Assessing Children’s Health

**NAEYC Standards Chapter Links**

- #1 a and b: Promoting child development and learning
- #2 a, b, and c: Building family and community relationships
- #3 a, b, c, and d: Observing, documenting, and assessing to support young children and families
- #4 a, b, and c: Using developmentally effective approaches to connect with children and families
- #5 b: Using content knowledge to build meaningful curriculum
- #6 b: Becoming a professional

**Learning Objectives**

*After studying this chapter, you should be able to:*

- Describe how teachers can use information in children’s health records to improve learning.
- Identify and describe five screening procedures that can be used to assess children’s health.
- Name and discuss three vision impairments.
- Explain why early detection of hearing disorders is important in terms of children’s development.
- Discuss why speech assessments should always include a hearing screening.
- Describe two methods used to evaluate children’s dietary status.

Teachers understand that health problems can interfere with a child’s ability to learn and that early detection improves the success of many interventions. Several screening procedures are available for identifying children who may require additional evaluation. Information collected in an objective manner and from a combination of screening procedures yields: (1) reliable data for health promotion, (2) clues that can aid in the early detection of conditions that affect children’s growth and development, and (3) an opportunity to modify programs and environments to meet a child’s unique needs.
Health Records

Careful recordkeeping is not always a priority in many early childhood programs. However, when information in children's files is current and sufficiently detailed, it can be used to promote their well-being (Table 3–1). The types of records schools are required to maintain are usually mandated by state departments of education. Child care licensing divisions in each state issue similar regulations for licensed centers and home-based programs. However, because these regulations typically reflect only minimal standards, programs may want to consider keeping additional forms of documentation. Unlicensed programs are not obligated to maintain any records.

Forms and records should be designed to gather information that is consistent with a program's goals and philosophy and that protects the legal rights of the children and staff. This information serves many purposes, including:

- determining children's health status
- identifying patterns and potential problem areas
- developing intervention programs
- evaluating the outcome of special services, e.g., speech therapy, occupational therapy
- coordinating services
- making referrals
- following a child's progress
- research

Health records often include private information about children and their families. Thus, only information that is needed to work effectively with a child should be shared with teachers and staff. Personal details about a child or family should remain confidential and must never serve as topics of conversation outside of the classroom. No portion of a child's health record should ever be released to another agency, school, health professional, or clinician until written permission has been obtained from the child's parent or legal guardian. A special release form, such as the one shown in Figure 3–1, can be used for this purpose. The form should clearly indicate the nature of information to be released and the agency or person to whom it is to be sent. It must also be dated and signed by the parent or legal guardian, and a copy retained in the child's folder.

Recordkeeping is most efficient when one person is responsible for maintaining all health-related records. However, input from all members of the teaching team is important for determining

Table 3–1  Children's Health Records

<table>
<thead>
<tr>
<th>Children’s permanent health records should include:</th>
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<tbody>
<tr>
<td>• child/family health history</td>
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<tr>
<td>• copy of a recent medical assessment (physical examination)</td>
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<tr>
<td>• immunization records</td>
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<tr>
<td>• emergency contact information</td>
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<tr>
<td>• record of dental examinations</td>
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<tr>
<td>• attendance data</td>
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<tr>
<td>• school-related injuries</td>
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<tr>
<td>• documentation of family conferences concerning the child’s</td>
</tr>
<tr>
<td>health</td>
</tr>
<tr>
<td>• screening results, e.g., vision, hearing, speech, developmental</td>
</tr>
<tr>
<td>• medications administered while the child is at school</td>
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</table>

intervention – practices or procedures implemented to modify or change a specific behavior or condition.

referrals – directing an individual to other sources, usually for additional evaluation or treatment.
Child Health Histories

Health histories include information about children’s backgrounds, past medical conditions, as well as current developmental status and health problems. Questions about family history are generally included to provide a better understanding of the child’s strengths and special needs. Families should complete the health history form at the time of enrollment and update it annually to reflect any changes.

The nature of information requested on health history forms varies from program to program. Unless a standardized form is required by a licensing agency or school district, programs may wish to develop their own format. Sample forms can often be obtained from other programs or state
agencies and modified to meet a program’s specific needs. Health history questionnaires should be
designed to gather basic information about:

- circumstances related to the child’s birth
- family structure, such as siblings and their ages, family members, predominant language
  spoken, and legal custody issues
- major developmental milestones
- previous injuries, illnesses, surgeries, or hospitalizations
- daily habits, such as toileting, eating habits, and napping
- family concerns about the child, such as behavior problems, social development, and speech
  delays
- any special health conditions, such as allergies, asthma, seizures, diabetes, vision disorders,
  hearing loss, and medications

Information included in a health history questionnaire contributes to a better understanding
of each child’s uniqueness, including past health events and potential health risks. It can also be
helpful for assessing a child’s current state of health and aid teachers in establishing appropriate
goals and expectations. Teachers can also use this information for modifying children’s environ-
ments and activities to accommodate any special needs, such as dietary restrictions or the use of a
wheelchair. However, caution must be exercised not to set expectation levels unnecessarily low for
children based on this information alone. A child’s potential for learning must never be discounted
unless an impairment has been confirmed and is known to restrict performance. Lowering goals
and expectations may otherwise limit what a child is willing to attempt, for often children will
achieve only what is expected and may lack the incentive to progress or work to their full potential.

Child health histories also provide teachers with insight into the type of medical supervision a
child receives. This information may reflect the value a family places on preventive health care and
can be useful when making future referrals.

**Medical and Dental Examinations**

Most states require children to have a complete health assessment and current immunizations
before they can attend school or an early childhood program. Some states require an annual exami-
nation, while others request it only at the time of admission. Health care providers recommend that
infants continue to have well-child checkups every 2 to 3 months. Families are encouraged to have
their 2- and 3-year-olds examined by a physician every 6 months; children 4 and older should be
examined annually. More frequent medical supervision may be necessary if children have existing
health problems or new conditions develop.

Current information is obtained from the family and child during the course of the health
examination. Families may also be asked to complete a brief developmental questionnaire to better
help medical personnel assess all aspects of the child’s health. The child’s immunization record
is reviewed and additional doses are administered as indicated. Body parts and systems, such as
the heart, lungs, eyes, ears, **skeletal** and **neurological** development, and gastrointestinal function
(stomach and intestines) are carefully examined. Head circumference is routinely measured on all
infants and children until 3 years of age to be certain that head size continues to increase at an
acceptable rate. Height, weight, and blood pressure readings (after age 3) are also recorded and
compared to prior measurements to determine if a child’s growth is progressing satisfactorily.
Growth failure, especially in height, may be an indication of other health problems that need to be
investigated. Specialized tests, such as blood tests for anemia, sickle cell disease, or lead poisoning,
may be ordered to identify or rule out any of these conditions. Urinalysis, tuberculin testing, vision

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**skeletal** – pertaining to the bony framework that supports the body.

**neurological** – pertaining to the nervous system, which consists of the nerves, brain, and spinal column.
Although dental examinations are seldom required for enrollment in early childhood programs, their benefits are unquestionable. Families are encouraged to arrange routine dental checks and preventive care for children, including visual inspection of the teeth, cleaning, and fluoride applications every 6 to 12 months.

**Screening Procedures**

Screening tests are also an essential component of the comprehensive health assessment process. They support the preventive care philosophy through the early detection of health problems and impairments that could otherwise interfere with a child’s ability to learn.

Most screening procedures are relatively quick, inexpensive, and efficient to administer to groups of young children. Some tests can be conducted by teachers, while others require the services of professional clinicians. Screening tests are designed only to identify children who may have a condition that requires professional evaluation, never to diagnose or confirm a specific impairment. Test results simply provide additional information about a child that can be used in combination with family and teacher observations, assessments of growth and development, and the results of daily health checks.

**Measurements of Height and Weight**

The first 5 years of life are an important period of rapid growth. Increases in height and weight are most dramatic during infancy, and continue at a slower, but steady, rate throughout the preschool and school-age years (Allen & Marotz, 2010). Height measurements are a reliable indicator of a child’s general health and nutritional status. Weight often fluctuates in response to recent illness, infection, emotional stress, or overeating and, thus, is not considered a dependable reflection of long-term health.

Teachers and families must understand that a child’s growth potential is ultimately governed by genetics. This is especially important to remember when working with children from different cultures and ethnic backgrounds. The Centers for Disease Control & Prevention (CDC) have updated their standard growth charts to more accurately represent the diverse child population in the United States, although they still may not be appropriate for all ethnicities. The World Health Organization (WHO) also released international Child Growth Standards for children birth to 19 years (WHO, 2006) (www.who.int/childgrowth/en). Their charts include developmental milestones (Windows of Achievement) based on an extensive study of children, birth to age 5, from around the world and may more accurately reflect the growth and developmental patterns typical of today’s children.

Ideally, children’s height and weight should be measured at 4- to 6-month intervals and recorded in their permanent health file. A single measurement is unlikely to identify the child who is experiencing a growth disturbance related to physical illness, stress, or an eating disorder. Rather, what is most important is the pattern of changes that occur over a period of time. Measurements recorded on standardized growth charts allow comparisons to be made with previous data and can be useful for early identification of growth concerns.
Chapter 3  Assessing Children’s Health

Reflective Thoughts

Children enjoy being weighed and measured. Monitoring their growth is important for ensuring good health. Teachers can use this activity for periodic assessment of children’s well-being and to reinforce their learning of sound health practices. However, ethnic differences must be taken into consideration when using standardized tables (available on the premium website for this text) to evaluate children’s height and weight measurements. Data in these tables are based on middle-class, Caucasian children and do not always account for ethnic variations in body structure. How would you determine if an Asian or Hispanic child’s growth was appropriate for his or her age? What effects does a child’s nutritional status have on growth? What classroom activities (science, art, language, motor) might you plan to reinforce children’s understanding of a healthy lifestyle? In what ways can teachers include children’s families in health education activities? What Internet sites provide reliable health and nutrition information for young children?

for determining if a child’s growth is progressing satisfactorily. Growth charts are available from the Centers for Disease Control & Prevention (CDC) (http://www.cdc.gov/growthcharts) or they can be downloaded from the premium website for this book.

The Body Mass Index (BMI) is a relatively new screening tool that provides a height-for-weight ratio. It is appropriate to use with children 2 years and older to determine their risk of being underweight, healthy weight, overweight, or obese. Gender-specific charts for plotting children’s BMI-for-age can be accessed at www.cdc.gov/parents/children or downloaded from the premium website for this book.

Sensory Development

The sensory system affects all parameters of a child’s growth and development. Five special senses comprise the sensory system: vision, hearing, smell, touch, and taste. Children depend on these senses to receive, interpret, process, and respond to information in their environment. Optimal functioning of the sensory system is, therefore, of critical importance, especially during the early stages of growth and development. Of the five senses, vision and hearing are most critical for young children, since much of their early learning depends on what they are able to see and hear (Pittman, Vincent, & Carter, 2009).

Vision Screening

It is often falsely assumed that young children naturally have perfect vision. However, approximately one in twenty preschoolers and one in four school-age children has a vision impairment that interferes with learning (Prevent Blindness America, 2006). Some conditions, such as cataracts or blindness, may be present at birth. Others can develop as the result of an injury or infectious illness, such as meningitis. Vision problems are also more common in children who have other disabilities, such as cerebral palsy, Down syndrome, or fetal alcohol syndrome (FAS) (Bruce et al., 2009). For

underweight – a BMI of less than 18.5.
overweight – a BMI greater than 25.
obese – a BMI over 30.
Often it is the teacher who first notices signs of a child’s vision problem.

this reason, an infant’s eyes should be examined for abnormalities and muscle imbalance during routine well-child checkups to reduce permanent vision loss. It is also recommended that all children have a professional eye evaluation performed by an ophthalmologist or optometrist before starting kindergarten. Early detection of vision impairments improves the success of medical treatments and a child’s readiness for school (Ethan & Basch, 2008).

Often, it is the teacher who first notices clues in a child’s behavior that suggest a vision disorder. Young children are seldom aware that they are not seeing well, especially if their vision has not been normal in the past. However, vision problems may become more apparent during the school years when children are required to complete academic work with greater accuracy and detail. A combination of teacher observations and screening test results may reveal a vision problem and the need to refer a child for professional evaluation.

Special attention should be paid to children who have other known physical disabilities or who are repeatedly unsuccessful in achieving tasks that depend on visual cues (Allen & Cowdery, 2009). Delays in identifying vision problems can seriously affect the learning process and reduce the chance for successful treatment. Undiagnosed vision problems can also lead to children being inappropriately labeled as learning disabled or mentally retarded when, in fact, they simply cannot see well enough to learn (Allen & Marotz, 2010). The following case study illustrates the point:

In many ways, Tina is a typical 4-year-old, although the teachers have been puzzled by some of her recent behaviors. Tina seems easily frustrated and unable to complete many of the pre-academic tasks that her peers enjoy, such as puzzles, tracing, threading beads, and simple object labeling. She trips over toys, runs into children, and is often reluctant to join her classmates in outdoor games. Tina’s teachers are concerned that she may have a learning disability and have begun developmental testing. They also arranged with the school health consultant to have Tina’s vision checked and were surprised to learn that it was only 20/100. Tina’s mother was encouraged to make an appointment with an eye specialist and, after further testing, it was determined that Tina needed corrective glasses. The teachers have been amazed by the changes Tina’s improved ability to see has made in her behavior, social interaction, and academic progress.

Methods of Assessment

Early detection of visual impairments requires observing children carefully for specific behavioral indicators (Tables 3–2 and 3–3). Any noted concerns should be discussed with a child’s family and may confirm a teacher’s suspicions. Some vision problems are more difficult to detect because there are no visible signs or symptoms. Also, vision problems are not outgrown, nor do they usually improve without treatment. For these reasons, children's vision should be closely monitored to ensure proper development.

**ophthalmologist** – a physician who specializes in diseases and abnormalities of the eye.

**optometrist** – a specialist (nonphysician) trained to examine eyes and prescribe glasses and eye exercises.
An infant’s vision can be tested informally by holding an object, such as a rattle, 10 to 12 inches away and observing the infant’s ability to focus on (fixation) and track (follow) the object as it is moved in a 180-degree arc around the child’s head. The infant’s eyes should also be observed for any uncoordinated movements as the object is brought closer (convergence) and farther away from the face. In addition, the blink reflex (sweep hand quickly in front of the eyes; observe for blinking), and pupil response (shine a penlight, held 4 to 6 inches away, into the eye; pupil should become smaller) should also be checked. A child showing abnormal responses should be referred for professional evaluation.

Teachers and volunteers can be trained by health professionals to administer many of the standardized visual acuity tests (Table 3–4) (Proctor, 2009). Printable versions of the Eye Tests for Children (HOTV charts for near and distance vision) are also available on the Prevent Blindness America website (www.preventblindness.org) or by contacting the organization’s headquarters (211 West Wacker Drive, Chicago, IL, 60606). Children’s eyes should also be checked for:

- convergence
- depth perception (Titmus Fly test)
- binocular fusion (Worth 4-Dot test; Random Dot E)
- deviations in pupil position (Test by holding a penlight 12 inches from the child’s face, direct light at the bridge of the nose; the light reflection should appear in the same position on both pupils; any discrepancy requires professional evaluation.)

Photoscreening is a relatively new screening tool that is increasingly being used with young children, especially those who are preverbal, nonverbal, or have developmental delays or disabilities that would make it difficult for them to complete conventional screening procedures (Kirk et al., 2008). A special camera records a small beam of light as it is reflected on the eyeball, and is especially useful for the early detection of amblyopia and strabismus. Although it is an efficient and effective screening technology, the equipment is relatively expensive and the test requires special training to administer.

Table 3–2 Early Signs of Visual Abnormalities in Infants and Toddlers

<table>
<thead>
<tr>
<th>Observe the infant closely for:</th>
</tr>
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<tbody>
<tr>
<td>• roving eye movements that are suggestive of blindness</td>
</tr>
<tr>
<td>• jerky or fluttering eye movements</td>
</tr>
<tr>
<td>• eyes that wander in opposite directions or are crossed (after 3 months)</td>
</tr>
<tr>
<td>• inability to focus or follow a moving object (after 3 months)</td>
</tr>
<tr>
<td>• pupil of one eye larger than the other</td>
</tr>
<tr>
<td>• absence of a blink reflex</td>
</tr>
<tr>
<td>• drooping of one or both lids</td>
</tr>
<tr>
<td>• cloudiness on the eyeball</td>
</tr>
<tr>
<td>• chronic tearing</td>
</tr>
</tbody>
</table>
It is important that children understand the instructions and expected method of response before any screening test is administered or the results may be invalid. Children who fail an initial screening should be retested within 2 weeks. If a second screening is failed, testing results should be shared with the child’s family and a referral made to a professional eye specialist for a comprehensive assessment.

Early detection and successful treatment of vision impairments in children has been targeted as a major goal in the Healthy People 2020 initiative. Efforts to increase public awareness and to reach children in medically underserved areas are aimed at combating unnecessary and irreversible vision loss. Information concerning symptoms of visual impairments, testing procedures, and treatments is available on many professional organization websites, including Prevent Blindness America (http://www.preventblindness.org), American Academy of Ophthalmology (http://www.aao.org), American Academy of Pediatrics (http://www.aap.org), and the American Association of Pediatric Ophthalmology and Strabismus (http://www.aapos.org).

### Common Disorders

Vision screening programs are designed to detect three common disorders in young children, including:

- amblyopia
- strabismus
- myopia
Amblyopia, or "lazy eye," affects approximately 2 percent of all children younger than 10 years. Children born to mothers who smoke seem to be at higher risk for developing this and other vision disorders (Ip et al., 2008). Amblyopia is caused by a muscle imbalance or childhood cataracts that result in blurred or double vision. The child’s brain is confused by this distortion and begins to recognize only images received from the stronger eye while ignoring (suppressing) those from the weaker or “lazy” eye. Sight is gradually lost in the weaker eye as a result of disuse. This also causes a loss of depth perception, which requires comparable sight in both eyes.

Early identification and treatment of amblyopia is critical for preventing a permanent loss of vision. Because the child’s eyes appear to be normal, amblyopia is often overlooked and treatment delayed. Seldom are children aware that anything is wrong with their vision so they are unlikely to tell an adult. For these reasons, it is important that young children have periodic routine screenings and comprehensive eye examinations. If amblyopia is diagnosed before the age of 6 or 7, a significant portion of the child’s eyesight can often be restored. Even greater improvements may be achieved when this condition is diagnosed and treated before the age of 2 years (National Eye Institute, 2009). However, new research suggests that children as old as 12 may still be able to regain some lost sight (O’Connor, 2009).

Several methods are used to treat amblyopia. One of the more common treatments involves patching the child’s stronger (unaffected) eye for several hours each day until muscles in the weaker (affected eye) gradually become stronger. Other treatment methods include corrective glasses, eye drops, special eye exercises, and surgery. Teachers may be asked to administer treatments while children are in school. They must understand the importance of maintaining a child’s treatment schedule and be supportive when children resist or are embarrassed by having to wear special glasses or a patch. Added safety precautions, such as clearing obstacles from pathways and guiding children through unfamiliar spaces, may need to be taken to avoid injury during treatments. Teachers can also use these opportunities to help children become more respectful and accepting of individuals with special needs.

Strabismus, commonly referred to as crossed eyes, is another vision impairment that affects approximately 3 to 5 percent of young children (Optometrists Network, 2009). Strabismus causes an observable misalignment of the child’s eyes (for example, both eyes may turn inward or, one eye may turn inward or outward) that occurs intermittently or consistently. Because children’s eyes are not able to work together as a unit, they may experience symptoms similar to those of amblyopia, including double or blurred vision, images from the weaker eye being ignored by the brain, and gradual loss of vision.

amblyopia – a condition of the eye commonly referred to as “lazy eye”; vision gradually becomes blurred or distorted due to unequal balance of the eye muscles. There are no observable abnormalities of the eyes when a child has amblyopia.

strabismus – a condition of the eyes in which one or both eyes appear to be turned inward (crossed) or outward (walleye).
Early recognition and treatment of strabismus is essential for restoring normal vision. Today, even infants are being treated aggressively for this condition. Although uncoordinated eye movements are common in very young infants, their eyes should begin to move together as a unit by 4 months of age. Methods used to treat strabismus include surgical correction, patching of the unaffected eye, and eye exercises.

**Myopia**, or nearsightedness, can affect young children, but is more common in school-aged children. A child who is nearsighted sees near objects clearly, but has poor distant vision. This condition is especially problematic for young children because they tend to move about quickly and engage in play that involves running, jumping, and climbing. As a result, children who have myopia may appear clumsy, and repeatedly stumble or run into objects. Squinting is also common as children attempt to bring distant objects into focus. Teachers can be instrumental in noting these behaviors and referring children for comprehensive screening.

Farsightedness, or **hyperopia**, is thought to be a normal occurrence in children under the age of 5, and is caused by a shortness of the eyeball (Lempert, 2008). This condition often corrects itself as children mature and the eyeball enlarges and changes shape. Children who are farsighted see distant objects clearly but have difficulty focusing on near objects. Older children may struggle academically, be poor readers, have a short attention span, and complain of headaches, tired eyes, or blurred vision following periods of close work. Because hyperopia can be difficult to detect with most routinely administered screening procedures, teacher and parent observations may provide the best initial clues to this disorder. A child who exhibits signs of hyperopia should be referred to a professional eye specialist for evaluation.

Color blindness affects a small percentage of children and is generally limited to males. Females are carriers of this hereditary defect but are rarely affected. The most common form of color blindness involves the inability to discriminate between red and green. Testing young children for color blindness is difficult and often omitted because learning is not seriously affected and there is no corrective treatment.

**Management**

When a child is suspected of having vision problems, families should be counseled and encouraged to arrange for professional screening (Ethan & Basch, 2008). Teachers can assist families in locating services and reinforce the importance of following through with any recommendations. Arrangements for vision testing can often be made through pediatricians’ offices, “well-child” clinics, public

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**Reflective Thoughts**

Children who experience vision problems may require extra care and direction in the classroom (Shaw & Trief, 2009; Li, 2004). They may not be able to complete tasks as quickly or precisely as other children. Some children have difficulty tolerating treatments, such as patching or wearing modified glasses for amblyopia, because their visual field is temporarily distorted. Daily application and removal of adhesive patches can cause skin irritation and may attract peer attention and curiosity. How can teachers turn this opportunity into a positive learning experience for young children? What strategies can teachers use in the classroom to help a child with vision problems? How might vision problems affect children’ play in outdoor settings? What observable behaviors would suggest that a child may be experiencing a vision disorder?

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**myopia** – nearsightedness; an individual has good near vision but poor distant vision.

**hyperopia** – farsightedness; a condition of the eyes in which an individual can see objects clearly in the distance but has poor close vision.
health departments, professional eye doctors, and public schools. Local service organizations, such as the Lions Clubs, may assist qualified families with the costs of professional eye examinations and glasses.

Children who do not pass an initial vision screening should be retested. Failure to pass a second screening necessitates referral to a professional eye specialist for comprehensive evaluation and diagnosis. However, results obtained from routine vision screening tests should be viewed with caution because they do not guarantee that a problem does or does not exist. Also, most routine screening procedures are not designed to test for all types of vision impairments. Consequently, there will always be some over-referral of children who do not have a vision disorder, while other children may be missed. It is for this reason that the observations of teachers and families are extremely important. Visual acuity also changes over time, so it is important that adults be continuously vigilant of children’s visual performance.

### Hearing Screening

Each year approximately 12,000 babies are born in the United States with a hearing loss (CDC, 2009b). Because language development, speech patterns, and most other facets of learning depend on the ability to hear, undetected hearing losses can have a profound effect on children’s social interactions, emotional development, and school performance (Pittman, Vincent, & Carter, 2009). When children do not hear properly, they may respond and behave in seemingly unacceptable ways and end up being labeled as slow learners, cognitively challenged or as having behavior problems. Early diagnosis of a chronic hearing impairment or severe loss is, therefore, extremely critical.

#### Methods of Assessment

Inappropriate responses and behaviors may be the first indication that a child is not hearing properly (Easterbrooks, Lederberg, & Miller, 2008). Additional signs of hearing loss range from very obvious problems to those that are subtle and difficult to identify (Table 3–5).

Hospitals in most states now comply with Universal Infant Hearing Screening recommendations (see Reflective Thoughts) (Sininger et al., 2009). Trained hospital personnel test infants’ hearing shortly after birth to detect deafness so that early intervention services can be initiated. An interactive map listing state-by-state testing sites and services is available at http://www.infanthearing.org/states/index.html.

An infant’s hearing development should continue to be monitored by checking behavioral responses such as eye blinking or attempts to locate sounds (e.g., stop crying, turn head, interrupt sucking) (Table 3–6). Older infants and toddlers can be tested by observing as they search for sounds (often emitted through speakers in formal testing procedures), as well as by the appropriateness of their responses and language development. Although these procedures can be useful for identifying some children with hearing disorders, they are not effective for detecting all forms of hearing loss.

Children’s hearing should be evaluated by a trained specialist, such as a nurse or audiologist, at least once during the preschool and school-age years and more often if a hearing problem is suspected. Hearing tests evaluate a child’s ability to hear the normal range of tones used in everyday conversation.

Most children are able to complete routine hearing screening with little trouble. However, an unfamiliar situation involving new people, instruments and equipment, a novel task, a lack of
Table 3–5  Behavioral Indicators of Potential Hearing Loss

Families and teachers may observe behaviors that suggest a possible hearing loss, such as:

- frequent mouth breathing
- failure to turn toward the direction of a sound
- delays in acquiring language; development of poor speech patterns
- difficulty understanding and following directions
- asking to have statements repeated
- rubbing or pulling at ears
- mumbling, shouting, or talking loudly
- reluctance to interact with others; quiet or withdrawn
- using gestures rather than words
- excelling in activities that do not depend on hearing
- imitating others at play
- responding to questions inappropriately
- mispronouncing many word sounds
- having an unusual voice quality—one that is extremely high, low, hoarse, or monotone
- failing to respond to normal sounds and voices

Table 3–6  Early Signs of Hearing Abnormalities in the Infant and Toddler

Observe the infant closely for:

- absence of a startle response to a loud noise
- failure to stop crying briefly when adult speaks to baby (3 months)
- failure to turn head in the direction of sound, such as a doorbell or a dog barking (4 months)
- absence of babbling or interest in imitating simple speech sounds (6–8 months)
- no response to adult commands, such as “no” or “come”

Hearing screenings are conducted by an audiologist or specially trained personnel.

Understanding, or failure to cooperate, may occasionally interfere with a child’s performance and yield unreliable test results. These factors must be taken into consideration if an initial screening is failed, and arrangements made to have the child retested in order to confirm or disprove the initial findings. Children who pass a hearing test yet continue to exhibit behaviors suggestive of a hearing loss should continue to be monitored.

Teachers and families can prepare and train young children in advance for hearing screenings. Play activities that require children to listen carefully or involve the use of headphones—telephone operators, airplane pilots, radio announcers, or musicians—will help them become more comfortable with screening procedures.
Teachers should also make an effort to determine what response method (such as raising one hand, pressing a button, pointing to pictures, or dropping a wooden block into an empty can) children will be expected to use during the screening and practice this activity in advance. If a special room is to be used for testing purposes, children should be given an opportunity to visit the facilities and equipment beforehand. This will help to reduce their anxiety and increase the reliability of test results.

**Common Disorders**

Children who are born with any physical disability have an increased risk of also experiencing hearing problems (Allen & Marotz, 2010). Temporary and permanent hearing losses can involve one or both ears and are commonly associated with:

- a family history of hearing problems
- prenatal exposure to maternal infections, such as herpes, German measles, or cytomegalovirus
- prematurity, low birthweight
- bacterial meningitis, measles, mumps
- allergies
- frequent colds and ear infections (otitis media)
- birth defects, such as Down syndrome, Fetal Alcohol syndrome (FAS), cleft lip/cleft palate, cerebral palsy
- head injuries
- exposure to excessive or prolonged noise

Reflective Thoughts

Universal Newborn Hearing Screening and Intervention programs are currently available in every state (ASHA, 2009). Many countries around the world are also making efforts to adapt and implement similar screening initiatives. These programs are designed to evaluate newborn infants for significant hearing loss before they are discharged from the hospital nursery or maternity center so that arrangements for additional testing and medical intervention can be made if indicated. At present, more than 90 percent of all infants in the United States are tested following birth (MCHB, 2009).

Trained staff administer the hearing test in a matter of minutes by placing small electrodes on the scalp and measuring the baby’s response (brain waves) to soft sounds emitted through a tiny earpiece. Babies experience no discomfort during this test, and parents can learn the results within minutes. The average cost for this testing is approximately $30 to $40 and is often covered by insurance plans. Numerous studies have demonstrated the unquestionable advantage of identifying infants with hearing loss and initiating appropriate intervention before 6 months of age (McCann et al., 2009). Yet not every hospital offers this screening; some reserve it only for infants considered at high risk for having a hearing impairment (such as low birth weight, prematurity, family history, maternal infection during pregnancy, presence of other disabilities). Why is the early identification of hearing loss so important to young children’s development? Why are hearing impairments often not diagnosed before the age of 2 to 3 years? What areas of development are most likely to be affected by hearing loss? What community resources are typically available to families who may have concerns about their child’s hearing? Should all insurance companies be required to pay for newborn hearing screening? Explain.
Any parent who expresses concern about his or her child’s hearing should always be listened to carefully and encouraged to seek professional advice. The most common forms of childhood hearing loss are:

- **Conductive loss** affects the volume of word tones. For example, this child will be able to hear loud, but not soft sounds. Conductive hearing loss occurs when sound waves are not being transmitted properly from the external ear to structures in the middle ear (Figure 3–2). Foreign objects, excess wax, and fluid accumulation in the child's middle ear following an infection are common causes of conductive hearing loss.

- **Sensorineural loss** results when the structures of the inner ear (cochlea) or the auditory nerve (which connects to the brain) have been damaged or do not function properly. This type of hearing loss is permanent and affects a child's ability to understand speech and to hear sounds. Children who have a sensorineural loss are considered to have a learning disability that requires special educational management.

- **Mixed hearing loss** refers to a disorder that involves a combination of conductive and sensorineural hearing losses. Structures in both the outer or middle ear and the inner ear or auditory nerve have either been damaged or are not functional.

### Management

Some hearing impairments can be successfully treated if they are identified in the early stages. Treatment approaches depend on the underlying cause, and can range from prescription ear drops and antibiotic therapy to surgery (Grijalva, Nuorti, & Griffin, 2009; O’Brien et al., 2009). Some children who experience permanent hearing loss benefit from hearing aids, while others may receive cochlear implants or eventually learn sign language.

A child who experiences a sudden or gradual hearing loss should be referred to a family physician for medical diagnosis or to an audiologist for a comprehensive hearing evaluation. Families can arrange for this testing through the child’s doctor, a speech and hearing clinic, public health department, public schools, or an audiologist.

Teachers who understand how various impairments affect children's ability to hear can take appropriate steps to improve communication and modify learning environments (Table 3–7). Additional information about hearing impairments, testing procedures, and resources for families can be obtained from:

American Association of Speech-Language-Hearing
2200 Research Boulevard
Rockville, MD 20850-3289
[www.asha.org](http://www.asha.org)

---

**conductive loss** – affects the volume of word tones heard, so that loud sounds are more likely to be heard than soft sounds.

**sensorineural loss** – a type of loss that occurs when sound impulses cannot reach the brain due to damage of the auditory nerve, or cannot be interpreted because of prior brain damage.

**mixed hearing loss** – a disorder that involves a combination of conductive and sensorineural hearing losses.
Speech and Language Evaluation

Throughout the early years, children make impressive gains in the number of words they understand (receptive vocabulary) and use to express themselves (expressive vocabulary) (Table 3-8). Children's receptive vocabulary develops earlier and is usually more extensive than their expressive vocabulary. For example, most toddlers can understand and follow simple directions long before they use words to verbalize their wants or needs. Children's language becomes increasingly fluent and complex with time and considerable practice.

Although many factors influence children's speech and language development, the ability to hear is especially important during the early years when children are learning to imitate sounds, words, and word patterns. Hearing disorders can jeopardize the normal acquisition of speech and language development and lead to long-term speech impairments. Whenever there is concern about the progress of a child's language development, a comprehensive hearing evaluation is always recommended.

It is also important to consider a child's home environment when evaluating language development. Families who engage children in conversation, read stories to their children, and reinforce children's efforts to express themselves are encouraging early literacy and language development. Homes where these opportunities are lacking may limit children's ability to experience and practice communication skills.

Young children also acquire early speech and language skills by imitating speech that is heard in their homes (Dale, Roche & Duran, 2008; Swanwick & Watson, 2005). For example, children who have a parent with an unusual voice inflection or speech impairment are likely to exhibit similar qualities. Children who live in bilingual homes may also take longer to acquire language skills because they must learn to think and speak in multiple languages. Cultural values and variations also exert a strong influence on children's language usage, style, and speech patterns (Trawick-Smith, 2010).

Methods of Assessment

Families are often aware of their child's speech problems but may not know what to do about them. Many adults also believe erroneously that children will eventually outgrow these impairments, so they take no action. Indeed, some children have developmentally appropriate misarticulations that will improve. For example, many 3-year-olds mispronounce "r" as "w" as in "wabbit" (rabbit) or "s" as "th" as in "thong" (song); by age 4 or 5 they are able to correctly pronounce these letter sounds. Nevertheless, children who demonstrate speech or speech patterns that are not developmentally appropriate

---

Table 3-7  Teacher Checklist: Strategies for Improved Communication with Hearing-Impaired Children

| • Reduce background noises, such as musical tapes, radio, motors, or fans that can interfere with a child's limited ability to hear. |
| • Provide individualized versus group instructions. |
| • Face and stand near the child when speaking. |
| • Bend down to the child's level; this makes it easier for the child to hear and understand what is being said. |
| • Speak slowly and clearly. |
| • Use gestures or pictures to illustrate what is being said; for example, point to the door when it is time to go outside. |
| • Demonstrate what the child is expected to do; for example, pick up a bead and thread it on a shoestring. |

---

*speech* – the process of using words to express one's thoughts and ideas.

*misarticulations* – improper pronunciations of words and word sounds.
### Infants

<table>
<thead>
<tr>
<th>Age</th>
<th>Milestones</th>
</tr>
</thead>
</table>
| birth–4 months | • turns to locate the source of sound  
• begins to coo and make babbling sounds: *baa, aah, ooh*  
• imitates own voice and sounds |
| 4–8 months | • repeats syllables in a series: *ba, ba, ba*  
• “talks” to self  
• responds to simple commands: *no, come* |
| 8–12 months | • recognizes labels for common objects: shoe, blanket, cup  
• “talks” in one word sentences to convey ideas or requests: *cookie* (meaning, “I want a cookie”) |

### Toddlers

<table>
<thead>
<tr>
<th>Age</th>
<th>Milestones</th>
</tr>
</thead>
</table>
| 12–24 months | • follows simple directions  
• knows and uses 10–30 words  
• points to pictures and body parts on request and asks frequently, “What's that?” “Why?”  
• enjoys being read to  
• understands 200–300 words  
• speaks in two–three word sentences  
• 65–70% of speech is intelligible |
| 24–36 months | • refers to self as “me”: “Me do it myself.”  
• uses language to get desired attention or object  
• understands simple concepts when asked: “Find the small ball.”  
• follows simple directions: “It's time to get dressed.”  
• understands and uses 50–300 new words  
• 70–80% of speech is intelligible |

### Preschoolers

<table>
<thead>
<tr>
<th>Age</th>
<th>Milestones</th>
</tr>
</thead>
</table>
| 3–6 years | • answers simple questions appropriately  
• describes objects, events, and experiences in fairly detailed terms  
• sings simple songs and recites nursery rhymes  
• carries on detailed telephone conversations  
• enjoys making up and telling stories; acquires a vocabulary of approximately 10,000–14,000 words by age 6  
• uses verb tenses and word order correctly |

### School-age

<table>
<thead>
<tr>
<th>Age</th>
<th>Milestones</th>
</tr>
</thead>
</table>
| 6–8 years | • enjoys talking and conversing with adults  
• uses language, in place of physical aggression, to express feelings  
• loves to tell jokes and riddles  
• understands complex statements and performs multistep requests  
• finds pleasure in writing stories, letters, and e-mail messages  
• expresses self fluently and in elaborate detail |
| 9–12 years | • talks nonstop  
• understands grammatical sequences and uses them appropriately  
• speaks in longer, complex sentences  
• uses and understands irony and sarcasm  
• achieves mastery of language development  
• becomes a thoughtful listener |

should be referred to a speech therapist for evaluation (Justice et al., 2009). A hearing test should be included in this evaluation to rule out the possibility of a hearing loss that could be affecting the child’s speech. Speech and hearing clinics are often affiliated with colleges and universities, medical centers, child development centers, public health departments, public schools, and Head Start programs. Certified speech and hearing specialists can be located in telephone directories or Internet listings or by contacting local school districts or the American Speech, Language, and Hearing Association.

Common Disorders

The term *speech impairment* has many different meanings to persons working with children. For some, the term refers only to more obvious problems, such as stuttering, lisping, or unintelligent speech patterns. For others, a wide range of conditions are cause for concern, such as a monotone voice, nasality, improper pitch of the voice, a voice tone that is too high or too low, omissions of certain letter sounds, or misarticulations of word sounds.

Delayed language development or abnormal speech patterns that persist for more than a few months should be evaluated, and include:

- no speech by 2 years of age
- stuttering
- substitution of word sounds
- rate of speech that is too fast or unusually slow
- monotone voice
- no improvement in speech development
- speech by age 3 that is difficult to understand
- inattentive behavior or ignoring others

Management

Families and teachers serve as important role models and promote children’s acquisition of speech and language skills through frequent communication opportunities and experiences. In addition, teachers can be instrumental in identifying and referring children with speech and language patterns that may not be developmentally appropriate or that interfere with effective communication. Children are often able to achieve significant improvements when speech and language disorders are recognized and treated in their earliest stages.

Nutritional Assessment

The quality of children’s diets has an unquestionable effect on behavior and health. Rising costs and economic struggles have forced many families to sacrifice the quantity and nutritional value of foods they purchase and, in turn, is raising concerns about children’s over- and underconsumption of essential nutrients (Monsivais & Drewnowski, 2009). Television advertising, fast food consumption, and the availability of prepackaged and convenience foods are contributing to a further decline in the quality of children’s diets at a time when obesity rates are increasing (McCool, 2009).

Valuable clues about a child’s nutritional status can be obtained during daily health observations. Signs, such as facial *pallor*, dry skin, bleeding gums, or *lethargy* may reflect poor eating habits. In contrast, a healthy, well-nourished child has:

- height appropriate for height
- weight appropriate for height

*pallor* – paleness.

*lethargy* – a state of inaction or indifference.
Assessment Methods

Selecting an appropriate method for assessing children’s nutritional status depends upon the child’s age, reason for evaluation, type of information desired, and available resources. Common methods include:

- **dietary assessment**—is used to determine the nutrient adequacy and areas of nutrient deficiencies in the child’s eating patterns. Food intake is recorded for a specified time period (24 hours, 3 days, 1 week) (Figure 3–3). The data is then analyzed using one of several methods, such as the Food Guide Pyramid, nutrient analysis software, or Reference Daily Intakes (RDIs). (See Chapter 12.)
- **anthropometric assessment**—is based on simple measurements of height, weight, and head circumference and comparisons made with standardized norms. **Skinfold** thickness and mid-arm circumference measurements may also be taken to estimate body fat percentage.
- **clinical assessment**—involves observing a child for signs of nutritional deficiency (Table 3–9). This is not considered a reliable method because of its subjective nature and the fact that physical symptoms typically do not appear until a deficiency is severe.
- **biochemical assessment**—involves laboratory testing of various body tissues and fluids, such as urinalysis or hemoglobin (testing for iron level) to validate concerns related to over- or underconsumption of nutrients. These tests are usually ordered by a health care provider and performed by trained laboratory technicians.

Common Disorders – Malnutrition and Obesity

Teachers and families should be alert to several nutritional problems that have a direct effect on children’s health and development. Malnutrition, for example, occurs when children’s diets lack essential nutrients, especially protein, vitamins A and C, iron, and calcium for prolonged periods. Inadequate nutrition knowledge, unhealthy food choices, poverty, and food insufficiencies may leave children malnourished simply because they do not get enough to eat or are consuming unhealthy foods (Dave et al., 2009). Long-term use of certain medications, such as steroids, aspirin, antibiotics, and laxatives or lack of sunshine can interfere with nutrient absorption and leave children depleted. Children who are malnourished often fail to reach typical growth standards and are at greater risk for communicable illness and infection, chronic irritability, anemia, fatigue, and learning problems. However, not all malnourished children are thin and emaciated. Some overweight children are also malnourished because their diets lack proteins, vitamins, and minerals essential for healthy growth and development.

Obesity presents another serious nutritional challenge to children’s health. Approximately 20 to 25 percent of all children in the United States are considered overweight for their age (CDC, 2009a). Inactivity and unhealthy eating habits have been identified as primary causes of the childhood obesity epidemic (Vadiveloo, Zhu, & Quatromoni, 2009). Children who are overweight or obese are likely to remain so as adults and, thus, are at greater risk for developing life-threatening health problems including heart disease, stroke, sleep apnea, asthma, and diabetes.

**mottling**—marked with spots of dense white or brown coloring.

**skinfold**—a measurement of the amount of fat under the skin; also referred to as fat-fold measurements.
NUTRITIONAL ASSESSMENT

Dear Parent:

Nutrition is a very important part of our program. In order for us to plan appropriate nutrition-education activities and menus to meet your child’s needs, we need to know your child’s eating patterns. This information will also help us obtain an overview of the eating habits of young children as a group. Please take the time to fill out the questionnaire carefully.

NAME ______________________________________________ AGE __________ DATE ________________

1. How many days a week does your child eat the following meals or snacks?
   a morning meal __________________________
   a lunch or midday meal __________________________
   an evening meal __________________________
   a midmorning snack __________________________
   a midafternoon snack __________________________
   an evening snack __________________________
   snack during the night __________________________

2. When is your child most hungry?
   morning __________________________
   noon __________________________
   evening __________________________

3. What are some of your child’s favorite foods? _________________________________________________

4. What foods does your child dislike?
   __________________________________________________________________________________________

5. Is your child on a special diet? Yes ______________ No ______________
   If yes, why? ______________________________________________________________________________
   Describe diet ______________________________________________________________________________
   Diet prescribed by whom? ____________________________________________________________________

6. Does your child eat things not usually considered food e.g., paste, dirt, paper? ______________
   If yes, how often? __________________________________________________________________________
   What is eaten? ______________________________________________________________________________

7. Is your child taking a vitamin or mineral supplement?
   Yes ______________ No ______________ If yes, what kind? __________________________________________________________________________

8. Does your child have any dental problems that might create a problem when eating certain foods?
   __________________________________________________________________________________________

9. Has your child ever been treated by a dentist? ______________

10. Does your child have any diet-related health problems?
    Diabetes ______________ Allergies ______________ Other ______________

11. Is your child taking any medication for a diet-related health problem?
    __________________________________________________________________________________________

12. How much water does your child normally drink throughout the day?
    __________________________________________________________________________________________

13. Please list as accurately as possible what your child eats and drinks on a typical day. If yesterday was a typical day, you may use those foods and drinks.

<table>
<thead>
<tr>
<th>TIME</th>
<th>PLACE</th>
<th>FOOD</th>
<th>AMOUNT</th>
</tr>
</thead>
</table>

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### Table 3–9 Physical Signs of Malnutrition

<table>
<thead>
<tr>
<th>Tissue</th>
<th>Sign</th>
<th>Cause</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face</td>
<td>Pallor</td>
<td>Niacin, iron deficiency</td>
</tr>
<tr>
<td></td>
<td>Scaling of skin around nostrils</td>
<td>Riboflavin, B6 deficiency</td>
</tr>
<tr>
<td>Eyes</td>
<td>Hardening of cornea and lining: pale</td>
<td>Iron deficiency</td>
</tr>
<tr>
<td></td>
<td>lining</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Foamy spots in cornea</td>
<td>Vitamin A deficiency</td>
</tr>
<tr>
<td>Lips</td>
<td>Redness; swelling of mouth and lips;</td>
<td>Riboflavin deficiency</td>
</tr>
<tr>
<td></td>
<td>cracking at corners of mouth</td>
<td></td>
</tr>
<tr>
<td>Teeth</td>
<td>Decayed or missing</td>
<td>Excess sugar (or poor dental hygiene)</td>
</tr>
<tr>
<td></td>
<td>Mottled enamel</td>
<td>Excess fluoride</td>
</tr>
<tr>
<td>Tongue</td>
<td>Red, raw, cracked, swollen</td>
<td>Niacin deficiency</td>
</tr>
<tr>
<td></td>
<td>Magenta color</td>
<td>Riboflavin deficiency</td>
</tr>
<tr>
<td></td>
<td>Pale</td>
<td>Iron deficiency</td>
</tr>
<tr>
<td>Gums</td>
<td>Spongy, red, bleeding</td>
<td>Vitamin C deficiency</td>
</tr>
<tr>
<td>Skin</td>
<td>Dry, flaking</td>
<td>Vitamin A deficiency</td>
</tr>
<tr>
<td></td>
<td>Small underskin hemorrhages</td>
<td>Vitamin C deficiency</td>
</tr>
<tr>
<td>Nails</td>
<td>Brittle, ridged</td>
<td>Iron deficiency</td>
</tr>
</tbody>
</table>

### Management

Obesity in young children cannot be ignored. Although prevention is always ideal, steps can be taken to help children of any age implement healthy eating and activity behaviors (Kalich, Bauer, & McPartlin, 2009; Gartrell & Sonsteng, 2008). For maximum success, weight management approaches must include the collaborative efforts of the child, family, teachers, and health care personnel, and target:

- meal planning and nutritious eating habits.
- strategies for increasing children’s daily activity level. (For example, children can be asked to run errands, walk a pet, help with daily household chores, or ride their bike to school.)
- acquainting children with new outside interests, hobbies, or activities, such as hiking, swimming, dancing, playing neighborhood baseball, or learning to ride a bike. (Involvement in fun activities can divert children’s attention away from food.)
- finding ways to help children experience success and develop a positive self-image. (For example, acknowledging children’s efforts can boost self-esteem. For many children, positive adult attention replaces food as an important source of personal satisfaction.)

Childhood obesity will be discussed throughout the book because of its current significance, complexity, and serious health consequences.
Long-term weight management is achieved by attending to all aspects of a child’s well-being—physical, emotional, spiritual, and social (Kalich, Bauer, & McPartlin, 2009; Wang et al., 2009). Placing children on weight reduction plans is not advisable unless they are under a doctor’s or nutritionist’s supervision. Careful attention must be given to planning weight reduction programs that meet children’s critical nutrient needs for sustained growth and development. Adults who model healthy eating and activity lifestyles are also in a position to have a positive influence on children’s preferences and weight management behaviors. Additional ideas for healthy eating and physical activities will be addressed throughout the book and are also available on numerous websites, including the American Council for Fitness (www.acfn.org), My Pyramid for Kids (www.mypyramid.gov), and the Division of Adolescent and School Health (www.cdc.gov/nccdphp/dash).

### Referrals

The initial step in making successful referrals involves gaining the family’s trust and cooperation. Referrals are of little use unless families are willing and able to follow through with recommendations. Knowing something about their beliefs, customs, values, and community resources improves a teacher’s ability to make effective referrals. For example, mistrust of the medical profession, poverty, job conflicts, religious beliefs, a lack of transportation, or limited education will undoubtedly affect a family’s capacity and willingness to follow through with recommendations.

Meeting with the child’s family, or calling them on the telephone, is often the most effective method for making referrals:

**Teacher:** “I am concerned about Ryan’s vision. On several occasions, I have noticed that his right eye turns inward more than the left eye and that he holds his head close to materials when he is working. Have you observed any of these behaviors at home?”

**Parent:** “Yes, but we didn’t think it was anything to worry about. We thought he was just tired or trying to be funny.”

**Teacher:** “I can’t be sure that anything is wrong with Ryan’s eyesight, but the behaviors I have observed can sometimes be an indication of vision problems and they need to be evaluated by a..."
eye specialist. If I can be of assistance in locating a doctor or making an appointment, please let me know. I will also give you a written copy of my observations to take along. Please let me know the date of Ryan's appointment when you have scheduled it.”

Although a face-to-face meeting with the child’s family is always preferable, a well-written letter may be the only way to reach some families. Copies of all screening test results should be given to families so they can be shared with the child’s doctor. Having access to this information improves the referral process and helps medical personnel understand how the child’s behavior is being affected. Teachers can also alleviate some of the family’s frustration by offering information about local resources, such as hospitals, clinics, health departments, medical specialists, public and private agencies, volunteer organizations, and funding sources where services can be obtained.

Follow-up contact should be made after several days to determine if families have been successful in arranging for professional evaluation or to learn the outcome of diagnostic testing. Teachers can use these findings to make adjustments in the child’s instructional program and learning environment. Follow-up contacts are also beneficial for reinforcing a family’s efforts to obtain necessary services and to convey the teacher’s genuine interest in the child’s well-being.

**Focus On Families**

**Children’s Eye Safety**

Each year, thousands of children sustain eye injuries as the result of hazardous conditions at home or school. The majority of these eye injuries are preventable through proper supervision, careful selection of toys and equipment, and the use of appropriate eye protection. Families play a major role in identifying potentially dangerous situations and taking measures to eliminate children’s exposure to unnecessary risk. Adults should also take similar precautions to protect their own eye safety and serve as positive role models for children.

- Never shake a baby! Vigorous shaking can cause serious eye damage and blindness.
- Insist that children wear sunglasses whenever they play outdoors to limit exposure to ultraviolet (UV) light. Over time, UV exposure increases the risk of developing a number of serious eye conditions, including macular degeneration and cataracts. Purchase sunglasses that fit closely, wrap around the entire eye area, and provide UV-A and UV-B protection.
- Keep children indoors whenever mowing or edging the lawn. Stones, sticks, and small debris can become dangerous projectiles.
- Select toys and play equipment based on your child’s age and abilities. Avoid toys with projectile parts, such as darts, slingshots, pellet guns, and missile-launching devices.
- Stones, rubber bands, balls, wire coat hangers, and fish hooks also pose a serious eye danger.
- Supervise children closely whenever they are using a sharp item, such as a fork, pencil, toothpicks, wire, paperclips, scissors, or small wooden dowels.
- Keep children away from fireworks. Do not allow them to light fireworks or to be around anyone who is doing so.
- Lock up household cleaners, sprays, paints, paint thinners, and chemicals such as garden fertilizers and pesticides that could injure children’s eyes.
- Make sure children wear appropriate protective eyewear, such as goggles or a helmet with a face guard, when participating in sports.
- Don’t allow children to shine a laser pointer or aim a squirt gun or spray nozzle toward someone’s eyes.
- Remind children to avoid touching their eyes with unwashed hands.
Chapter 3  Assessing Children's Health

My Five Senses...

**Concept:** Seeing, hearing, tasting, touching, and smelling are your five senses.

**Learning Objectives**

- Children will learn to name all five senses.
- Children will learn which body parts go with which senses: see with eyes, hear with ears, taste with tongue, touch with fingers and skin, and smell with nose.

**Supplies**

- Small blanket; various objects (items that children can label—plastic foods, animals, people, and so on); small paper cups; tin foil; various scents or foods (vanilla, orange peel, ketchup, peppermint, chocolate, ranch dressing, green pepper, etc.); tape recording of children's and teachers' voices; feely box; various items with shapes that children can recognize (ball, pine cone, banana, block, plate, cup, and so on); salty (crackers), sweet (mandarin orange), sour (lemon), and bitter (unsweetened chocolate) items; hand wipes; plates; forks

**Learning Activities**

- Read and discuss the following books:
  - *Your Five Senses* by Bobbi Katz
  - *My Five Senses* by Aliki
- Each day discuss one of the senses and have the children participate in an activity.
- **Seeing**—Tell the children that you are going to play a game called "What's Missing?" This is a game that uses their sense of seeing. Place four to five objects out on the floor in front of the children. Name each item, and then line the items up in a way so that all the children can see them. Place the towel over the items. Remove one of the items and wrap it in the towel. Ask children to guess which item is missing. Call on children one at a time; if they name the missing item, they can come up and hide the next item. Continue until all children have had a turn. Vary the toys to keep children interested.
- **Smelling**—Tell the children that you are going to do an activity to learn about their sense of smell. Make “smelling cups”: for liquid scents, put a few drops on a cotton ball and place it in the cup. Cover the cup with foil in which holes have been poked. Pass the cups around. Have children smell each cup and try to guess what the smell is. After each child has had a chance to smell each cup, remove the foil so they can see if they were correct.
- **Hearing**—Make a recording of the teachers and children while they are playing. On another day, tell the children that they will use their sense of hearing for this activity. Play the tape and see if the children can guess whose voices they are hearing on the tape.
- **Feeling**—Tell the children that this activity will involve using their sense of touch. Place various items in a feely box. Have each child reach in and use their sense of touch to determine what the object is.
- **Tasting**—Tell the children you are going to have them taste some different items to see if they are sweet, sour, salty, or bitter. Tell them that their tongue has little things called taste buds on it that help them know what a food tastes like. Next, have all the children wash their hands

(continued)
Summary

Teachers play an important role in the health assessment of young children.

- Information obtained from various screening procedures, including observations, health records, screening procedures, daily health checks, and interactions with families, can be used for monitoring children's health.
- Assessment information is also useful for identifying children who require professional evaluation and for modifying learning experiences to address their special needs.
- Results of screening procedures are not always accurate and can be affected by children's comfort level and ability to respond.
- Teachers can initiate the referral process after gathering and evaluating data from multiple sources.
- Referrals should be followed up to learn about assessment outcomes, treatment interventions, and any classroom modifications that may be needed.

Terms to Know

- intervention p. 55
- referrals p. 55
- skeletal p. 57
- neurological p. 57
- underweight p. 59
- overweight p. 59
- obese p. 59
- ophthalmologist p. 60
- optometrist p. 60
- amblyopia p. 63
- strabismus p. 63
- myopia p. 64
- hyperopia p. 64
- language p. 65
- audiologist p. 65
- conductive loss p. 68
- sensorineural loss p. 68
- mixed hearing loss p. 68
- speech p. 69
- misarticulations p. 69
- pallor p. 71
- lethargy p. 71
- mottling p. 72
- skinfold p. 72

Chapter Review

A. By Yourself:

1. Define each of the Terms to Know listed at the end of this chapter.
2. Select the screening test that is recommended for children with the following behaviors, signs, or symptoms. Place the appropriate code letter in each space for questions 1–15.
Chapter 3  Assessing Children’s Health

H  Hearing screening
V  Vision screening
D  Developmental screening
HW  Height and weight
Dt  Dental screening
S  Speech evaluation
N  Nutrition evaluation

---

1. frequent blinking; often closes one eye to see
2. stutters whenever tense and in a hurry to speak
3. usually listless; appears very small for chronological age
4. stumbles over objects in the classroom; frequently walks into play equipment in the play yard
5. very crooked teeth that make his speech difficult to understand
6. seems to ignore the teacher’s requests; shouts at the other children to get their attention
7. awkward; has great difficulty running and climbing; tires easily because of obesity
8. a 5-year-old who has trouble catching a ball, pedaling a bicycle, and cutting with scissors
9. appears to focus on objects with one eye while the other eye looks off in another direction
10. multiple cavities; in recent weeks has not been able to concentrate on any task
11. is extremely shy and withdrawn; spends the majority of her time playing alone, imitating the actions of other children
12. seems extremely hungry at snack time; always asks for extra servings and takes food left on other children’s plates when the teacher isn’t looking
13. becomes hoarse after shouting and yelling during outdoor time
14. arrives at school each morning with potato chips, candy, or a cupcake
15. a 4½-year-old who whines and has tantrums to get his own way

B. As a Group:

1. Identify and describe the vision disorders that are most common among young children. What behavioral indicators might a teacher observe? How is each typically treated?

2. Discuss how teachers might use information in health records to improve learning experiences for children with special sensory needs?

3. Discuss how the learning activities outlined in the Classroom Corner feature could be modified for a child who is blind or has low vision. How might they be modified for a child with significant hearing loss?

4. Brainstorm ways that teachers could incorporate more physical activity into classroom routines to help children achieve the recommended 60 minutes of vigorous activity each day.

5. Debate whether or not teachers should calculate children’s BMI and inform families if a child is overweight. Role-play how a teacher might share this information with an unresponsive parent and offer suggestions for improving the child’s nutrition and physical activity. Critique each other’s responses.

6. If a family asks you where they can get their 2-year-old’s hearing tested, what resources in your community would you recommend?
Case Study

A friend encouraged Mrs. Howard to take her son to the developmental screening clinic being held this week at the community recreation center. Parker is nearly 2 years old and speaks only a few words that are understandable. He has few opportunities to play with other children his age because he spends most days with his grandmother while his mother works at a nearby hospital. On the day of the developmental screening, team members checked Parker’s height, weight, vision, hearing, speech, cognitive abilities, and motor skills. The team leader also read through the child history form that Mrs. Howard had completed and noted that Parker had several food allergies, as well as frequent upper respiratory and ear infections. All of Parker’s screening results proved to be within normal limits, with the exception of his hearing tests, which revealed a significant loss in one ear and a moderate loss in the other.

1. Is Parker’s speech development appropriate for his age? Explain.
2. What significance do Parker’s ear infections have to his hearing loss? How might his food allergies be contributing to his hearing loss?
3. Should the screening team’s recommendation for Parker include a referral to his physician? Why?
4. What behavioral signs of hearing loss might you expect Parker to exhibit?
5. What strategies might the developmental team suggest to Parker’s mother and grandmother for improving his speech development and communication skills?

Application Activities

1. Locate and read instructions for administering the Snellen Tumbling E and one additional acuity screening test. Pair up with another student and practice testing each other. What advantages does each test offer? Disadvantages? Did you encounter any problems administering the test? How would you modify your instructions to a child based on this experience?
2. Devise a monitoring system for recording the daily food intakes of individual children in a group setting. Be sure to address the following questions:
   a. What nutritional information do you want to collect? In what form?
   b. Who will be responsible for collecting this data?
   c. How can this information be obtained efficiently?
   d. How can teachers and families use this data to improve children’s eating habits?
   e. What other ways might teachers use this information to promote children’s health?
3. Collect samples of child history forms from several schools and/or early childhood programs in your area. Review the type of information that is requested most often. Design your own form and distribute it to several families for their comments and suggestions.
4. Attend a signing class. Learn to say “hello” and “good-bye” and ten additional words in sign language.
5. Make arrangements with a local school or early childhood program to conduct a comparison study of children’s growth. Measure and record the heights and weights of fifteen children, ages 3 to 6 years, on the standard Growth Charts (download from the text’s premium website). Then, determine each child’s BMI and plot this information on the BMI-for-age charts. Which method provides the most accurate information about children’s growth? What did you learn about the
children’s potential risk for becoming overweight? Learn more about the BMI measure and initiatives for preventing childhood obesity at the CDC website (http://www.cdc.gov).

6. Obtain an audiometer. Have a nurse or audiologist demonstrate the technique for testing a person’s hearing. Practice administering the test with a partner. In what ways did this experience change your ideas about how to prepare children for testing?

7. Research the Internet or contact the American Heart Association for educational programs designed to improve children’s cardiovascular health. Are the materials/programs developmentally appropriate? How is improvement determined?

**Helpful Web Resources**

- American Speech, Language, and Hearing Association (ASHA) http://www.asha.org
- Children with Special Needs http://www.napcse.org
- KidSource (Parent’s guide to middle ear fluid in children) http://www.kidsource.com
- Prevent Blindness America http://www.preventblindness.org
- Action for Healthy Children http://www.actionforhealthykids.org/

You are just a click away from additional health, safety, and nutrition resources! Go to www.CengageBrain.com to access this text’s Education CourseMate website, where you’ll find:

- an information release form
- a nutritional assessment form
- growth and BMI charts
- glossary flashcards, activities, tutorial quizzes, videos, web links, and more

**References**


