral program
- Educational booklet
- Helpline for sleeping problems

After 12 weeks, 82% of babies in the behavioral program slept through the night, compared with 61% for the other two interventions. The behavioral program taught parents to minimize light and social interac-

tion at night, avoid feeding or cuddling at night, and beginning at 3 weeks of age, delay feeding when the baby awoke at night (Nikolopoulou & St. James-Roberts, 2003).

In a similar study with 33 infants, two nurses taught parents of infants with disturbed sleep to gradually decrease their contact with the infants during night awakenings. Night sleep improved significantly at 1 week and at the 2-month follow-up. Infants in turn developed more self-soothing abilities (Skuladottir & Thome, 2003).

Implications

This evidence-based practice provides implications for nursing practice. Ask parents of young newborns to keep track of the number of daily feedings and nighttime awakenings of the infant. For infants with 11 or more feedings, teach parents about how to minimize stimulation and interaction at night, as previously described. Provide opportunities to review results at future health supervision visits.

Critical Thinking

What reasons might working parents have for responding eagerly and interacting with an infant who awakens at night? Do you think there are other reasons why babies awaken at night? What clues help you to decide if an infant sleep problem exists?

Relationships

The infant's social interactions both within and outside the family display enormous growth in the first year. The family is the primary site where the infant learns to interact with other people. Therefore, family dynamics must be examined during health supervision visits. Some factors in the parents' mental health directly affect the home atmosphere, and the baby's resulting health. Depression in parents or other family members is an important condition that can potentially influence the infant's health. Interactions with parents who are depressed will be altered; caretaking, both physical and emotional, can be impaired.

Another challenge to the mental health of families with depressed members is that of domestic violence, a situation in which parents or adult care providers commit violent acts toward one another. Child abuse or maltreatment may also occur in some families with infants. This problem is a serious issue that causes disturbed mental status in the baby. See Chapter 6 ∞ for a detailed description of child abuse and its effect on infants and older children. Suspected child abuse must be reported to legal authorities in order to protect children.

FAMILIES WANT TO KNOW

Helping the Infant Sleep

Helping an infant to self-regulate and be able to sleep for longer periods of time is often a stressful challenge for families. Parents need to have substantial sleep periods themselves in order to be refreshed and able to deal with daily life. When up several times during the night with a baby, parents may become irritable and fatigued. Question the family about the baby's sleep routine. The infant passes into light sleep several times at night and may awaken; self-regulation will assist in helping the infant get back to sleep. Suggestions helpful for the family may involve:

- Place the baby to sleep in a quiet and darkened room
- Have similar bedtime routines each night
- Provide a consistent transitional object, such as a favorite blanket, each night

- Put the baby to bed while still awake rather than after falling asleep nursing so he or she becomes accustomed to getting to sleep without nursing
- Do not try to awaken the baby in NREM (quiet) sleep
- Establish a regular sleep routine and time; routine may involve some cuddling and rocking time but should not be vigorous, stimulating play
- For the baby who has trouble going to sleep, remain in the room for a few minutes but do not establish eye contact; place a hand on the abdomen or chest or gently hold flailing arms and legs (Green & Palfrey, 2002; Jellinek, Patel, & Froehle, 2002; Mindell, 2003)

Table 8–8

ROUTINE IMMUNIZATIONS RECOMMENDED DURING INFANCY

Immunization	Age Recommended
Hepatitis B	After birth up to 2 months (#1) 1–4 months (#2) 6–18 months (#3)
Hepatitis A	12 months (#1) 18 months or at least 6 months after first dose (#2)
Diphtheria, tetanus, acellular pertussis	2, 4, and 6 months (three doses)
<i>Haemophilus Influenzae</i> type b	2, 4, and 6 months (three doses; third dose is not needed if PRP-OMP [Pedvax Hib or ComVax] are used for primary series)
Inactivated poliovirus	2, 4, and 6–18 months (three doses)
Pneumococcal	2, 4, and 6 months (three doses)
Influenza	Annually from 6 months of age
Rotavirus	2, 4, and 6 months (three doses)

The nurse's role related to infant social interactions in health supervision visits is to evaluate the infant's social skills, learn what parents have noticed about the baby's temperament and how it fits with their lives, and make suggestions for positive social development. Desired outcomes for the infant include establishment of close relationships with parents and other family members, a stimulating home environment that is responsive to the baby's temperament, and developmental progression in social interactions.

Disease Prevention Strategies

Infants are prone to many infectious diseases, especially once passive immunity from the mother wanes at about 6 months of age (see Chapters 17 and 18 ∞). Recommended immunizations are administered on schedule to provide the infant protection from some diseases (Table 8–8). Further details on immunizations can be found in Chapter 18. Instruct parents about upcoming immunizations and when the baby should be seen again. Be sure the parent understands the risks and benefits of each immunization. Answer questions truthfully and have resources on hand for interested parents such as brochures and videotapes.

During each health supervision visit, the nurse performs recommended screenings, and counsels the parents about why such screenings are important (Table 8–9). Vision and hearing screening are performed at each healthcare encounter. Screening for anemia and lead poisoning are added at particular times or with certain groups. Families with a history of genetic diseases such as sickle cell disease or cystic fibrosis may choose to have infant screening so that supportive care could begin early if the child has the disease. Parents benefit from teaching about common diseases and conditions of young children and measures for their prevention. Ask about environment tobacco smoke (ETS) and encourage smoking parents to quit. Teach parents to put babies to sleep on their backs to assist in lowering the chance of Sudden Infant Death Syndrome. Be sure parents have a phone number to call when they have questions about conditions or whether the baby should be seen by the healthcare provider. Desired outcomes for disease prevention strategies include adequate management of health problems, integration of immunization and other preventive measures into infant care, and family understanding of preventive measures recommended for infants.

Injury Prevention Strategies

During the first year of life, injury becomes an increasingly common cause of mortality. (See statistics on mortality in children in Chapter 1 ∞.) Strategies must be included in each health supervision visit to lower the risk of injury. Nurses should never assume that

NURSING ALERT

Instruct parents to contact a healthcare provider if the infant has:

- Rectal temperature $\geq 100.4^{\circ}\text{F}$ (38.0°C)
- Seizure
- Skin rash, purplish spots, petechiae
- Change in activity or behavior that makes the parent uncomfortable
- Unusual irritability, lethargy
- Failure to eat
- Vomiting
- Diarrhea
- Dehydration
- Cough

Data from Green and Palfrey, 2002.

Table 8–9

SCREENING DURING HEALTH PROMOTION AND HEALTH MAINTENANCE VISITS

Age	Recommended Screening Tests
1 month	<ul style="list-style-type: none"> • Vision (follow objects, red reflex) • Hearing (response to sound; screening by machine if not completed in the hospital) • Physical examination with special attention to skin problems, hip dysplasia, foot position and range of motion, mouth, abdomen, cardiac abnormality, tearing of eyes, neurological (including child abuse), anthropometric measurements • Developmental milestones • Dietary screening and stool/urine pattern assessment • Review immunization record
2 months	<ul style="list-style-type: none"> • As previously noted
4 months	<ul style="list-style-type: none"> • As previously noted • Vision (add cover–uncover test for strabismus)
6 months	<ul style="list-style-type: none"> • As previously noted • Vision (add ability to follow object bilaterally, corneal light reflex) • Physical examination with special attention to muscle tone, extremities, appearance of first teeth, tympanic membrane, testicle descent for males
9 months	<ul style="list-style-type: none"> • As previously noted • Lead exposure and levels if appropriate • Anemia • Physical examination with special attention to symmetry of movement
12 months	<ul style="list-style-type: none"> • As previously noted • Tuberculosis test if indicated • Physical examination with special attention to condition of teeth

Adapted from Green, M., & Palfrey, J. S. (Eds.). (2002). *Bright futures: Guidelines for health supervision of infants, children, and adolescents*, (2nd ed.). Arlington, VA: National Center for Education in Maternal and Child Health.

parents understand how to insert an infant car seat (Figure 8–9 ►) correctly or what types of toys and foods can lead to choking. Know the most common hazards at each age and teach parents methods of avoiding them (see Tables 8–10 and 8–11).

Begin the conversation by asking parents what safety hazards they are aware of in the child's environment. Use this information as the starting point for discussion. Give positive feedback for their awareness of hazards and measures they have taken to prevent them. Consider using a home assessment survey that assists parents in identifying hazards that may be present in their homes. (See Chapter 2 for a description of the Home Observation for Measurement of the Environment.) When infants visit friends, relatives, or neighbors, they may be exposed to other hazardous situations. Grandparents may not have a home that is “babyproofed” and the infant could have access to electrical cords, machinery, medicines in cupboards or purses, or other hazards. Help the parents to evaluate the childcare home or center. Focus on car safety since this is a frequent cause of injury for infants. Provide brochures and other types of information about recommendations. Refer every family for a car seat examination at a certified examination center. Provide resources for car seats if the family is not able to afford one. Discuss other possible safety hazards such as extensions on the parent bicycle and use of baby strollers in areas where cars are present.



Figure 8–9 ► A young mother fastens her infant securely into a backward-facing car seat. Her installation has been evaluated by the local car seat inspector and she has been instructed in proper usage. Locate inspection stations in your community and use them to refer families to verify car seat placement.

NURSING MANAGEMENT

Nursing Assessment and Diagnosis

The nurse working in clinics, offices, and other settings that offer primary care for infants should be skillful in assessing health promotion and health maintenance. The infant's growth, developmental level, general physical health, and mental/social health are assessed. Family interactions and other settings where the infant spends time are

Table 8–10	INJURY PREVENTION IN INFANCY	
Hazard	Development Characteristics	Preventive Measures
Falls	Mobility increases in first year of life, progressing from squirming movements to crawling, rolling, and standing.	Do not leave infant unsecured in infant seat, even in newborn period. Do not place on high surfaces such as tables or beds unless holding child. (1) Once mobile by crawling, keep doors to stairways closed or use gates. Standing walkers have led to many injuries and are not recommended.
Burns	Infant is dependent on caretakers for environmental control. The second half of the first year is marked by crawling and increased mobility. Objects are explored by touching and placing in mouth.	Check temperature of bath water and food/liquids for drinking. Cover electrical outlets. Supervise infant so that play with electrical cords cannot occur.
Motor vehicle crashes	Infant is dependent on caretakers for placement in car. On impact with another motor vehicle, an infant held on a lap acts as a torpedo.	Use only approved restraint systems (according to federal Motor Vehicle Safety Standards). The seat must be used for every trip, even if very short. The seat must be properly buckled to the car's lap belt system. (2)
Drowning	Infant cannot swim and is unable to lift head.	Never leave infant alone in a bath of even 2.5 cm (1 in.) of water. Supervise when in water even when a life preserver is worn. Flotation devices such as arm inflatables are not certified life preservers.
Poisoning	Infant is dependent on caretakers to keep harmful substances out of reach.	Keep medicines out of reach. Teach proper dosage and administration of medicines to parents. Cleaning products and other harmful substances should not be stored where the infant can reach them. Remove plants from play areas. Have poison control center number by telephone.
Choking	The second half of infancy is marked by exploratory reaching and mouthing objects. Infant explores objects by placing them in the mouth. (3)	Avoid foods that commonly cause choking. Keep small toys away from infants, especially toys labeled "not intended for use by those under 3 years."
Suffocation	Young infant has minimal head control and may be unable to move if vomiting or having difficulty breathing.	Position infant on back for sleep. (4) Do not place pillows, stuffed toys, or other objects near head. Do not use plastic in crib. Avoid latex balloons.
Strangulation	Infant is able to get head into railings or crib slats but cannot remove it.	Be sure older cribs have slats spaced 6 cm (2½ in.) or less apart. The mattress must fit tightly against the crib rails.



(1) Never leave infant unsecured or on high surface.



(2) Always use approved restraint system. Place infant in rear-facing seat in backseat of car.



(3) Explores objects with mouth.



(4) Place infant on back for sleeping, keep toys clear.

Table 8–11 INJURY PREVENTION TOPICS BY AGE

Age	Injury Prevention Teaching Topics
1 month	<ul style="list-style-type: none"> • Use infant car safety seat • Put baby to sleep on back • Avoid loose bedding and toys in crib • Avoid tobacco use in the environment • Provide adult supervision of the baby at all times by trusted individuals • Test bath water temperature and never leave baby alone in bath • Never place baby on high object such as counter, table, or bed; always keep one hand on the baby during activities like diaper changes to prevent falling • Wash hands correctly and often • Avoid contact with persons with communicable diseases • Have smoke alarms and avoid fire hazards • Learn infant CPR and airway obstruction removal • Never shake the baby • Have plans for emergency care
2 months	<ul style="list-style-type: none"> • As previously noted • Use only recommended playpens or cribs and keep sides up • Avoid moldy environments • Keep baby toys cleaned • Avoid direct sunlight for the baby • Keep sharp and small objects out of the baby's environment • Keep hot water heater lower than 120°F • Review emergency plan with all care providers
4 months	<ul style="list-style-type: none"> • As previously noted • Get all poisonous substances out of the baby's view and reach; install locks to keep them inaccessible • Do not use latex balloons or plastic bags near the baby
6 months	<ul style="list-style-type: none"> • As previously noted • If an infant-only car seat was used, switch to a rear-facing convertible safety seat (intended for babies up to 40 pounds) when baby is 20 to 30 pounds or 26 inches • Empty containers of water immediately after use; be sure pools or other bodies of water are locked and not accessible to baby • Use sunscreen, hat, and long sleeves when baby is in the sun • Keep heavy and sharp objects out of reach; check that all poisons are locked away including in homes visited; keep pet food and cosmetics out of reach • Do not drink hot liquids or eat soup while holding the baby • Have poison control number by phones and programmed into cell phones • Be alert for dangers of hot curling irons and other appliances • Have electrical cords out of reach and not hanging down • Have home and environment checked for lead hazards • Lower infant crib mattress if still in upper position • Install gates and guards on stairs and windows • Never use an infant walker
9 months	<ul style="list-style-type: none"> • As previously noted • Crawl on the floor and look for hazards at baby's eye level • Pad sharp corners on tables and other furniture • Watch for tables, chairs, and other devices the baby may use for climbing to unsafe places
12 months	<ul style="list-style-type: none"> • As previously noted • Change to forward-facing car safety seat if baby is at least 20 pounds; install correctly and have installation checked; place in back seat and never in front seat with a passenger air bag • Start teaching the child to wash hands frequently, showing how • Provide own personal items such as clothing and blankets to childcare providers; wash often • Change batteries in home smoke alarms and check system • Turn handles to back of stove; use back rather than front burners; watch for hot liquids • Check care provider setting for safety hazards • Remember that responsible adults should always supervise your infant, not other children • Peruse home once again for hazards now that the child is more active, climbing, and walking

Adapted from Green, M., & Palfrey, J. S. (Eds.). (2002). *Bright futures: Guidelines for health supervision of infants, children, and adolescents* (2nd ed.). Arlington, VA: National Center for Education in Maternal and Child Health.

evaluated for risks and protective factors that influence the child's development. Assess the health of siblings and patterns of integrating the infant into the rest of the family. Particular attention is directed at assessment of risk for diseases and injuries. The data-gathering phase provides parents with the opportunity to ask questions and relay concerns. Further assessment may need to be directed at these areas.

Based on the assessment data, the nurse establishes nursing diagnoses that become the basis for nursing interventions. Both areas of strength and need are included; often the family strengths can be used to further promote health. Some possible nursing diagnoses established during a health supervision visit of an infant might include:

- Effective Breast-Feeding related to the mother's confidence and knowledge
- Interrupted Breast-Feeding related to the mother's resumption of employment outside the home
- Compromised Family Coping related to recent role changes
- Risk for Altered Parent/Child Attachment related to anxiety associated with parenting role
- Sleep Pattern Disturbance (Infant) related to frequently changing sleep routines and cycles
- Impaired Skin Integrity (Infant) related to developmental factors
- Risk for Infection (Infant) related to inadequate acquired immunity
- Risk for Injury (Infant) related to design of environment
- Risk for Altered Growth and Development related to parental substance abuse

Planning and Implementation

The nurse plays a vital role in successful health promotion and health maintenance activities. Explain to parents the procedures being performed and their purpose. Encourage them to ask questions and share their perceptions of the infant's personality, development, and other traits. This will enhance their understanding that health care involves a partnership between them and the care providers. It will lead to trust that promotes their ability to honestly share concerns. Recognize that the first year of the baby's life is a key time for establishing a trusting relationship with health professionals.

Recognize the importance of data provided by simple assessments such as length and weight. Analyze all findings to learn if the child is developing as expected. Much of the visit is spent teaching parents about topics such as safety measures, providing anticipatory guidance related to development, assisting with integration of the new baby into the family, and relaying resources for support of the family in the community, Internet, or other areas. Parenting classes, childcare facilities, and family planning resources are examples of common parental needs. Perform recommended physical and developmental assessment, administer screening tests, and give immunizations. Be sure parents understand the need for tests and treatments, and relay the results of tests to them.

Nurses who work in hospitals, emergency services, and other facilities also are an important link in health supervision. Ask where and how often the child is seen for care. Check immunization schedules to be sure they are up-to-date; administer needed vaccines (Figure 8–10 ►). When the child is not being regularly seen, find out if the family does not understand the significance of these visits or lacks the resources to obtain them. Refer the family to resources as needed so that they can identify a pediatric healthcare home. Some agencies that provide health supervision are equipped to perform home visits on a regular basis or in case of special need. When nurses make regular home visits to families with many risk factors, health outcomes are improved (Paul, Phillips, Widom, & Hollenbeak, 2004). Seeing the family in the natural setting enables the nurse to tailor interventions to the specific situation. Nutrition, safety, and other teaching is more effective when it matches the family needs. For example, showing how to set up a stimulating environment with safe materials, even if toys are limited, is an effective nursing strategy. Ensure that home visits are performed whenever appropriate and available, either through the pediatric healthcare home or other community agency.

Before the family leaves the facility, be sure they have the next appointment scheduled. Summarize the content of the present visit, emphasizing the family's



A



B

Figure 8-10 ➤ The nurse positions the baby on the edge of the examination table to isolate the vastus lateralis muscle used for immunization administration. A, The mother holds the baby's arms out of reach. B, After the immunization the parents comfort the infant and are reassured that all is well. Instructions are given for managing side effects and scheduling the next visit.

strengths and the baby's newly acquired developmental skills. Sensitively list any areas that require work in the coming weeks, such as "babyproofing" the home or encouraging the infant to reach for objects. Provide a journal or notebook in which the parents can record the infant's development and write down questions to ask in future visits. Suggest possible topics for the parents to learn about and provide books, brochures, and other printed material.

Evaluation

Expected outcomes of nursing care for the infant and family in health promotion and health maintenance include:

- Parents state common safety hazards at the child's present and upcoming ages.
- The infant demonstrates normal patterns of growth and progression in developmental milestones.
- The infant remains free of disease and injury.
- The infant is well adjusted, showing positive response to the environment and interactions with significant others.



CRITICAL THINKING IN ACTION

Recall 22-year-old Shannon, who is described at the beginning of the chapter. She is a single mother with two daughters, 5-year-old Denise and 10-day-old Rhonda. Shannon lives with her boyfriend, who is the father of the new baby. Rhonda was born at 37 weeks' gestation, weighed 2800 g (6 lb, 3 oz) at birth, required phototherapy for newborn jaundice, and had initial difficulty breast-feeding. She was discharged from the nursery at 5 days of age.

1. What questions would the pediatric nurse and lactation consultant ask Shannon to assess the adequacy of breast-feeding at this time? What assessments of the newborn will provide clues about the adequacy of intake?

2. Consult Chapter 5 for a description of newborn reflexes. Plan a thorough newborn assessment that includes the reflexes. Why is it important to complete this neurological testing on baby Rhonda?
3. Plan a teaching session for Shannon that describes the sleep patterns of newborns. Integrate suggestions to enable Rhonda and her boyfriend to obtain adequate rest.
4. Denise is Rhonda's 5-year-old sibling. What questions will you ask Shannon about Denise's adjustment to a new sibling?



Refer to Companion Website for answers.

EXPLORE MediaLink


<http://www.prenhall.com/ball>

screen grab goes here

Resources for this chapter can be found on the Prentice Hall Nursing MediaLink DVD-ROM accompanying this textbook, and on the Companion Website at <http://www.prenhall.com/ball>.

DVD-ROM

Audio Glossary
NCLEX-RN® Review
Videos
 Helping the Infant Sleep

COMPANION WEBSITE

Audio Glossary
NCLEX-RN® Review
Case Study: Calculate Daily Formula Requirements
MediaLink Applications
 Develop an Agency Plan: Newborn Abduction Prevention
 Plot Weight and Measurement to Assess Size
WebLinks



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