Physical Assessment

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Learning Objectives

1. Outline the essential elements obtained from a health history.
2. List the four techniques of physical assessment.
3. Demonstrate six steps of the focus assessment.
4. Describe the abnormal manifestations associated with each specific body system for one client with whom you are familiar.
5. List four normal responses that determine the client’s level of consciousness.
6. Describe four abnormal responses in pupil assessment.
7. State three assessment components of the skin.
8. Describe normal and abnormal lung sounds.
9. Outline the steps of breast assessment.
10. Identify the four areas for heart sound auscultation.
11. List at least five essential elements included in a mental status assessment.
12. Compare and contrast three elements of the antepartum obstetrical assessment.
13. Relate the elements of a “9” score on the Apgar test.
14. Describe basic components of a pediatric physical assessment.

Assessment

Basic assessment discussed in this chapter can be performed in less than 10 minutes using a stethoscope, penlight, reflex hammer, your hands, and observational skills. Although you may not be able to perform assessment rapidly at first, you will have many opportunities to practice your skills, because every client should be assessed at least once a shift.

While interviewing the client, note such characteristics as hair, skin, posture, facial expression, and body language—in other words, the general appearance of the client. Then proceed with a head-to-toe systems assessment using the four techniques of assessment: inspection, palpation, percussion, and auscultation. This IPPA sequence is used for all systems except for the abdominal assessment, which requires auscultation before palpation and percussion. Palpation and percussion are performed using fingers and hands to assess abnormalities of sound, such as vocal fremitus, enlarged organs, organ displacement, and chest expansion. Auscultation is accomplished by using a stethoscope to listen to breath, heart, and bowel sounds. Observe the client’s response as each system is assessed.

Equipment

The stethoscope is the primary instrument used for assessment. Remember that any movement of the tubing or chest piece by clothing or hands can cause extraneous noise that obliterates the sounds you want to hear. The diaphragm piece should be applied firmly to the skin. It enhances high-pitched sounds (breath sounds, normal heart sounds, bowel sounds). The bell piece should be placed very lightly to pick up low-pitched sounds, such as vascular sounds and abnormal heart sounds. If the bell is pressed firmly, it stretches the skin and acts as a diaphragm. Other instruments used include the penlight, reflex hammer, ophthalmoscope, otoscope, and tuning fork.

Health History

A total client assessment begins with a nursing health history. Using open-ended questions such as “Tell me about . . .,” collect data about past health conditions, current problems, and present needs. The information is obtained through objective (observed) and subjective (stated by client) data collection.

Information obtained from the interview and the physical assessment constitutes the basis for identifying nursing diagnoses and establishing the individualized client care plan. A complete health history includes the following elements:

- Biographic information: age, sex, educational level, marital status, living arrangements.
- Chief complaint: condition that brought client to health care facility; reason for visit; any recent changes.
- Present health status or illness: onset of the problem; clinical manifestations, including severity of symptoms; pain characteristics if present.
- Health history: general state of health, past illnesses, surgeries, hospitalizations, allergies, over the counter (otc’s) medications, herbal supplements, current medications, and general habits such as smoking, alcohol consumption, or recreational drug use.
- Family history: age and health status of parents, siblings, and children; cause of death for immediate family members.
- Psychosocial factors, lifestyles: cultural beliefs that influence health management; religious or spiritual beliefs.
- Nutrition: dietary habits, preferences, or restrictions.
- Domestic violence: (JCAHO requirement).

Nurses’ Role

The nurse’s role in obtaining a health history and completing a physical assessment has expanded dramatically over the last 40 years. Today nurses must be adequately instructed to perform a total assessment, as well as a focus assessment,
including the use of equipment, formerly the domain of physicians only. The skill of performing a physical assessment must be practiced repeatedly to acquire expertise.

**EXAMINATION TECHNIQUES**

**INSPECTION**
Observe the client while facing him or her in the bed or chair. Observe the client's skin color and texture; check for lesions and hair distribution. Look at overall body structure. If the client can be out of bed, observe gait and stance. Note all parts of the body as the examination proceeds. Inspection also evaluates verbal and behavioral responses and mental status.

**PALPATION**
Obtain information by using the hands and fingers to palpate. A light or deep palpation depends on the area being palpated. The palmar surface of fingers and finger pads are used to determine position of the organs, size and consistency, fluid accumulation, pain, and masses. The ulnar surface of the hand is used to distinguish vibration and temperature. The moisture and warmth of the skin can also be determined during palpation.

**PERCUSSION**
Produces sound waves by using the fingers as a hammer. Place the interphalangeal joint of the middle finger on the skin surface of the nondominant hand. Using the tip of the middle finger of the dominant hand, strike the placed finger. Vibration is produced by the impact of the fingers striking against underlying tissue. Sound or tone of the vibration is determined by body area or organ percussed. Normal lung areas produce a resonance sound; liver sounds are dull and a flat sound is heard over muscle.

**AUSCULTATION**
Place the stethoscope on the client's bare skin to listen for the presence and characteristics of sound waves. The bell of the stethoscope is used to detect low-pitched sounds; the diaphragm detects high-pitched sounds. Note variations in intensity, pitch, duration, and quality.
FOCUS (SHIFT) ASSESSMENT

A full physical assessment is completed upon admission. A focus assessment, also called a bedside or shift assessment, is performed at the beginning and ending of the shift and concentrates on the vital assessment parameters; tracks changes from shift to shift and should take no more than 5 minutes to complete. Several activities in the assessment can be completed at the same time. Usually, it is individualized to fit the client’s condition, diagnosis, and level of acuity.

Step 1

Evaluate the client’s level of consciousness, eye contact and responsiveness, color and texture of the skin, any IVs, dressings or tubes visible. Ask appropriate questions to determine orientation to time and place. Establish the nurse-client relationship at this time.

Step 2

Assess vital signs. While taking the client’s pulse, feel skin temperature and moisture. Check bilateral radial pulses. Observe for edema in face or neck. Individualize the assessment; for example, with a neurological condition, check pupils.

Step 3

Remove client’s gown or raise gown. Use stethoscope to listen to heart sounds, apical pulse and breath sounds bilaterally. Observe breathing patterns, symmetry of chest movement, shape of chest, and depth of respirations. Check for skin turgor.

Step 4

Auscultate abdomen for bowel sounds. Use palpation and percussion techniques only if appropriate to diagnosis. Palpate bladder if necessary (based on output). If catheter is in place, observe urinary output for color, odor, consistency, and amount.

Step 5

Assess lower extremities for warmth, color, moisture, presence of pedal or popliteal pulses, muscle tone and sensation. Assess for pedal edema or general edema in the lower extremities. Check traction or casted areas for skin breakdown, alignment and placement.

Step 6

Have client turn onto side or sit at edge of bed. Assess posterior lung fields and symmetry of chest movement with inspiration. Assess skin for pressure areas, particularly coccyx and heels when client returns to side-lying position. Evaluate client’s ability to move in bed.
### Physical Assessment

#### Neurologic Assessment

The neurologic examination begins with the initial contact with the client. Evaluation of verbal responses, movement, and sensation is carried out throughout the examination. In addition, functions of the cerebrum, cerebellum, cranial nerves, spinal cord, and peripheral nerves are assessed. The level of consciousness is the most sensitive and reliable index of cerebral function.

**Assessment**

**Level of Consciousness**

Evaluate verbal responses

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alert</td>
<td>Drowsy</td>
</tr>
<tr>
<td>Mood appropriate to situation</td>
<td>Difficult to awaken</td>
</tr>
<tr>
<td>Responds to verbal command</td>
<td>Unable to give date, month, place</td>
</tr>
<tr>
<td>Answers questions appropriately</td>
<td>Irritable</td>
</tr>
<tr>
<td>Speaks clearly</td>
<td>Memory defect</td>
</tr>
<tr>
<td>Oriented to time, person, place, and purpose</td>
<td>Difficulty finding words</td>
</tr>
<tr>
<td>Recent and remote memory intact</td>
<td>Does not recognize family</td>
</tr>
<tr>
<td>Eyes open</td>
<td>Does not respond to own name</td>
</tr>
<tr>
<td>Follows command to stick out tongue, squeeze fingers, move extremities</td>
<td>Eyes closed</td>
</tr>
<tr>
<td></td>
<td>Does not follow directions to stick out tongue, squeeze fingers, or move extremities</td>
</tr>
</tbody>
</table>

Observe and test symmetry of motor responses on both sides of body

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**TABLE 11-1 GLASGOW COMA SCALE**

<table>
<thead>
<tr>
<th>A. Motor response.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Obey a simple command</td>
<td>6</td>
</tr>
<tr>
<td>2. Localizes painful stimuli; attempts to remove offending stimulus; lack of obedience</td>
<td>5</td>
</tr>
<tr>
<td>3. Withdrawn—moves purposelessly in response to pain</td>
<td>4</td>
</tr>
<tr>
<td>4. Abnormal flexion—decorticate posturing</td>
<td>3</td>
</tr>
<tr>
<td>5. Extensor response—decerebrate posturing</td>
<td>2</td>
</tr>
<tr>
<td>6. No motor response to pain</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Verbal response.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Oriented—to time, place, and person</td>
<td>5</td>
</tr>
<tr>
<td>2. Confused conversation; disorientation in one or more spheres</td>
<td>4</td>
</tr>
<tr>
<td>3. Inappropriate or disorganized use of words (cursing); lack of sustained conversation</td>
<td>3</td>
</tr>
<tr>
<td>4. Responds with incomprehensible sounds</td>
<td>2</td>
</tr>
<tr>
<td>5. No verbal response (Record T if an endotracheal or tracheostomy tube is in place)</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Eye opening.</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Spontaneous when a person approaches</td>
<td>4</td>
</tr>
<tr>
<td>2. In response to speech</td>
<td>3</td>
</tr>
<tr>
<td>3. Only in response to pain</td>
<td>2</td>
</tr>
<tr>
<td>4. Do not open, even to painful stimuli (Record C if eyes are closed by swelling)</td>
<td>1</td>
</tr>
</tbody>
</table>

Note: This scale is a tool for assessing a client’s response to stimuli. Scores range from 3 (deep coma) to 15 (normal). Add numbers to get a total score.
PHYSICAL ASSESSMENT (continued)

Assessment

Exert pressure on nailbed
with pen
Apply pressure to supraorbital
ridge
Pinch Achilles tendon
Test each side independently

Normal

Responds to painful stimuli by
reaching out or trying to stop
pressure

Abnormal

Does not localize or withdraw from
painful stimuli or withdraws
abnormally

Assumes decorticate posturing (legs
extended; feet extended with
plantar flexion; arms internally
rotated and flexed on chest): may
be due to lesion of corticospinal
tract near cerebral hemisphere

Assumes decerebrate posturing (arms
stiffly extended and hands turned
outward and flexed; legs extended
with plantar flexion): may be due
to lesion in diencephalon,
pons, or midbrain

Assumes flaccid posturing (no motor
response): may be due to extreme
brain injury to motor area of brain

Involuntary movements

Choreiform (jerky and quick):
present in Sydenham’s chorea

Athetoid (twisting and slow): present
in cerebral palsy

Tremors: hyperthyroidism, cerebellar
ataxia, parkinsonism

Spasms: cord-injured clients

Seizures: brain injury, heat stroke,
electrolyte imbalance

Asterixis: metabolic encephalopathy
due to liver or kidney failure

Pupil Assessment

Observe pupils using penlight and
pupil gauge or an automated
pupillometer

Size of pupils

Diameter: 1.5–6 mm

Unilateral dilation: sign of third
cranial nerve involvement

Bilateral dilation: sign of upper
brain stem damage

Unilateral dilation and nonreactive:
sign of increased intracranial
pressure (ICP) or ipsilateral
oculomotor nerve (III) compression
from tumor or injury

Midposition and fixed: sign of
midbrain involvement

Pinpoint and fixed: sign of pontine
involvement or opiate effect

Unequal: sign that parasympathetic
and sympathetic nervous systems
are not in synchronization

Sluggish reaction or failure to react
to light: early warning of deteriorating
condition or elevated ICP

Equality of pupils

Equal

Observe reaction to light by
using penlight in darkened
room

Pupil constricts promptly
Assessment

Open eyelid being tested; cover opposite eye

Hold both eyelids open
Shine light into one eye only
Observe opposite eye

Check accommodation (ability of lens to adjust to objects at varying distances)

Observe consensual light reflex

Test client’s hand grip.

Motor Function Assessment

Assess bilateral muscle strength
Test hand grip by asking client to squeeze your fingers
Rate muscle strength from 0 to 5 with 0 indicating no muscle contraction and 5 (normal) indicating full range of motion against gravity with full resistance
Test arm strength by asking client to close eyes and hold arms out in front with palms up

Assess flexion and extension strength in extremities
Stand in front of client, place your hand in front of client, and ask client to push your hand away

Abnormal

Light reflex is the most important sign differentiating structural (cranial involvement) from metabolic coma due to extracranial cause (e.g., diabetic coma), which does not alter light reflex

Both pupils constrict
Lens can adjust

Pupil does not constrict: sign that connection between brain stem and pupils is not intact

When the lens thickens (often in the fifth decade of life) accommodation can be limited

Maintains position for 20–30 seconds

Cannot maintain position—downdrifts one extremity

Unequal response in arms
Asymmetrical response
Inability to perform movements

(continued)
PHYSICAL ASSESSMENT (continued)

**Assessment**

**Place your hand on client’s forearm and ask client to pull arm upward**

**Position client’s leg with knee flexed and foot resting on bed; as you try to extend leg, ask client to keep foot down**

**Place one hand on client’s knee and one hand on client’s ankle; ask client to straighten leg as you apply resistant force to knee and ankle**

**Assess muscle tone**

Flex and extend client’s upper extremities to assess how well client resists your movements

**Assess coordination**

**Hand coordination**

Ask client to pat both thighs as rapidly as possible

Ask client to turn hands over and back in quick succession

Ask client to touch thumb with each finger in rapid succession—repeat with other hand

**Foot coordination**

Place your hands close to client’s feet

Ask client to tap your hands alternately with the balls of feet

**Hand positioning coordination**

With client’s eyes open, extend your hand in front of client’s face

Ask client to touch nose with index finger several times in rapid succession

Repeat test with client’s eyes closed

**Leg positioning coordination**

Ask client to put heel on opposite knee and to slide heel down leg to foot

**Normal**

Equal response in both legs

Client resistance is apparent

Client able to perform coordinated movements on request: hand, foot, hand and leg positioning

**Abnormal**

Unequal response in legs

Increased resistance: sign of increased muscle tone from muscle rigidity or spasticity in upper motor neuron (UMN) lesions, such as with CVA and parkinsonism

Decreased resistance to leg extension and arm flexion in UMN lesion (CVA)

Weakness in lower motor neuron (LMN) and cerebellar lesion

Uncoordinated movements: may be due to cerebellum or basal ganglia involvement

Clumsy movement with cerebellar involvement

Tremor as nose is approached indicates cerebellar involvement

Inability to perform task with eyes closed: may be due to loss of positioning sense
Assessment

Assess reflexes

Blink reflex
- Hold client’s eyelid open
- Approach client’s eye unexpectedly from side of head
- Complete corneal touch

Gag and swallow reflex
- Open client’s mouth and hold tongue down with tongue blade
- Touch back of pharynx on each side with applicator stick

Plantar reflex
- Run top of pen along outer lateral aspect from heel to little toe of client’s foot
- Continue tracing a line across ball of foot toward great toe

Deep tendon reflex
- Ask client to relax
- Position limb to be assessed so that muscle is somewhat stretched
- Using reflex hammer, strike tendon quickly
- Assess according to scale

Grading Scale
- 4+: Hyperactive or exaggerated
- 3+: More brisk than usual but not indicative of disease state
- 2+: Average or normal
- 1+: Slightly diminished, low normal
- 0: No response

Sensory Function

Assess superficial sensations

Pain
- Ask client to close eyes
- Stroke or touch skin with cotton-tipped applicator, alternating cotton tip with wooden end
- Ability to distinguish between sharp and dull sensations

Abnormal

Absence of blink response; eyelid continuously in open position: due to fifth or seventh cranial nerve (pons) involvement; blindness

Absence of gag and swallow reflex; inability to swallow food or liquid: due to ninth or tenth cranial nerve (medulla) involvement

Babinski response: great toe dorsiflexes; other toes fan on foot of paralyzed side in CVA, and bilaterally in spinal cord injury (SCI)

(continued)
## PHYSICAL ASSESSMENT (continued)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Assess</strong> client to distinguish sharp and dull pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Temperature</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fill two test tubes with water, one hot, one cold</td>
<td>Ability to distinguish between hot and cold</td>
<td></td>
</tr>
<tr>
<td>Ask client to close eyes and touch client’s skin with test tubes</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Touch</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask client to close eyes</td>
<td>Ability to identify light touch—equal bilaterally</td>
<td></td>
</tr>
<tr>
<td>Stroke cotton wisp over client’s skin</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Positioning</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask client to close eyes</td>
<td>Ability to identify position or mimic position with other hand</td>
<td>Inability to determine direction of movement: may be due to posterior column or peripheral nerve disease</td>
</tr>
<tr>
<td>Grasp client’s finger with your thumb and index finger</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Move client’s finger up and down</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask client to identify direction finger is moving</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Repeat with great toe</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Vital Signs</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assess temperature</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If client is semiresponsive or nonresponsive, take rectal, axillary, or tympanic temperature</td>
<td>Ability to maintain normal body temperature (approximately 98.6°F, or 37°C)</td>
<td>Inability to maintain normal temperature: may be due to damage to hypothalamus</td>
</tr>
<tr>
<td>If rectal temperature is contraindicated or there are signs of increased ICP, use alternate method.</td>
<td></td>
<td>No sweating below level of injury; due to spinal cord injury</td>
</tr>
<tr>
<td><strong>Assess apical and radial pulses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note character of pulses</td>
<td>Regular rhythm</td>
<td>Hypothermia</td>
</tr>
<tr>
<td>Count heart rate</td>
<td>Rate 60–100 BPM</td>
<td>Fast heart rate due to decreased blood volume, arrhythmia, heart failure, fever, medulla dysfunction</td>
</tr>
<tr>
<td>Count radial pulse rate</td>
<td>Apical and radial rates are equal</td>
<td>Irregular rhythm with premature beats due to hypoxia, cardiac irritability, or electrolyte imbalance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pulse deficit due to premature beats or ineffectual cardiac contraction.</td>
</tr>
</tbody>
</table>
**Assessment**

Assess **respiration**
Assess rate and pattern of breathing

Monitor arterial blood gases if signs of respiratory imbalances occur

**Normal**
Regular rate: 12–20 breaths per minute

**Abnormal**
Cheyne–Stokes (rhythmic increase in depth of breathing followed by period of apnea) may be due to deep cerebral or cerebellar lesion or condition altering cerebral perfusion
Central neurogenic (sustained) hyperventilation due to upper brain stem involvement
Ataxic (Biot’s) breathing unpredictably irregular, due to lower brain stem involvement

Alterations in pH and Pco₂ values indicate respiratory imbalances:
- pH below 7.35 and Pco₂ above 45: sign of respiratory acidosis (hypoventilation)
- pH above 7.45 and Pco₂ below 35: sign of respiratory alkalosis (hyperventilation)

HCO₃ above 26 indicates metabolic compensation for chronic respiratory acidosis (hypoventilation)

**Assess blood pressure**
Position neurologic clients in low- to semi-Fowler’s position

Normal pressure (range <120/<80)

**Korotkoff’s Sound Phases for Blood Pressure**

Phase I: The pressure level at which the first faint, clear tapping sounds are heard. The sounds gradually increase in intensity as the cuff is deflated. This phase coincides with the reappearance of a palpable pulse (systolic sound).

Phase II: That time during cuff deflation when a murmur or swishing sounds are heard.

Phases III: The period during which sounds are crisper and increase in intensity.

Phase IV: That time when a distinct, abrupt, muffling of sound (usually of a soft, blowing quality) is heard (diastolic sound in children or physically active adults).

Phase V: That pressure level when the last sound is heard and after which all sound disappears (second diastolic sound).

**Blood Pressure Classification**

<table>
<thead>
<tr>
<th>Blood Pressure</th>
<th>Systolic</th>
<th>Diastolic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120</td>
<td>&lt;80</td>
</tr>
<tr>
<td>Pre HBP</td>
<td>120 to 139</td>
<td>80 to 89</td>
</tr>
<tr>
<td>Stage I HBP</td>
<td>140 to 159</td>
<td>90 to 99</td>
</tr>
<tr>
<td>Stage II HBP</td>
<td>160 and higher</td>
<td>100 and higher</td>
</tr>
</tbody>
</table>

Source: American Heart Association, 1996.

ASSESSMENT OF THE HEAD AND NECK

The names of the regions of the head are derived from the bones that form the skull. Knowing the names of the bones and regions of the skull can assist in describing the location of the physical findings.

An understanding of the function of each lobe of the brain allows the nurse to be able to identify potential client problems when an injury occurs to that portion of the brain.

The brain comprises three segments: the brain stem, cerebrum, and the cerebellum. There are 12 cranial nerves, which are discussed later in this chapter, and 31 pairs of spinal nerves with dorsal and ventral roots.

The brain stem is divided into four sections: The diencephalon comprises the thalamus, which screens and relays sensory impulses to the cortex, and the hypothalamus, which regulates the autonomic nervous system, stress response, sleep, appetite, body temperature, water balance, and emotions. The midbrain is responsible for motor coordination and conjugate eye movements. The pons controls involuntary respiratory reflexes and contains projection tracts between the spinal cord, medulla, and brain. The medulla contains cardiac, respiratory, vomiting, and vasomotor centers. In addition, all afferent and efferent nerve tracts must pass between the spinal cord and brain through the medulla.

The cerebral hemispheres have an outer layer formed by cellular gray matter, called the cerebral cortex. The two cerebral hemispheres are divided into four major lobes. The frontal lobe controls emotions, judgments, motor function, and the motor speech area. The parietal lobe integrates general sensations; interprets pain, touch, and temperature; and governs discrimination. The temporal lobe contains the auditory center and sensory speech center. The occipital lobe controls the visual area. The cerebellum coordinates muscle movement, posture, equilibrium, and muscle tone.

The 12 cranial nerves are summarized in Table 11–2. The 2nd through 12th nerves arise from the brain stem. The cranial nerves are 12 pairs of parasympathetic nerves with their nuclei along the brain stem.

● Lobes of the brain.

● Brain segments and cranial nerves.

● Bones that form the skull.
### TABLE 11–2 CRANIAL NERVES AND THEIR FUNCTION

<table>
<thead>
<tr>
<th>Cranial Nerve</th>
<th>Function</th>
<th>Testing Cranial Nerves</th>
</tr>
</thead>
<tbody>
<tr>
<td>I Olfactory</td>
<td>Sensory nerve</td>
<td>Recognizes odor in each nostril separately (e.g., coffee)</td>
</tr>
<tr>
<td>II Optic</td>
<td>Sensory nerve: conducts sensory information from the retina</td>
<td>Demonstrates visual acuity: can read newsprint</td>
</tr>
<tr>
<td>III Oculomotor</td>
<td>Motor nerve: controls four of the six extraocular muscles; raises eyelid and controls the constrictor pupillae and ciliary muscles of the eyeball</td>
<td>Responds to light: pupils constrict; moves eyes medially; elevates upper eyelid</td>
</tr>
<tr>
<td>IV Trochlear</td>
<td>Motor nerve: controls the superior oblique eye muscle</td>
<td>Move eyes to the right, up then down, and to the left</td>
</tr>
<tr>
<td>V Trigeminal</td>
<td>Mixed nerve with three sensory branches and one motor branch: the ophthalmic branch supplies the corneal reflex</td>
<td>Demonstrates normal facial sensation; clenches teeth with no lateral jaw deviation; blinks as wisp touched to cornea</td>
</tr>
<tr>
<td>VI Abducens</td>
<td>Motor nerve: controls the lateral rectus muscle of the eye</td>
<td>Moves eyes laterally</td>
</tr>
<tr>
<td>VII Facial</td>
<td>Mixed nerve: anterior tongue receives sensory supply, motor supply to glands of nose, palate lacrimal submaxillary, and sublingual; motor branch supplies hyoid elevators and muscles of expression and closes eyelid</td>
<td>Elevates eyebrows; puffs cheeks; recognizes tastes (sugar, salt)</td>
</tr>
<tr>
<td>VIII Acoustic</td>
<td>Sensory nerve with two divisions: hearing and semicircular canals</td>
<td>Hears whisper with each ear separately</td>
</tr>
<tr>
<td>IX Glossopharyngeal</td>
<td>Mixed nerve: motor innervates parotid gland; sensory innervates auditory tube and posterior portion of taste buds</td>
<td>Demonstrates gag reflex to tongue blade when touched to back of tongue</td>
</tr>
<tr>
<td>X Vagus</td>
<td>Mixed nerve: motor branches to the pharyngeal and laryngeal muscles and to the viscera of the thorax and abdomen; sensory portion supplies the pinna of the ear, thoracic, and abdominal viscera</td>
<td>Same as IX</td>
</tr>
<tr>
<td>XI Accessory</td>
<td>Motor nerve: innervates the sternocleidomastoid and trapezius muscles</td>
<td>Shrugs shoulders</td>
</tr>
<tr>
<td>XII Hypoglossal</td>
<td>Motor nerve: controls tongue muscles</td>
<td>Sticks tongue out in midline without deviation</td>
</tr>
</tbody>
</table>

### HEAD AND NECK ASSESSMENT

**Eye Assessment**

*Note visual acuity by observing client performance of activities of daily living.*

Factors influencing visual acuity include client’s previous status and age.

**Note** exact location, size, and color of any **external lesions**

Palpate for mobility and firmness

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adequate performance of activities of daily living</td>
<td>Age-related macular degeneration (AMD)</td>
</tr>
<tr>
<td>Appropriate responses to environment</td>
<td>Hyperopia (farsightedness)</td>
</tr>
<tr>
<td>No external lesions</td>
<td>Myopia (nearsightedness)</td>
</tr>
<tr>
<td></td>
<td>Cataract (opacification of the lens)</td>
</tr>
<tr>
<td></td>
<td>Enucleation (loss of an eye): may have prosthesis in place</td>
</tr>
<tr>
<td></td>
<td>Circumocular ecchymosis: may be sign of basal skull fracture</td>
</tr>
<tr>
<td></td>
<td>Xanthelasma (small, yellowish, well-circumscribed plaques): may appear on eyelids of clients with</td>
</tr>
</tbody>
</table>

*(continued)*
### HEAD AND NECK ASSESSMENT (continued)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Note equality of eyelid movement</td>
<td>Eyelids are equal in movement</td>
<td>Ptosis (paralytic drooping of the upper eyelid)</td>
</tr>
<tr>
<td>Note color, consistency, amount, and origin of discharge from eyes</td>
<td>No discharge</td>
<td>Sty or hordeolum</td>
</tr>
<tr>
<td>Note internal lesions</td>
<td>No internal lesions</td>
<td>Thick white discharge; may be due to conjunctivitis</td>
</tr>
<tr>
<td>Assess differences between pupil size and reaction</td>
<td>Both pupils are the same size</td>
<td>Conjunctival or ciliary injection (dilatation of the blood vessels)</td>
</tr>
<tr>
<td>Note presence of hemorrhage</td>
<td></td>
<td>Anisocoria (indicates unequal pupil size): may be indicative of neurologic trauma or deficit</td>
</tr>
<tr>
<td>Observe for opacity of lens— cataract</td>
<td>No opacity noted</td>
<td>Corneal edema (very soft, movable mass that looks like raw egg white): frequently occurs in clients who have increased intracranial pressure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Arcus senilis (partial or complete whitish circle near the outer edge of the cornea); usually due to aging; does not affect vision</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Cataract present—one or both eyes</td>
</tr>
</tbody>
</table>

- **Note equality of eyelid movement**: Ensure the eyelids move symmetrically. Ptosis (paralytic drooping of the upper eyelid) can indicate a neurologic deficit.
- **Note color, consistency, amount, and origin of discharge from eyes**: Look for any discharge and note its characteristics. Thick white discharge may indicate conjunctivitis.  
- **Note internal lesions**: No internal lesions are normal. Conjunctival or ciliary injection (dilatation of the blood vessels) may be a sign of irritation.
- **Assess differences between pupil size and reaction**: Both pupils should be the same size. Anisocoria (unequal pupil size) may indicate neurologic trauma or deficit.  
- **Observe for opacity of lens—cataract**: No opacity is normal, while cataract present—one or both eyes may indicate lens opacity.

**Anatomy of the eye**

- **Eyelids**: Equal movement.
- **Discharge**: Color, consistency, amount, and origin.
- **Internal lesions**: Conjunctival or ciliary injection.
- **Pupil size and reaction**: Both pupils the same size.
- **Hemorrhage**: Presence or absence.
- **Opacity of lens—cataract**: No opacity noted, cataract present—one or both eyes.
Ear Assessment

Note auditory acuity by asking client to indicate if he or she hears normal sounds as you make them.

Note exact size, color, and location of any external lesions.
Palpate lesions for mobility and firmness.
Examine tympanic membrane using an otoscope.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ear Assessment</td>
<td>Adequate responses to normal sounds</td>
<td>Deafness or impaired hearing: excess cerumen in auditory canal</td>
</tr>
<tr>
<td></td>
<td>Auditory changes due to aging</td>
<td>Abnormal sounds in the ears (ringing or buzzing) may be caused by ototoxic drugs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Battle’s sign (ecchymosis behind the ear): may be sign of basilar skull fracture</td>
</tr>
<tr>
<td></td>
<td></td>
<td>White patches show prior infections: yellow or red patches may be infection of middle ear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bulging membrane may indicate increased pressure in middle ear</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Depressed membrane may indicate vacuum due to blocked eustachian tube.</td>
</tr>
</tbody>
</table>

Note color, quantity, and consistency of any discharge from the ears.
Test clear fluid for glucose using a Labstix.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>No discharge</td>
<td>Redness, swelling, and pain may be signs of otitis externa</td>
</tr>
<tr>
<td>Wax buildup</td>
<td>Cerebrospinal fluid leak: may be due to head injury. If drainage is blood and CSF, it will develop a “halo” with a reddish area in the center surrounded by a whitish circle if placed on white material.</td>
</tr>
<tr>
<td>Glucose test negative</td>
<td>Perforation of tympanic membrane: serosanguineous or purulent drainage</td>
</tr>
</tbody>
</table>

Glucose test of clear drainage is positive if CSF.

(continued)
### HEAD AND NECK ASSESSMENT (continued)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nose Assessment</strong></td>
<td>Regular breathing with mouth closed</td>
<td>Breathing through the mouth only: furuncles may occlude breathing</td>
</tr>
<tr>
<td></td>
<td>Breathing through nonoccluded nostril</td>
<td>Obstruction in the nose due to deviated nasal septum, swelling of the nasal turbinates, or excessive mucus secretions</td>
</tr>
<tr>
<td>Note color, quantity, and</td>
<td>Minimal discharge</td>
<td>Cerebrospinal fluid leak (fluid tests positive for glucose with Labstix)</td>
</tr>
<tr>
<td>consistency of any discharge</td>
<td></td>
<td>Copious, watery-to-thick, mucopurulent discharge: may be due to acute rhinitis</td>
</tr>
<tr>
<td>from the nose</td>
<td></td>
<td>Excessive buildup of mucous secretions</td>
</tr>
<tr>
<td><strong>Mouth and Lip Assessment</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Note size, color, and location of any external lesions</td>
<td>No external lesions</td>
<td>Dehydrated mouth or lips</td>
</tr>
<tr>
<td>Palpate for mobility and firmness</td>
<td></td>
<td>Fissures</td>
</tr>
<tr>
<td>Note size, color, and location of any internal lesions</td>
<td>No internal lesions</td>
<td>Pressure sores</td>
</tr>
<tr>
<td>Palpate for mobility and firmness</td>
<td></td>
<td>Necrosis</td>
</tr>
<tr>
<td><strong>Neck Assessment</strong></td>
<td>Occasional small, mobile, discrete, nontender lymph nodes</td>
<td>Enlarged tender immobile nodes</td>
</tr>
<tr>
<td>Note any lesion or swelling in the neck</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ask client to relax and flex neck slightly</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palpate the neck, using the pads of your fingers to move the skin and underlying tissues</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### ASSESSMENT OF THE SKIN AND APPENDAGES

The skin is the body's first line of defense against disease and injury. It is made up of three layers: the epidermis, the dermis, and the subcutaneous tissues.

The epidermis is divided into two avascular, or bloodless, layers: an outer layer that consists of dead keratinized cells and an inner layer that consists of live cells where keratin and melanin are formed. The dermis contains blood vessels, connective tissue, sebaceous glands, and some of the hair follicles. The subcutaneous tissues contain the remainder of the hair follicles, fat, and the sweat glands.

Hair, nails, sweat glands, and sebaceous glands are appendages of the skin. There are two types of sweat glands: eccrine and apocrine. Eccrine glands are distributed over most of the body except for the palms and soles. These glands help control body temperature through their sweat production. The apocrine glands are found mainly in the axillary and genital areas and are stimulated by emotional stress. Bacterial decomposition by apocrine sweat glands causes adult body odor.

The nail body is made up of dead keratinized cells. Nail production occurs at the nail root. Underlying vessels give the nail its pink color.

![Anatomy of the skin.](image)
SKIN ASSESSMENT

Assessment

Normal
Pink, tan, or brown, depending on the client’s basic skin color
Oral mucous membrane: moist, pink
Conjunctiva: moist, pink
Nailbeds: pink

Abnormal
Pallor (decrease in color)
Example: anemia from acute blood loss (hemorrhage), renal failure, dietary deficiencies, or arterial insufficiency
Jaundice (icterus): due to the presence of conjugated or unconjugated bilirubin in the blood and tissues; appears most frequently in the face and sclera; seen best under natural light
Example: liver disease
Cyanosis (blue, bluegray, or purple discoloration of the skin and mucous membranes): caused by hypoxia, a result of an increased amount of reduced hemoglobin
Peripheral: seen in nailbeds and earlobes
Example: vasoconstriction, venous insufficiency
Central: seen in nailbeds, lips (circumoral), and oral mucosa
Erythema (redness of the skin): caused by capillary congestion; occurs with inflammation or infection; usually a local finding

Note pigmentation
Discolored spots may be due to normal aging

Note turgor and mobility
Smooth and elastic

Pinch skin over the sternum
Resilient and supple
If the fold persists, skin turgor is poor

Assess for edema
Press finger firmly for 5 seconds into skin on top of foot or inner ankle bone
Resilient and no depression remains after pressure released
Pitting edema: excess interstitial fluid
Example: congestive heart failure, renal failure, cirrhosis of the liver, venous stasis

Note color of the skin by assessing the oral mucous membranes, the conjunctiva, and the nailbeds

Check quality of the skin.
**SKIN ASSESSMENT (continued)**

**Assessment**

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
</table>

Note **moistness** and **temperature** of the skin

- Warm and dry
- Cool and moist (cold and clammy): may be due to shock states
- Abnormally dry: may be due to dehydration, decreased sebaceous gland secretions, or the excessive use of soap
- Warm (hot) and moist due to temperature elevation
- Cool and moist (cold and clammy): may be due to shock states
- Abnormally dry: may be due to dehydration, decreased sebaceous gland secretions, or the excessive use of soap

Assess for **sensation**—response to external stimuli

- Feels touch, sensitive to heat and cold and pressure
- Absence of touch or pain sensation
- Example: spinal cord injury or nerve damage
- Diminished heat and cold sensation
  - Example: peripheral vascular disease
- Itching and tingling
  - Example: peripheral vascular disease, peripheral neuropathy, allergy

Note **lesions** on the skin

- Physical characteristics include color, elevation, shape, mobility, and contents
- No lesions present
- Macules (flat localized changes in color)
  - Example: petechiae, first-degree burns, purpura
- Papules, plaques, nodules (solid, elevated, varying in size)
  - Example: psoriasis, xanthomas
- Cancerous lesions
  - Example: Basal cell epithelioma—small, smooth papule with atrophic center
  - Melanoma—pigmented tumor; may arise from a blue-black mole
  - Squamous cell—macules with indistinct margins; surface may be crusted
  - Wheals (elevated, circumscribed, transient)
    - Example: urticaria, insect bites

Vesicles and bullae (clear, fluid-filled pockets between skin layers)

- Example: second-degree burns
- Pustules (vesicles or bullae filled with purulent exudate)
  - Example: furuncles, acne

Check client for edema.

Grading pitting edema.

<table>
<thead>
<tr>
<th>2 mm</th>
<th>4 mm</th>
<th>6 mm</th>
<th>8 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1+</td>
<td>2+</td>
<td>3+</td>
<td>4+</td>
</tr>
</tbody>
</table>
**ASSESSMENT OF THE CHEST: LUNGS, AND HEART**

The chest, or thorax area, extends from the base of the neck to the diaphragm. The overall shape of the thorax should be elliptical, although deformities such as barrel chest, pigeon chest, or funnel chest do occur. Total assessment includes the external aspect: the nurse should observe for movement, posture, shape, and symmetry, especially of the breast and axilla area, and the internal components of the lungs and the heart.

The lungs anteriorly extend from 2 to 4 cm above the inner third of the clavicle to the eighth rib at the midaxillary line and the sixth rib at the midclavicular line.

Posteriorly the lungs extend from the third thoracic spinous process and descend to the tenth process or, on deep inspiration, to the twelfth process.

Chest assessment begins with inspection, proceeds to palpation, and then to auscultation. Breath sounds of clients differ due to the depth of breathing, underlying disease, or obesity. Because of these differences, it is difficult to compare the breath sounds of one client with another. The basic principle to remember when auscultating the lungs is to do a comparison between the right and left lung. To make these comparisons, begin auscultating at the apices of one lung, alternating sides as you work down through both lungs. By comparing similar areas in both lungs, you can note changes and determine causes for these changes more easily.

Examination of the chest usually proceeds from posterior to anterior. For posterior assessment of the lungs, place the client in an upright sitting position with shoulders pulled forward. For anterior assessment, the client can be sitting or supine (especially if female). If the client is lying on his or her side, the lung closest to the bed is mechanically compressed, and true lung sounds cannot be heard. Ask the client to breathe a little deeper than usual through the mouth. Breathing through the nose produces extra sounds that mask true lung sounds.

The heart is located directly behind the sternum, with the left ventricle projecting into the left chest. The heart is usually thought to be in the left chest for two reasons: the left ventricle produces the most movement (ventricular contraction), and three of the valve sound areas are located to the left of the sternum.

The action of the heart should be assessed both proximally and distally. Proximal assessment involves evaluating heart sounds, heart rate, and rhythm to obtain information about the mechanical activity of the heart. Distal assessment involves evaluating the peripheral pulses to obtain information about the effectiveness of the heart’s pumping action.

One method for assessing heart sounds is to start at the aortic area, moving slowly across to the pulmonic area, down to the tricuspid area, and over to the mitral area. This same general progression can also be used in reverse, starting at the mitral area and progressing up to the aortic area. Most clinicians begin...
the assessment at the mitral area, which is the point of maximum impulse and where the apical pulse is the loudest.

The most important point to remember in heart assessment is to use the same method every time, repeating the same steps in the same sequence. By using one systematic approach, you learn how to compare the different sounds more easily and not neglect to listen to all areas on the chest. Breast assessment should include observing for lumps, drainage, dimpling of breast tissue, and presence of asymmetry. The client should also be asked if she has noticed any recent changes.

**CHEST ASSESSMENT**

**Assessment**

**Chest Assessment**

<table>
<thead>
<tr>
<th>Note respiratory rate—increase may be due to fever, pain, anxiety</th>
</tr>
</thead>
<tbody>
<tr>
<td>A normal or increased rate does not assume a normal tidal volume</td>
</tr>
<tr>
<td>Clients may have an increased rate to compensate for decreased tidal volume, but the resultant minute volume is still not sufficient. (Normal minute volume is 6–8 L/minute.)</td>
</tr>
<tr>
<td>Increased depth: due to neurologic disease, intracranial pressure (ICP) from trauma, drug overdose, exertion, fear, or anxiety</td>
</tr>
<tr>
<td>Decreased depth: due to neurologic disease, ICP from trauma, drug overdose, respiratory disease, pneumothorax, or pain</td>
</tr>
</tbody>
</table>

**Note the general appearance of the chest and movement when client breathes**

| Straight spine, level shoulders |
| Relaxed breathing: rib cage moves symmetrically with respirations |
| Breaths sitting forward with arms on pillows or overbed table (present with emphysema) |
| Uses accessory muscles (i.e., scalene, trapezius, sternocleidomastoid, pectoralis, or intercostal) |

● Posterior relationship of lung lobes to skeletal structures.
Assessment

Note shape of chest

Normal
Anterior–posterior dimension is half of lateral dimension

Abnormal
Anterior–posterior dimension increased in emphysema (barrel chest)
Deformities such as scoliosis (lateral curvature), kyphosis (forward curvature), or kyphoscoliosis
Horizontal is common in COPD
Bulging of interspaces during exhalation with retraction on inhalation (present with asthma and emphysema)
Chest tilted to one side when client sits or stands: may be due to pain in ribs or chest wall or trauma (i.e., fractured ribs or surgery such as a thoracotomy)
Flail chest: occurs when four or more ribs are broken; area collapses inward during inhalations and outward on exhalation

Note position of ribs

Normal
Slant downward

Abnormal

Measure chest excursion for range and symmetry: place hands parallel to 10th rib (under scapulae) with thumbs beside spine. Bunch up fold of skin pushing thumbs medially. Ask client to inhale
For anterior assessment, place hands over lower thorax, push medially, then have client inhale. Note equidistant lateral movement of hands

Tactile and Vocal Fremitus

Tactile fremitus (vibrations felt on surface of chest as sound passes through tissue)
Palpate upper thorax and ask client to say “ninety-nine”; vibrations detected as hands move down thorax

Normal sounds: found with bronchitis or pulmonary edema
Increased sounds: heard when lung is filled with fluid-consolidation (pneumonia) or tumors
Absent sounds: atelectasis or pleural effusion
Asymmetric sounds: abnormal
Decreased sounds: obesity, emphysema, pneumothorax, and possible asthma

On inhalation, the thumbs move equidistant away from midline indicating equal expansion

Palpation for tactile fremitus.
CHEST ASSESSMENT (continued)

Assessment

Lung/Respiratory Assessment

Complete a general assessment of the lungs
Respiratory rate
Respiratory depth or volume

Auscultation: note location and quality of lung sounds

Note presence of adventitious (extra) sounds, such as rales/crackles, wheezes, and rhonchi, or pleural friction rub

Normal

12–20 respirations/minute
Normal depth is equal to about 500 mL

Abnormal

Increased respiratory rate: may be due to increased metabolic needs (fever), mechanical injury, surgery, or trauma to chest wall

Discontinuous Sounds:

Crackles (rales) are due to sudden opening of closed airways, indicating hypoventilation; usually heard as soft, high-pitched scratching sounds, like hair strands rubbing together at end of inspiration. Heard in dependent areas of bedridden clients or in early CHF. May be collapsed or fluid-filled alveoli. Simulate by rubbing hair together in front of your ear.

Continuous Sounds:

Wheezes are produced by air passing through airways narrowed by edema, spasm or mucus; may be heard on inspiration but more often louder on expiration; high-pitched and musical.

Rhonchi are low-pitched rumbling, coarse; sounds heard on inhalation and exhalation. Fluid-blocked airways—may be cleared with coughing.

Sibilant wheezes are high-pitched, musical sounds; may be caused by asthma, increased secretions, or edema.

Pleural friction rub is produced when inflamed pleurae rub together in the absence of normal pleural fluid; localized, high-pitched, harsh, and scratchy; frequently transient; may be heard on inspiration and expiration.

Stridor is an inspiratory wheeze heard in the neck due to partial obstruction at upper airway—tracheal or laryngeal level.

Stethoscope placement sites for posterior (left) and anterior (right) auscultation of breath sounds. Follow arrows for sequence of examination.

Listen to posterior breath sounds.
Assessment
Evaluate breath sounds

Bronchovesicular breath sounds
Heard over the mainstem bronchi below the clavicles and adjacent to the sternum, between scapulae

Vesicular (normal) breath sounds
Heard over lung parenchyma (heart will mask breath sounds on the left side)
Lungs extend anteriorly to the sixth intercostal space

Bronchial breath sounds
Heard over the trachea above the sternal notch
Lungs extend posteriorly to T10 on expiration, to T12 on deep inspiration

Heart Assessment
Evaluate atrioventricular heart sounds ($S_1$ heart sound). Use diaphragm of stethoscope—best for picking up high-pitched sounds
Mitral value sounds
Heard best at left, fifth intercostal space at, or medial to, the midclavicular line
Tricuspid valve sounds
Heard best at fifth intercostal space, left sternal border
Evaluate semilunar heart sounds ($S_2$ heart sounds)

Normal
Moderate to high pitch, with moderate amplitude
Hollow, muffled quality
Inspiration and expiration equal in duration

Abnormal
Bronchial or bronchovesicular sounds heard in the perimeter where vesicular sounds are expected indicate consolidation such as pneumonia. The client’s spoken and whispered words are also clearly heard by the examiner over consolidated lung areas
Breath sounds may be absent over areas of atelectasis, pneumothorax, or pleural effusion

Breath sounds are decreased (faint) with hypoventilation, early atelectasis, and COPD
Heart sounds not heard in the area prescribed (e.g., with left ventricular hypertrophy, mitral sound moves laterally)

Sounds altered with aortic stenosis (thrill) and hypertension (accentuated sound)

Auscultate heart sounds.
## CHEST ASSESSMENT (continued)

### Aortic valve sounds
Heard best at second intercostal space, right sternal border

### Pulmonic valve sounds
Heard best at second intercostal space, left sternal border

Evaluate presence of **diastolic heart sounds**

**Use bell of stethoscope**—best for picking up low-pitched sounds and gales. Place lightly on chest with client in left side lying position

**$S_3$ (ventricular gallop)**
Heard just after $S_2$, at the apex or at lower, left sternal border

**$S_4$ (atrial gallop)**
Heard just before $S_1$, at the apex or at lower, left sternal border

Assess for **heart murmurs**, heard between heart sounds

**Evaluate the apical pulse** when assessing for general heart rate and rhythm of contractions

**Auscultate at the apex of the heart** (left, fifth intercostal space at the midclavicular line)

**Palpate and view pulse on chest wall** if client’s chest wall is thin enough

**Assess for irregular apical pulse**

With another nurse, take apical and radial pulses simultaneously

**Compare beats per minute for both pulses**

### Normal
- Part of $S_2$ is louder than $S_1$ in this area. May be heard separately from aortic closure if client inhales deeply
- Quiet and low-pitched
- May be a physiologic finding in children and young adults
- Normal finding in elderly
- Faint sound
- Regular rhythm
- Heart rate: 60–100 beats/minute
- Moderate bradycardia common in well-trained athletes
- Mild tachycardia possible with stress, infection, or fever
- Equal apical and radial pulses = no pulse deficit

### Abnormal
- Accentuated with pulmonary hypertension
- Murmurs originating from stenotic valves
- Almost always signifies heart failure in client over age 40
- Heard in older individual with hypertension
- Faint or loud enough to be heard without a stethoscope
- Occurs during systole or diastole (diastolic murmurs are almost always pathologic)—found in older clients with heart disease or infants and children with congenital heart defects
- Irregular rhythm (dysrhythmia) may be regularly irregular or irregularly irregular (i.e., atrial fibrillation)
- Bradycardia (less than 60 beats/minute)
- Tachycardia (more than 100 beats/minute)
- Fewer beats at the radial area may indicate an irregular apical pulse, producing ineffective pumping

### CHEST ASSESSMENT (continued)

### Assess for diastolic heart sounds

Evaluate the **apical pulse** when assessing for general heart rate and rhythm of contractions

Auscultate at the apex of the heart (left, fifth intercostal space at the midclavicular line)

Palpate and view pulse on chest wall if client’s chest wall is thin enough

Assess for **irregular apical pulse**

With another nurse, take apical and radial pulses simultaneously

**Compare beats per minute for both pulses**
Assessment
Auscultate apical pulse and compare to carotid pulse

Normal
Two pulses are synchronous

Abnormal
Apical pulse greater than carotid pulse indicates a pulse deficit

Palpate peripheral pulses*: radial, brachial, femoral, popliteal, dorsalis pedis, posterior tibial (For special cases, after carotid surgery, palpate temporal pulse also)
Guidelines for palpating peripheral pulses:
- If pulse is not immediately palpable, examine adjacent area—pulse locations differ with clients
- Palpate weak pulses gently so that you do not obliterate pulse with too much pressure
- If you cannot differentiate your pulse from client’s pulse, check your radial or carotid pulse, or observe monitor pattern
- When peripheral pulses cannot be palpated, use a Doppler ultrasound stethoscope and grade according to scale

*See assessing peripheral pulses in Chapter 10, Vital Signs

ASSESSMENT OF THE ABDOMEN, SPLEEN, KIDNEY, LIVER AND GENITOURINARY TRACT

The abdomen extends from the diaphragm to the pelvis. Generally speaking, there are two body systems present in this area: the gastrointestinal system and the genitourinary system.

The gastrointestinal system begins at the mouth and consists of the esophagus, stomach, the small and large intestines, and associated organs that include the liver, pancreas, and spleen.

The urinary tract consists of the kidneys, ureters, bladder, and the urethra. The urinary tract should be assessed frequently and accurately because changes in urine production reflect changes in other body systems.
The most common way to assess the urinary tract is to note the quantity and quality of the urinary output. Some medications or foods produce unusual odors and colors in urine (e.g., sulfasalazine [Azulfidine] turns urine a yellow-orange color; asparagus gives urine a musty odor).

External male genitalia include the penis, the scrotum, and the testicles. External female genitalia include the vulva, the urethral orifice, and the vagina.

### ASSESSMENT OF THE ABDOMEN, LIVER, SPLEEN, KIDNEY, AND GENITOURINARY TRACT

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Abdomen</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Have client lie flat in bed</td>
<td>Abdomen flat from chest to pubis with concave indentation at umbilicus</td>
<td>Scaphoid (concave) abdominal contour: due to inadequate nutritional intake to meet caloric need or inadequate food absorption</td>
</tr>
<tr>
<td>At the client’s abdominal level, inspect the <strong>general contour</strong> of the abdomen</td>
<td></td>
<td>Distended abdomen: caused by gas and fluid accumulation due to lack of peristalsis, hemorrhage, or intestinal leakage after trauma (e.g., auto accident or surgery), or ascitic fluid (e.g., liver or cardiac failure)</td>
</tr>
<tr>
<td>Inspect for bruising around umbilicus and over flanks</td>
<td>No change of skin color around umbilicus or flanks</td>
<td>Acute abdomen</td>
</tr>
<tr>
<td>Observe for scars, stretch marks, dilated veins, presence of hernia</td>
<td>Correlate with health history</td>
<td>Dilated veins caused by liver disease</td>
</tr>
<tr>
<td>Assess <strong>circumference</strong> for intraabdominal hemorrhage or ascites by placing a tape measure around the largest circumference of the abdomen and drawing two lines around client’s entire abdomen, one line at the top of the tape measure, one line at the bottom of the tape measure; perform measurement when client exhales</td>
<td>No increase in abdominal circumference</td>
<td>Abdominal circumference increases steadily within 1–2 hours</td>
</tr>
<tr>
<td>Auscultate abdomen to assess presence and quality of <strong>bowel sounds</strong></td>
<td>Bowel sounds gurgle, about 5–30 per minute</td>
<td>Hyperactive bowel sounds: due to blood in GI tract, diarrhea, or to partial bowel obstruction (sounds become high-pitched and tinkling or come in “rushes,” followed by silence as obstruction progresses)</td>
</tr>
<tr>
<td>Place diaphragm of stethoscope firmly on right lower quadrant and count sounds for 1 minute</td>
<td>Varying frequency of sounds with clients and time of day (i.e., more sounds right before and after eating)</td>
<td>Bowel sounds hypoactive, quiet, and infrequent: may be due to peritonitis, paralytic ileus, or no obvious cause</td>
</tr>
<tr>
<td>Listen at all quadrants, near the center, for several minutes if sounds not heard initially</td>
<td>Decreased or absent bowel sounds after surgery</td>
<td>Absent bowel sounds: may be due to complete bowel obstruction or systemic illness</td>
</tr>
<tr>
<td></td>
<td>After general anesthesia, normal sounds in 1–2 days</td>
<td>After abdominal surgery, normal sounds in 3–5 days</td>
</tr>
</tbody>
</table>

Note: Following abdominal surgery, the return of GI function is determined by the (1) return of flatus, (2) bowel movement, (3) hunger, (4) no nausea or tolerance of oral feeding, (5) flat abdomen/nondistension, rather than the return of bowel sounds. (See Evidence-based rationale, p. 661.)
Assessment

Palpate abdomen to determine condition of abdominal muscles and organs beneath muscles.

Assist client to relax, lie flat in bed, and flex knees. Have client mouth-breathe.

Place your hand flat on client’s abdomen, holding your four fingers together and depressing ½ inch. Have client cough to determine any areas of abdominal tenderness.

Begin palpation at the pubis, moving upward. Palpate any problem areas last to minimize effects of discomfort.

Palpate all quadrants of abdomen to assess organs contained in each quadrant.

Superficial palpation: use slight pressure only with your fingers extended.

Deep palpation: indent the abdominal wall 4–5 cm—may use one hand over the other to apply pressure.

Liver

Palpate liver by placing left hand behind 11th and 12th ribs with right hand on right abdomen lateral to rectus muscle.

Normal

Soft, pliant musculature when relaxed

Cough does not produce pain in abdomen

No bulges felt

No masses felt

Liver

Normal liver (difficult to palpate) may feel like sharp ridge with smooth surface

Abnormal

Rigid, tender muscles/pain produced with cough: may be due to presence of muscle spasm, inflammation or infection (peritonitis)

Pain or tenderness with quick release of pressure indicates rebound tenderness suggesting peritoneal inflammation.

If hernia is suspected, have client raise head and shoulders and observe for abdominal bulge.

Masses felt with colon disease, vascular aneurysm, dilated bowel, distended bladder, or cancer

Tenderness may be due to inflammation (hepatitis)

Enlarged liver with nontender edge may be due to cirrhosis

<Palpate client’s abdomen.>

<Palpation of the liver.>

(continued)
ASSESSMENT OF THE ABDOMEN, LIVER, SPLEEN, KIDNEY, AND GENITOURINARY TRACT (continued)

**Assessment**  
**Spleen**  
Standing on client’s right side, palpate spleen. Place left hand under rib cage on left side and elevate rib cage. Press fingers of right hand into left costal margin area and ask client to take a deep breath. You should feel spleen move forward toward right hand.

**Urinary Tract Assessment**  
Assess the external urethra.  
Assess the quantity, color, odor, specific gravity, and pH of urine output.

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>A normal spleen is usually not palpable</td>
<td>Enlarged spleen (which can be palpated) occurs in acute infections such as mononucleosis</td>
</tr>
</tbody>
</table>

**Assessment Normal Abnormal**

**Palpation of the spleen.**

**Orifice is pink and moist; clear, minimal discharge**  
Output: average 1200–1500 mL/24 hours, or 30–50 mL/hour—should equal oral and IV intake  
Burning or pain at urethral orifice: may indicate urinary infection  
Increased output: may indicate increased intake, diuresis, potential diabetes mellitus, or inappropriate antidiuretic hormone (ADH) response (e.g., diabetes insipidus)  
Frequent small amounts of urine output indicate urinary retention or urinary tract infection  
Decreased output: may indicate dehydration, acute nephritis, cardiac disease, renal failure, or excess ADH response (e.g., head injury)  
Cloudy (turbid): may indicate possible urinary tract infection  
Dark amber: may indicate very concentrated urine due to dehydration  
Dark amber to green: may indicate hepatitis or obstructive jaundice  
Foul-smelling: may indicate urinary tract infection, drug or specific food ingestion (e.g., asparagus)  
Sweet odor: may indicate acetone from ketoacidosis (i.e., diabetes mellitus)  
Specific gravity: 1.003–1.030  
Specific gravity of more than 1.030: indicates dehydration  
Constant specific gravity of 1.010, regardless of fluid intake: indicates renal failure  
Acidic pH—when below 6.0 may indicate starvation or acidosis  

**Clear, yellow-amber color (vegetarians may have slightly cloudy urine)**

**Slight odor (ammonia-like odor indicates that specimen has been sitting for some time)**

**pH range from 4.5–7.5; average is 6–7**
Assessment

Assess for blood in urine using Hemastix or Labstix

Palpate for bladder distention

Kidney Assessment
Assess (palpate) for kidney pain when palpated, client feels no pain When palpated, client feels no pain

Assessment (palpate) for kidney pain on either side of vertebrae column between last thoracic and 3rd lumbar vertebrae
Use indirect percussion to further assess the kidneys

Genital Assessment

Visually examine the male genitalia
Retract the foreskin of the uncircumcised penis to note cleanliness, any lesions, and discharge
Lift scrotum to inspect for rash
Noting groin area, ask client to strain down

Using thumb and first two fingers, gently palpate each testicle for size, shape, and consistency
Visually examine female genitalia
Assess for signs of sexual abuse

Normal

No blood present

Not normally palpated

Clean

No odor

No lesions

No discharge

Size of penis and scrotum vary

Urethra opens midline of the tip of the glans

No bulges in groin area

Two testicles in the scrotum

No nodules felt, no swelling or tenderness

Clean

No odor

No signs

Abnormal

Alkaline pH greater than 7.0:
indicates metabolic alkalosis or alkaline ash diet (e.g., vegetarian)

Smookey to mildly pink-tinged to grossly red-colored urine: indicates blood in urine

Distended bladder (firm, round mass) accompanied by discomfort and urge to void: indicates urine retention (common following surgery, where catheter is not used)

Severe pain, discomfort, or tenderness in the flank region (below rib cage posteriorly and lateral to spine): indicates kidney infection, stones, or kidney disease. Kidney enlargement may indicate neoplasm or polycystic disease

Use of indirect percussion will identify pain.

(continued)
### ASSESSMENT OF THE ABDOMEN, LIVER, SPLEEN, KIDNEY, AND GENITOURINARY TRACT (continued)

#### Assessment

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess for lesions or discharge or complaints of itching.</td>
<td>Throat; thin, white, yellowish, or green discharge: may indicate trichomoniasis.</td>
</tr>
<tr>
<td>Menstrual flow.</td>
<td>Thick, white, and curdy discharge with pruritus may indicate candidiasis.</td>
</tr>
<tr>
<td>Lochia (normal discharge after delivery).</td>
<td>Lesions could indicate syphilitic chancre, herpes infection, venereal wart, or carcinoma of vulva.</td>
</tr>
<tr>
<td>No lesions.</td>
<td>No pruritus candidiasis.</td>
</tr>
<tr>
<td>No pruritus.</td>
<td>Lesions: could indicate syphilitic chancre, herpes infection, venereal wart, or carcinoma of vulva.</td>
</tr>
</tbody>
</table>

#### Breast Assessment

Inspect size, symmetry, and contour of breasts, comparing one side with the other. Place client in sitting position. Have client remove clothing from waist up. Have client raise arms over her head. **Color, edema, and venous pattern of skin**

- Normal skin color with darker area surrounding nipples.
- No edema or prominent vessels.

- Erythema: indicates infection or inflammatory carcinoma.
- Edema or increased venous prominence: indicates carcinoma.

Size varies with each client. Breasts should be fairly equal in size and contour and symmetric in position.

- Masses, skin thickening, dimpling, or flattened areas: indicate possible cancer.

Inspect size and shape of nipples. Note direction in which they point, and any rashes or discharge. To palpate breasts, position client supine or on side. Place a pillow beneath the shoulder of the side being examined. Using three fingers in a circular motion, compress breast tissue gently against chest wall. Systematically examine entire breast, top to bottom, moving medially to laterally into the axilla. **Palpate nipples**

- Soft, elastic tissue with mobile nodules.
- Simple inversion of nipples is common.

- Flattening, nipple retraction, or axis deviation of nipple points: may be due to fibrosis associated with cancer.
- Ulcerations of nipples and areola: may be due to Paget’s disease.
- Discharge: may not be malignant but should be observed closely.
- Mobile nodules may indicate cystic disease.
- Hard nodules fixed to skin or underlying tissue may indicate cancer.

When nodules are present, describe location and quadrant of breast where found. Note size in centimeters. Describe consistency and shape. Note tenderness and mobility of nodule in relationship to underlying tissue.

#### Palpate nipples

Compress nipple and areola between thumb and index finger to inspect for discharge. Note elasticity. Observe for erection of nipple with palpation.

- No discharge or small amount of milky discharge in previously nursing mother.
- Elastic, no retraction of nipple.

- Bloody discharge: may indicate papilloma.
- Loss of elasticity: indicates possible cancer.
- Inversion, flattening, or retraction: may indicate cancer.
Assessment

**Testicular Examination**

Inspect pubic hair, penis and urinary meatus

Palpate scrotum, testes, and observe shape and contour. Observe for swelling, redness, and distended veins or lesions.

Inguinal area

**Normal**

- No lesions, discharge or itching
- Should be pear-shaped with left side lower than right; no masses; testes non-tender, smooth and solid
- Flat, no evidence of masses

**Abnormal**

- Lesions may indicate cancer, discharge, infection; itching, small spots, pubic lice
- Swelling may indicate orchitis or scrotal edema; scrotal hernia or testicular torsion; varicocele
- Mass may be related to inguinal hernia or cancer

**MENTAL HEALTH ASSESSMENT**

The mental assessment is completed throughout the physical assessment during the history taking. It is not generally considered a separate entity. Mood, memory, orientation, and thought processes can be evaluated while obtaining the health history. Nutritional preferences and restrictions can be determined as a part of a client care plan and may or may not be included in the general client assessment.

A spiritual assessment can be obtained as a part of the health history, although specific sociocultural beliefs may need to be ascertained separately. The purpose of a spiritual assessment is to facilitate the client adapting to the hospital environment and to help the staff understand stressors the client may be experiencing as a result of belief systems.*

The purpose of a mental status assessment is to evaluate the present state of psychologic functioning and to monitor safety needs of the client. It is not designed to make a diagnosis; rather it should yield data that contribute to the total picture of the client as he or she is functioning at the time the assessment is made.

The specific rationale for completing a mental status assessment is:

- To collect baseline data to aid in establishing the cause, diagnosis, and prognosis
- To evaluate the present state of psychologic functioning
- To evaluate changes in the individual’s emotional, intellectual, motor, and perceptual responses
- To determine the client’s ability to cope with the present situation
- To assess the need and availability of support systems
- To ascertain if some seemingly psychopathologic response is, in fact, a disorder of a sensory organ (i.e., a deaf person appearing hostile, depressed, or suspicious)
- To determine the guidelines of the treatment plan
- To document altered mental status for legal records

The initial factors that the nurse must consider in completing a mental status assessment are to correctly identify the client, the reason for admission, record of previous mental illness, present complaint, any personal history that is relevant (living arrangements, role in family, interactional experience, history of alcoholism, domestic violence), family history if appropriate, significant others and available support systems, assets, and interests.

The actual assessment process begins with an initial evaluation of the appropriateness of the client’s behavior and orientation to reality. The assessment continues by noting any abnormal behavior and ascertaining the client’s chief verbalized complaint. Finally, the evaluation determines if the client is in contact with reality enough to answer particular questions that further assess the client’s condition.

**MENTAL STATUS**

**Assessment**

**General Appearance, Manner, and Attitude**

Assess **physical appearance**

**Normal**

- General body characteristics, energy level

**Abnormal**

- Inappropriate physical appearance, high or low extremes of energy

(continued)
MENTAL STATUS (continued)

Assessment

Note grooming, mode of dress, and personal hygiene

Note posture

Note speed, pressure, pace, quantity, volume, and diction of speech

Note relevance, content, and organization of responses

Expressive Aspects of Behavior

Note general motor activity

Assess purposeful movements and gestures

Assess style of gait

Consciousness

Assess level of consciousness

Thought Processes and Perception

Assess coherency, logic, and relevance of thought processes by asking questions about personal history (e.g., “Where were you born?” “What kind of work do you do?”)

Assess reality orientation: time, place, and person awareness

Normal

Grooming and dress appropriate to situation, client’s age, and social circumstance

Clean

Upright, straight, and appropriate

Moderated speed, volume, and quantity

Appropriate diction

Questions answered directly, accurately, and with relevance

Abnormal

Poor grooming

Inappropriate or bizarre dress or combination of clothes

Unclean

Slumped, tipped, or stooped

Tremors

Moderated speed, volume, and quantity

Accelerated or retarded speech and high quantity

Poor or inappropriate diction

Inappropriate responses, unorganized pattern of speech

Tangential, circumstantial, or out-of-context replies

Calm, ordered movement appropriate to situation

Overactive (e.g., restless, agitated, impulsive)

Underactive (e.g., slow to initiate or execute actions)

Repetitious activities (e.g., rituals or compulsions)

Command automation

Parkinsonian movements

Ataxic, shuffling, off-balance gait

Reasonably responsive with purposeful movements, appropriate gestures

Clear, understandable responses to questions

Attentiveness

Orderly progression of thoughts based in reality

Awareness of time, place, and person

Disoriented in time, place, person

Disordered thought forms

Autistic or dereistic (absorbed with self and withdrawn); abstract (absent-mindedness); concrete thinking (dogmatic, preaching)

Disorders of progression of thought; looseness, circumstantial, incoherent, irrelevant conversation, blocking

Delusions of grandeur or persecution: neologisms, use of words whose meaning is known only to the client

Echolalia (automatic repeating of questions)

No awareness of day, time, place, or person
Assessment

Assess perceptions and reactions to personal experiences by asking questions, such as “How do you see yourself now that you are in the hospital?” “What do you think about when you’re in a situation like this?”

Thought Content and Mental Trend

Assess degree of anxiety
Ask questions to determine general themes that identify degree of anxiety (e.g., “How are you feeling right now?” “What kinds of things make you afraid?”)

Assess ideation and concentration

Mood or Affect

Assess prevailing or variability in mood by observing behavior and asking questions, such as “How are you feeling right now?” Check for presence of abnormal euphoria
If you suspect depression, continue questioning to determine depth and significance of mood (e.g., “How badly do you feel?” “Have you ever thought of suicide?”)

Memory

Assess past and present memory and retention (ability to listen and respond with understanding or knowledge); ask client to repeat a phrase (e.g., an address)
Assess recall (recent and remote) by asking questions, such as “When is your birthday?” “What year were you born?” “How old are you?” “Who is the president of the United States now?”

Normal
Thoughtful, clear responses expressed with understanding of self

Abnormal
Altered, narrowed, or expanded perception illusions Depersonalization

Mild or 1+ level of anxiety in which individual is alert, motivated, and attentive

Moderate to severe (2+ to 4+) levels of anxiety

Ideas based in reality Able to concentrate

Ideas of reference Hypochondria (abnormal concerns about health) Obsessional Phobias (irrational fears) Poor or shortened concentration

Appropriate, even mood without wide variations high to low

Cyclothymic mood swings; euphoria, elation, ecstasy, depressed, withdrawn

May be sad or grieving but mood does not persist indefinitely

Flat or dampened responses Inappropriate responses Ambivalence

Alert, accurate responses Able to complete digit span Past and present memory appropriate

Hyperamnesia (excessive loss of memory); amnesia; paramnesia (belief in events that never occurred) Preoccupied Unable to follow directions

Good recall of immediate and past events

Poor recall of immediate or past events

Assessment Normal Abnormal (continued)
## MENTAL STATUS (continued)

### Assessment

<table>
<thead>
<tr>
<th>Judgment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess judgment, decision-making ability, and interpretations by asking questions, such as “What should you do if you hear a siren while you’re driving?” “If you lost a library book, what would you do?”</td>
<td>Ability to make accurate decisions</td>
<td>Poor judgment, poor decision-making ability, poor choice</td>
</tr>
<tr>
<td></td>
<td>Realistic interpretation of events</td>
<td>Inappropriate interpretation of events or situations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Awareness</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess insight, the ability to understand the inner nature of events or problems, by asking questions, such as “If you saw someone dressed in a fur coat on a hot day, what would you think?”</td>
<td>Thoughtful responses indicating an understanding of the inner nature of an event or problem</td>
<td>Lack of insight or understanding of problems or situations</td>
</tr>
<tr>
<td></td>
<td>Distorted view of situation</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Intelligence</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess intelligence by asking client to define or use words in sentences (e.g., recede, join, plural)</td>
<td>Correct responses to majority of questions</td>
<td>Incorrect responses to majority of questions indicate possible severe psychiatric disorders</td>
</tr>
<tr>
<td>Assess fund of information by asking questions, such as “Who is president of the United States?” “Who was the president before him?” “When is Memorial Day?” “What is a thermometer?” (Consider client’s cultural and educational background and his or her grasp of English)</td>
<td>Correct responses to majority of questions</td>
<td>Deteriorated or impaired cognitive processes</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sensory Ability</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess the five senses (i.e., vision, hearing, taste, feeling, and smell)</td>
<td>Able to perceive, hear, feel, touch appropriate to stimulus</td>
<td>Lack of response</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Suspicious, hostile, depressed</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Kinesthetic imbalance</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Developmental Level</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess developmental level compared with normal</td>
<td>Behavior and thought processes appropriate to age level</td>
<td>Wide span between chronologic and developmental age</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mentally retarded</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Lifestyle Patterns</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify addictive patterns and effect on individual’s overall health</td>
<td>Normal amount of alcohol ingested</td>
<td>High quantity of alcohol taken frequently</td>
</tr>
<tr>
<td></td>
<td>Smoking habits, number of years</td>
<td>Heavy smoker</td>
</tr>
<tr>
<td></td>
<td>Prescriptive medications</td>
<td>Addicted to illegal drugs</td>
</tr>
<tr>
<td></td>
<td>Adequate food intake for physical characteristics</td>
<td>Habituation medication; user of over-the-counter or legal medications</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Anorexic eating patterns</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Obese or overindulgence of food</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Coping Devices</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identify defense-coping mechanisms and their effect on individual</td>
<td>Conscious coping mechanisms used appropriately, such as compensation, fantasy, rationalization, suppression, sublimation, or displacement</td>
<td>Unconscious mechanisms used frequently, such as repression, regression, projection, reaction formation, insulation, or denial</td>
</tr>
<tr>
<td></td>
<td>Mechanisms effective, appropriate, and useful</td>
<td>Mechanisms inappropriate, ineffective, and not useful</td>
</tr>
</tbody>
</table>
## OBSTETRICAL ASSESSMENT

### Baseline Data

**Assess breasts and nipples**
- Contour and size
- Presence of lumps
- Secretions

**Assess abdomen**
- Contour and size
- Changes in skin color

**Linea nigra** (black line of pregnancy along midline of abdomen)
- Primiparas: coincidently with growth of fundus
- Multiparas: after 13–15 weeks' gestation

**Striae** (reddish-purple lines)
- On breasts, hips, and thighs during pregnancy
- After pregnancy, faint silvery-gray

**Scar, rashes, or other skin disturbances**
- Usually none present

**Fundal height** in centimeters (fingerbreadths less accurate): measure from symphysis pubis to top of fundus
- Fundus palpable just above symphysis at 8–10 weeks
- Halfway between symphysis and umbilicus at 16 weeks
- Umbilicus at 20–22 weeks

**Perineum:** assess for scars, lesions, or discharge

**Evaluate weight**

**Take vital signs, blood pressure (BP), temperature, pulse, and respiration (TPR)**

**Urine: sugar, protein, albumin**
- Negative for sugar, protein, and albumin throughout pregnancy
- 38%–47%
- 12–16 gm/dL

**Hematocrit (HCT)**
- 38%–47%

**Hemoglobin (Hgb)**
- 12–16 gm/dL

**Blood type and Rh factor**
- If Rh negative, father's blood should be typed
- If Rh positive, titers should be followed; possible RhoGAM at termination of pregnancy

**Pap smear**

**VD smears and screening**

### Antepartum Assessment

**Evaluate weight** to assess maternal health and nutritional status and growth of fetus

**Minimum weight gain during pregnancy:** 24 lbs
- Underweight: 28–42 lbs
- Obese: 15 lbs or more
- Normal weight gain: 25–35 to 40 lbs

**Inadequate weight gain:** possible maternal malnutrition

**Excessive weight gain:** if sudden at onset, may indicate preeclampsia; if gradual and continual may indicate overeating

(continued)
**OBSTETRICAL ASSESSMENT (continued)**

**Assessment**

<table>
<thead>
<tr>
<th>Evaluate blood pressure</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
</table>
| Fairly constant with baseline data throughout pregnancy | Increased: possible anxiety (client should rest 20 to 30 minutes before you take BP again)  
Rise of 30/15 above baseline data: sign of preeclampsia  
Decreased: sign of supine hypotensive syndrome. If lying on back, turn client on left side and take BP again |  
Large fundal growth: may indicate wrong dates, multiple pregnancy, hydatidiform mole, polyhydramnios, tumors  
Small fundal growth: may indicate fetal demise, fetal anomaly, retarded fetal growth, abnormal presentation or lie, decreased amniotic fluid |

| Evaluate fundal height | Drop around 38th week: sign of fetus engaging in birth canal  
Primipara: sudden drop  
Multipara: slower, sometimes not until onset of labor |  
Drop around 38th week: sign of fetus engaging in birth canal  
Primipara: sudden drop  
Multipara: slower, sometimes not until onset of labor |  
Drop around 38th week: sign of fetus engaging in birth canal  
Primipara: sudden drop  
Multipara: slower, sometimes not until onset of labor |

Determine fetal position, using **Leopold’s maneuvers**.

- Complete external palpations of the abdomen to determine fetal position, lie, presentation, and engagement

  - **First maneuver**: to determine part of fetus presenting into pelvis
  - **Second maneuver**: to locate the back, arms, and legs: fetal heart heard best over fetal back
  - **Third maneuver**: to determine part of fetus in fundus
  - **Fourth maneuver**: to determine degree of cephalic flexion and engagement

Evaluate fetal heart rate by quadrant, location, and rate

- 120–160 beats/min
- In lower extremities toward end of pregnancy

Evaluate presence of edema

- 160 or <120: may indicate fetal distress. Notify physician
- In upper extremities and face: may indicate preeclampsia

![Steps of Leopold’s maneuvers.](image-url)


**Assessment**

Evaluate **urine** (clean catch midstream)

Evaluate **levels of discomfort**

**Intrapartum Assessment**

Assess for **lightening** and **dropping** (the descent of the presenting part into the pelvis)

Check if **mucous plug** has been expelled from cervix

Assess for **“bloody show”**

Assess for **ruptured membranes**

Time water breaks

Color of **amniotic fluid**

Quantity of amniotic fluid

Odor of fluid

**Fetal heart rate**

**Labor and Delivery Assessment**

**Evaluate Contraction**

**Frequency:** from start of one contraction to start of next

3–5 minutes between contractions

(continued)
OBSTETRICAL ASSESSMENT (continued)

Assessment

**Duration:** from beginning of contraction to time uterus begins to relax

**Intensity** (strength of contraction): measured with monitoring device

**First-Stage**

*Latent phase* (0–4 cm dilation)

- 0–3 to 4 cm; average 6.4 hrs

*Active phase* (4–8 cm)

*Transitional phase* (8–10 cm)

Length of time varies—may be 1–2 hours

Assess for **bloody show**

Observe for presence of **nausea or vomiting**

Assess **perineum**

Evaluate **urge to bear down**

**Second stage** (10 cm to delivery)

Primipara: up to 2 hours

Multipara: several minutes to 2 hours

Assess for **presenting part**

Assess **caput** (infant head)

Primipara: move to delivery room when caput size of dime

Multipara: move to delivery room when caput size of half dollar

Assess **fetal heart rate**

Bradycardia, drop of 20 beats/min below base line (↓120 beats/min)

Tachycardia, increase in FHR over 160 beats/min for 10 min

Evaluate **fetal heart rate tracing**

Short-term variability is present

Long-term variability ranges from 3–5 cycles/min

Normal

- 50–90 seconds

- Peak 25 mm Hg

- End of labor may reach 50–75 mm Hg

- 0–3 to 4 cm; average 6.4 hrs

- Length of time varies—may be 1–2 hours

- Beginning to bulge

- Primipara: up to 2 hours

- Multipara: several minutes to 2 hours

- Visible when bearing down during contraction

- 120–160/min

Abnormal

- >90 seconds: uterine tetany; stop oxytocin if running

- >75 mm Hg: uterine tetany or uterine rupture

- Prolonged time in any phase: may indicate poor fetal position, incomplete fetal flexion, cephalopelvic disproportion, or poor uterine contractions

- If total labor <3 hours: indicates precipitous labor, increasing risk of fetal complications, or maternal lacerations and tears

- Often uncontrolled Multipara: can cause precipitous delivery

- “Panting” (can be controlled until safe delivery area established)

- >2 hours: increased risk of fetal brain damage and maternal exhaustion

- Occiput posterior, breech, face, or transverse lie

- “Crowns” in room other than delivery room: delivery imminent (do not move client)

- Decreased: may indicate supine hypotensive syndrome (turn client on side and take again)

- Hemorrhage (check for other signs of bleeding; notify physician)

- Increased or decreased: may indicate fetal distress secondary to cord progression or compression (place client in Trendelenburg or knee–chest position; give oxygen if necessary; inform physician)

- Absence of variability (no short term or long term present)

- Severe variable decelerations (fetal heart rate <70 for longer than 30–45 seconds with decreasing variability)
### Chapter 11
### Physical Assessment

#### Assessment

**Deceleration**
- Early deceleration (10–20 beat drop)
- Recovery when acme contraction passes—often not serious

**Variable deceleration; decrease in FHR, below 120/min**
- Mild; may be within normal parameters—continue to monitor
- If continues less than 15 minutes, no problem apparent

**Loss of beat-to-beat variation**
- Monitor closely—distinguish from late deceleration (10–20 beat drop with hypertonic contraction); leads to fetal distress
- Cord compression—may result in fetal distress

**Evaluate breathing**
- Controlled with contractions

**Evaluate pain and anxiety**
- Medication required after dilated 4–5 cm unless using natural childbirth methods

**Third stage** (from delivery of baby to delivery of placenta)
- Placental separation occurs within 30 minutes (usually 3–5 min)

**Fourth stage** (first hour postpartum)

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Temperature</td>
<td>36.5°C–37.5°C</td>
<td>Monitor closely—distinguish from late deceleration (10–20 beat drop with hypertonic contraction); leads to fetal distress or cord compression—may result in fetal difficulty</td>
</tr>
<tr>
<td>Pulse</td>
<td>Pulse: 60–100</td>
<td>Heavy or excessive: may lead to hyperventilation and/or dehydration</td>
</tr>
<tr>
<td>Respiration</td>
<td>Respirations: 12–22</td>
<td>Severe pain early in first stage of labor: inadequate prenatal teaching, backache due to position in bed, uterine tetany</td>
</tr>
<tr>
<td>Blood pressure</td>
<td>Blood pressure: 120–140/80</td>
<td>Failure of placental separation Abnormality of uterus or cervix, weak, ineffectual uterine contraction, tetanic contractions causing closure of cervix or &gt;3 hours: indicates retained placenta</td>
</tr>
</tbody>
</table>

**Postpartum Assessment**

- **Assess vital signs every 15 minutes for 1 hour, every 30 minutes for 1 hour, every hour for 4 hours, every 8 hours, and as needed**
- **Assess fundus every 15 minutes for 1 hour, every 8 hours for 48 hours, then daily**

**Abnormal**
- Pulse to normal range about third day
- Pulse may be 45–60/min in stage 4
- Temperature elevates when lactation occurs
- Decayed BP and increased pulse: probably postpartum hemorrhage

- **Firm (like a grapefruit) in midline and at or slightly above umbilicus**
- Return to prepregnant size in 6 weeks: descending at rate of 1 fingerbreadth/day
- Boggy fundus: immediately massage gently until firm; report to physician and observe closely; empty bladder; medicate with oxytocin if ordered
- Fundus misplaced 1–2 fingerbreadths from midline: indicates full bladder (client must void or be catheterized)

(continued)
Assess **lochia** every 15 minutes for 1 hour, every 8 hours for 48 hours, then daily.

**Color**

- 3 days postpartum: dark red (rubra)
- 4–10 days postpartum: clear pink (serosa)
- 10–21 days postpartum: white, yellow brown (alba)

- Heavy, bright-red: indicates hemorrhage (massage fundus, give medication on order, notify physician)
- Spurts: may indicate cervical tear
- No lochia: may indicate clot occluding cervical opening (support fundus; express clot)

**Quantity**

- Moderate amount, steadily decreases
- Foul: may indicate infection

**Odor**

- Minimal
- Sore or cracked (clean and dry nipples; decrease breast-feeding time; apply breast shield between feeding)
- Milk does not “let down”: help client relax and decrease anxiety; give glass of wine or beer if not culturally, religiously, or otherwise contraindicated

Assess **breasts and nipples** daily.

- Days 1–2: soft, intact, secreting colostrum
- Days 2–3: engorged, tender, full, tight, painful
- Day 3+: secreting milk
- Increased pains as baby sucks: common in multiparas
- Milk does not “let down”:
- Milk does not “let down”:
- Client does not require RhoGAM

Assess **perineum** daily.

- Episiotomy intact, no swelling, no discoloration
- Swelling or bruising: may indicate hematoma
- Not voiding: bladder may be full and displaced to one side, leading to increased lochia (catheterization may be necessary)

Assess **bladder** every 4 hours.

- Voiding regularly with no pain
- Fear associated with pain from hemorrhoids
- Refuses to touch or hold infant

Assess **bowels**.

- Spontaneous bowel movement 2–3 days after delivery
- Fear associated with pain from hemorrhoids
- Refuses to touch or hold infant

**Evaluate Rh-negative status**

**Maternal History: Definition of Terms**

- Abortion: pregnancy loss before fetus is viable (usually <20 weeks or 500 g)
- Multigravida: refers to second or any subsequent pregnancy
- Parity: past pregnancies that continued to viable age (20 weeks); infants may be alive or dead at birth
- Primigravida: refers to first-time pregnancy
- Primipara: refers to female who has delivered first viable infant; born either alive or dead
- Nullipara: refers to female who has never carried pregnancy to viable age for fetus
- Multipara: refers to female who has given birth to two or more viable infants; either alive or dead

**NEWBORN ASSESSMENT**

**Assessment**

**Skin Assessment**

- Note skin color, pigmentation, and lesions

- Pink
- Mongolian spots
- Cyanosis, pallor, beefy red
- Petechiae, ecchymoses, or purpuric spots: signs of possible hematologic disorder
Assessment

<table>
<thead>
<tr>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capillary hemangiomas on face or neck</td>
<td>Café au lait spots (patches of brown discoloration): possible sign of congenital neurological disorder</td>
</tr>
<tr>
<td>Localized edema in presenting part</td>
<td>Raised capillary hemangiomas on areas other than face or neck</td>
</tr>
<tr>
<td>Cheesy white vernix</td>
<td>Edema of peritoneal wall</td>
</tr>
<tr>
<td>Desquamation (peeling off)</td>
<td>Poor skin turgor: indicates dehydration</td>
</tr>
<tr>
<td>Milia (small white pustules over nose and chin)</td>
<td>Yellow discolored vernix (meconium stained)</td>
</tr>
<tr>
<td>Jaundice after 24 hours; gone by second week</td>
<td>Impetigo neonatorum (small pustules with surrounding red areas)</td>
</tr>
<tr>
<td>Jaundice at birth or within 12 hours</td>
<td>Jaundice at birth or within 12 hours</td>
</tr>
<tr>
<td>Dermal sinuses (opening to brain)</td>
<td>Holes along spinal column</td>
</tr>
<tr>
<td>Low hairline posteriorly: possible chromosomal abnormality</td>
<td>Low hairline posteriorly: possible chromosomal abnormality</td>
</tr>
<tr>
<td>Sparse or spotty hair: congenital goiter or chromosomal abnormality</td>
<td>Yellowing of nail beds (meconium stained)</td>
</tr>
<tr>
<td>Note color of nails</td>
<td>FLACCID, convulsions</td>
</tr>
<tr>
<td>Pink</td>
<td>Muscular twitching, hypertonicity</td>
</tr>
<tr>
<td>Note muscle strength/tone</td>
<td>Strong, tremulous</td>
</tr>
<tr>
<td>Strong, tremulous</td>
<td></td>
</tr>
</tbody>
</table>

Head and Neck Assessment

Note shape of head

Fontanels: anterior open until 18 months; posterior closed shortly after birth

Assess eyes

Slight edema of lids

Pupils equal and reactive to light by 3 weeks of age

Intermittent strabismus (occasional crossing of eyes)

Conjunctival or scleral hemorrhages

Symmetrical light reflex (light reflects off each eye in the same quadrant): sign of conjugate gaze

Constricted pupil, unilateral dilated fixed pupil, nystagmus (rhythmic nonpurposeful movement of eyeball): continuous strabismus

Haziness of cornea

Absence of red reflex; asymmetrical light reflex

(continued)
### NEWBORN ASSESSMENT (continued)

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Note</strong> placement of ears, shape and position</td>
<td></td>
<td>Low-set ears: may indicate chromosomal or renal system abnormality</td>
</tr>
<tr>
<td>The top of the ear should be on an imaginary line from the edge of the eye</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Assess</strong> nose</td>
<td>Discharge, sneezing</td>
<td>Thick, bloody nasal discharge</td>
</tr>
<tr>
<td>Assess mouth</td>
<td>Sucking, rooting reflexes</td>
<td>Cleft lip, palate</td>
</tr>
<tr>
<td></td>
<td>Retention cysts</td>
<td>Flat, white nonremovable spots (thrush)</td>
</tr>
<tr>
<td></td>
<td>Occasional vomiting</td>
<td>Frequent vomiting: may indicate pyloric stenosis</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vomitus with bile: fecal vomiting</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Profuse salivation: may indicate tracheoesophageal fistula</td>
</tr>
<tr>
<td><strong>Assess</strong> neck</td>
<td>Tonic neck reflex (Fencer’s position)</td>
<td>Distended neck veins</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fractured clavicle</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Unusually short neck</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Excess posterior cervical skin</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Resistance to neck flexion</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Weak, groaning cry: possible neurological abnormality</td>
</tr>
<tr>
<td></td>
<td></td>
<td>High-pitched cry: newborn drug withdrawal (may occur 6–12 months after birth); hoarse or crowing inspirations; catlike cry: possible neurological or chromosomal abnormality</td>
</tr>
<tr>
<td><strong>Assess</strong> cry</td>
<td>Lusty cry</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Chest and Lung Assessment

| **Assess** chest | Circular | Depressed sternum |
| | Enlargement of breasts | Retractions, asymmetry of chest movements: indicates respiratory distress and possible pneumothorax |
| | Milky discharge from breasts | Thoracic breathing, unequal motion of chest, rapid grasping or grunting respirations, flaring nares |
| **Assess** respirations/lungs | Abdominal respirations | Deep sighing respirations |
| | Respiration rate: 30 to 50 | Grunt on expiration: possible respiratory distress |
| | Respiration movement irregular in rate and depth | Hyper-resonance of chest or decreased resonance |
| | Resonant chest (hollow sound on percussion) | |

### Heart Assessment

| **Assess the rate, rhythm, and murmurs of the heart** | Rate: 100–160 at birth; stabilizes at 120–140 | Heart rate >200 or <100 |
| | Regular rhythm | Irregular rhythm |
| | Murmurs: significance cannot usually be determined in newborn | Dextrocardia, enlarged heart |

### Abdomen and Gastrointestinal Tract Assessment

| **Assess the abdomen** | Prominent | Distention of abdominal veins: possible portal vein obstruction |
| | | Visible peristaltic waves |
| **Assess the gastrointestinal tract** | Bowel sounds present | Increased pitch or frequency: intestinal obstruction |
Assessment | Normal | Abnormal
--- | --- | ---
Liver 2 to 3 cm below right costal margin | Decreased sounds: paralytic ileus | Distention of abdomen
Spleen tip palpable | Enlarged liver or spleen | Midline suprapubic mass: may indicate Hirschsprung’s disease
Umbilical cord with one vein and two arteries | One artery present in umbilical cord: may indicate other anomalies | Wet umbilical stump or fetid odor from stump
Soft granulation tissue at umbilicus | | 

Genitourinary Tract Assessment
Assess kidneys and bladder | May be able to palpate kidneys | Enlarged kidney
Bladder percussed 1 to 4 cm above symphysis pubis | Distended kidney; presence of any masses
Edema and bruising after delivery | Inguinal hernia | 
Unusually large clitoris in females a short time after birth | Ambiguous genitalia (chromosomal abnormality)
Vaginal mucoid or bloody discharge may be present in the first week | | 
Urethral orifice | Urethra opens on ventral surface of penile shaft | 
| Hypospadias (urethra opens on the inferior surface of the penis) | Epispadias (urethra opens on the dorsal surface of the penis)
Ulceration of urethral orifice | Hydroceles in males | 

Testes
Spine and Extremities Assessment
Assess the spine | Testes in scrotal sac or inguinal canal | Spina bifida, pilonidal sinus; scoliosis
Straight spine | Asymmetry of movement | 
Assess extremities | Soft click with thigh rotation | Spinal click with thigh rotation: indicates possible congenital hip
Uneven major gluteal folds: indicates possible congenital hip | Polydactyly (extra digits on a hand or foot); syndactyly (webbing or fusion of fingers or toes)

Assess anus and rectum | Patent anus | Closed anus: no meconium | 

**TABLE 11–3 APGAR SCORING**

<table>
<thead>
<tr>
<th>Sign</th>
<th>0</th>
<th>1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heart rate</td>
<td>Absent</td>
<td>Slow (less than 100)</td>
<td>Over 100</td>
</tr>
<tr>
<td>Respiratory effort</td>
<td>Absent</td>
<td>Slow, irregular</td>
<td>Good, crying</td>
</tr>
<tr>
<td>Muscle tone</td>
<td>Flaccid</td>
<td>Some flexion of extremities</td>
<td>Active motion</td>
</tr>
<tr>
<td>Reflex irritability</td>
<td>No response</td>
<td>Cry</td>
<td>Vigorous cry</td>
</tr>
<tr>
<td>Color</td>
<td>Blue, pale</td>
<td>Body pink, extremities blue</td>
<td>Completely pink</td>
</tr>
</tbody>
</table>

APGAR scoring system is a method of evaluating a newborn’s condition at 1 and 5 minutes after birth.
- Newborns who score 7–10 are considered free of immediate danger.
- Newborns who score 4–6 are moderately depressed.
- Newborns who score 0–3 are severely depressed.

Scores less than 7 at 5 minutes, repeat every 5 minutes for 20 minutes. Infant may be intubated unless 2 successive scores of 7 or more occur.
PEDIATRIC ASSESSMENT

Measurements

Measure **height** and **weight** and plot on a standardized growth chart

- **Normal**
  - Height/weight proportional
  - Sequential measurements: pattern follows normal growth curves

- **Abnormal**
  - Height/weight below fifth percentile
  - Sudden drop in percentile range of height and/or weight: possible sign of disease process or congenital problem
  - Sudden and persistent increase (above 95th percentile)
  - Temperature of 104°–105°F: corresponds roughly with 101°–102°F in an adult

Assess **temperature** (axillary or tympanic until 6 years of age)

- **Normal**
  - Axillary: 36.5°–37.5°C (97.7°F)
  - Elevations following eating or playing not unusual
  - Rectal: 36.6°–37.2°C (97.8°F)

- **Abnormal**
  - Temperature of 104°–105°F: corresponds roughly with 101°–102°F in an adult
  - Large daily temperature variations
  - Hypothermia: usually result of chilling

Measure **circumference of head and chest**

- **Normal**
  - Head at birth: about 2 cm greater than chest
  - During first year: equalization of head and chest
  - After 2 years: rapid growth of chest; slight increase in size of head

- **Abnormal**
  - Increase in head circumference greater than 2.5 cm per month: sign of hydrocephalus

Assess **pulse** apically

- **Normal**
  - Birth–1 year: 100–180
  - 1 year: 80–150
  - 2 years: 80–130
  - 3 years: 80–120
  - Over 3 years: 70–110

- **Abnormal**
  - Pulse over 180 at rest after first month of life: cardiac or respiratory condition
  - Inability to palpate or very weak femoral and pedal pulses: possible coarctation of the aorta
  - Consistent tachypnea: usually a sign of respiratory distress
  - Respiratory rate over 100; lower respiratory tract obstruction
  - Slow rate: may be sign of CNS depression

Assess **respirations**

- **Normal**
  - Birth: 30–50
  - 6 years: 20–25
  - Puberty: 14–16
  - (Young children have abnormally high respiration rate with even slight excitement)

- **Abnormal**
  - Elevated blood pressure in upper extremities and decrease in lower extremities: coarctation of aorta
  - Narrowed pulse pressure (normal or elevated diastolic with lowered systolic; less than 30 points difference between systolic and diastolic readings): possible sign of aortic or subaortic stenosis or hypothyroidism
  - Widened pulse pressure: possible sign of hyperthyroidism

Assess **blood pressure**

- **Normal**
  - Birth: 55–60/80–90
  - 1 year: 90–60
  - Rise in both pressures: 2–3 points per year of age
  - Adult level reached at puberty

- **Abnormal**
  - Elevated blood pressure in upper extremities and decrease in lower extremities: coarctation of aorta
  - Narrowed pulse pressure (normal or elevated diastolic with lowered systolic; less than 30 points difference between systolic and diastolic readings): possible sign of aortic or subaortic stenosis or hypothyroidism
  - Widened pulse pressure: possible sign of hyperthyroidism

Appearance

Observe **general appearance**

- Alert, well-nourished, comfortable, responsive

Listen to **voice and cry**

- Strong, lusty cry

- Lethargic, uncomfortable, malnourished, gross anomalies, dull

Weak cry, low- or high-pitched cry: may indicate neurological problem or chromosomal abnormality
Assessment

**Normal**

Facial expression animated
No indications of pain

**Abnormal**

Stridor: possible upper airway edema or obstruction or hoarse cry
Expressionless, unresponsive
Doubling over, rubbing a body part, general fretfulness, irritability
Musty odor: sign of phenylketonuria, diphtheria
Odor of maple syrup: may be maple syrup urine disease
Odor of sweaty feet: one type of acidemia
Fishy odor: may be metabolic disorder
Acetone odor: acidosis, particularly diabetic ketoacidosis

---

**Skin Assessment**

**Assess pigmentation**

Usually even
Pigmented nevi common
Large, flat, black and blue areas over sacrum, buttocks (mongolian spots)

**Assess lesions**

Usually none
Adolescence: acne

**Assess signs/symptoms of abuse**

None present

**Note consistency of skin**

Good turgor
Smooth and firm
Check fontanel in infant

**Assess nails**

Nailbeds: normally pigmented
Good nail growth

**Assess hair (consistency appropriate to ethnic group)**

No excessive breaking
Consistent growth pattern

(continued)
### Physical Assessment

#### Unusual hairiness

- Hairiness in places other than scalp, eyebrows, and lashes: may indicate hypothyroidism, vitamin A poisoning, chronic infections, reaction to Dilantin therapy.
- Tufts of hair over spine or sacrum: may indicate site of spina bifida occulta or spina bifida.
- Absence of the start of pubic hair during adolescence: possible hypothyroidism, hypopituitarism, gonadal deficiency, or Addison’s disease.

#### Assess lymph nodes

- Nontender, movable, discrete nodes up to 3 mm in diameter in occipital, postauricular, parotid, sub-maxillary, sublingual, axillary, and epitrochlear nodes.
- Up to 1 mm in diameter inguinal and cervical nodes.
- Tender or enlarged nodes: may be sign of systemic infection.

#### Head and Neck Assessment

- **Assess scalp**
  - Usually without lesions.
  - Ringworm, lice.
- **Assess frontal and maxillary sinuses**
  - Nontender.
  - Tenderness: indicative of inflammatory process.
  - Seborrheic dermatitis.
- **Assess face**
  - Symmetrical movement.
  - Asymmetry: signs of facial paralysis.
  - Twitching: could be due to psychosomatic causes; vitamin/mineral deficiency.
- **Evaluate the eyes**
  - With younger child, ability to focus and follow movement and to see objects placed a few feet away.
  - Inability to follow movement or to see objects placed a few feet away.
  - Yellow sclera: sign of jaundice.
  - Blue sclera: may be normal or indicative of osteogenesis imperfecta.
- **Sclerae**
  - Completely white.
- **Placement in eye socket**
  - Normally placed.
  - Exophthalmos (protrusion of eyeball).
  - Enophthalmos (deeply placed eyeball).
- **Iris**
  - At rest: upper and lower margins of iris visible between the lids.
  - Setting sun sign (iris appears to be beneath lower lid): if marked, may be sign of increased intracranial pressure or hydrocephalus.
- **Movement**
  - In newborn, intermittent strabismus or nystagmus.
  - Fixed strabismus or intermittent strabismus continuing after 6 months of age: indication of muscle paralysis or weakness.
  - Involuntary, repetitive oscillations of one or both eyes: normal with extreme lateral gaze.
<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Eyelids</strong></td>
<td>Fully covers eye</td>
<td>Pupil of eyelid: may be an early sign of a neurological disorder</td>
</tr>
<tr>
<td></td>
<td>Fully raised on opening</td>
<td></td>
</tr>
<tr>
<td><strong>Conjunctiva</strong></td>
<td>Clear</td>
<td></td>
</tr>
<tr>
<td><strong>Cornea</strong></td>
<td>Clear</td>
<td></td>
</tr>
<tr>
<td><strong>Discharge</strong></td>
<td>Tears</td>
<td></td>
</tr>
<tr>
<td><strong>Pupils</strong></td>
<td>Round, regular Clear, equal Brisk reaction to light Accommodation reflex (ability of lens to adjust to objects at different distances)</td>
<td>Sluggish or asymmetrical reaction to light: indicates intracranial disease Lack of accommodation reflex</td>
</tr>
<tr>
<td><strong>Lens</strong></td>
<td>Clear</td>
<td>Opacities (cataracts)</td>
</tr>
<tr>
<td><strong>Evaluate the ears</strong></td>
<td>No abnormality</td>
<td>Small holes or pits anterior to ear: may be superficial but could indicate the presence of a sinus leading into brain</td>
</tr>
<tr>
<td><strong>Sinuses</strong></td>
<td>Top of ear above level of eye</td>
<td>Top of ear below level of eye: associated with some congenital defects</td>
</tr>
<tr>
<td><strong>Position</strong></td>
<td>None</td>
<td>Discharge: note color, odor, consistency, and amount</td>
</tr>
<tr>
<td><strong>Discharge</strong></td>
<td>In infant: turning to sound In older child: responds to whispered command</td>
<td>Diminished hearing in one or both ears</td>
</tr>
<tr>
<td><strong>Hearing</strong></td>
<td>No secretions</td>
<td>Secretions: note characteristics Any unusual shape or flaring of nostrils</td>
</tr>
<tr>
<td><strong>Assess the nose</strong></td>
<td>Breathing through nose</td>
<td>Breathing through mouth</td>
</tr>
<tr>
<td><strong>Assess the mouth</strong></td>
<td>Intact palate Teeth in good condition In older child presence of permanent teeth</td>
<td>Circumoral pallor: possible sign of cyanotic heart disease, scarlet fever, rheumatic fever, hypoglycemia: also seen in other febrile diseases Asymmetry of lips: seen in nerve paralysis Cleft palate Delayed appearance of deciduous teeth: may indicate cretinism, rickets, congenital syphilis, or Down syndrome; may also be normal</td>
</tr>
</tbody>
</table>

(continued)
### Physical Assessment

**Chapter 11**

#### Poor tooth formation:
- May be seen with systemic diseases
- Green or black teeth: seen after iron ingestion or death of tooth
- Stained teeth: may be seen after prolonged use of tetracyclines

#### Inflammation, abnormal color, drooling, pus, tenderness

Black line along gums: may indicate lead poisoning

#### Assess the gums
- Retention cysts in newborn
- Assessment: Normal
- Abnormal

#### Assess the tongue
- Moves freely
- Tremors on protrusion: may indicate chorea, hypothyroidism, cerebral palsy
- Protruding tongue—Down’s syndrome
- White spots (thrush)
- Tongue-tie (frenulum)
- Strawberry tongue (scarlet fever)

#### Assess the throat
- Tonsils normally enlarged in childhood
- White membrane over tonsils (diphtheria)
- White pus on sacs, erythema (bacterial pharyngitis), tender:
  - vitamin deficiencies, anemia

#### Assess the larynx
- Normal vocal tones
- Hoarseness or stridor: possible upper respiratory tract obstruction

#### Assess the neck
- Short in infancy
- Lengthens at 2–3 years
- Trachea slightly right of midline
- Trachea deviated to left or right: may indicate shift with atelectasis
- Enlarged: may be due to hyperactive thyroid, malignancy, goiter
- Limited movement with pain: may indicate meningeal irritation, lymph node enlargement, rheumatoid arthritis, or other diseases

#### Lungs and Thorax Assessment

- **Assess the lungs**
  - Normally clear and equal breath sounds bilaterally
  - Presence of rhonchi, crackles, or wheezes
  - Diminished breath sounds heard over parts of lung
  - Mild to severe intercostal or sternal retractions indicative of respiratory distress
  - Asymmetry of movement (phrenic nerve damage)

- **Assess the sputum**
  - None or small amount of clear sputum in morning
  - Thick, tenacious sputum with foul odor
  - Blood-tinged or green sputum
Assessment
Assess the breasts
- Slightly enlarged in infancy
- Generally slightly asymmetrical at puberty

Heart Assessment
Assess heart sounds
- $S_1$, $S_2$, $S_3$
Assess femoral pulses
- Strong
Note edema
- None present

Note clubbing of fingers
- None present

Note murmurs
- None

Note cyanosis
- None normally present

Abdomen Assessment
Assess skin condition
- Soft
Assess for peristaltic motion
- Not visible
Assess shape
- “Pot-bellied” toddlers
- Slightly protuberant in standing adolescent

Genitourinary Tract Assessment
Assess female genitalia
- Discharge
- Mucoid, no odor
Assess male genitalia
- Presence of urethral orifice
- Orifice on distal end of penis
- Normal size
- Covers glans completely
- Descended testes
- No signs
Assess urine output
- Full, steady stream of urine

Abnormal
- Discharge or growth in male
- Masses (especially solid, fixed nonmobile) in older adolescent
- $S_4$ indicates congestive heart failure
- Weak
- Edema—note location (initially periorbital) and duration, bulging fontanelles
- Clubbing—congenital cyanotic heart defects; note location and duration
- Murmur grade three or higher is always abnormal
- No change in quality with positional changes
- Circumoral or peripheral cyanosis: indicates respiratory or cardiac disease (hypoxemia); congenital heart defects
- Hard, rigid, tender
- Visible peristalsis—may indicate pyloric stenosis (olive-shaped mass, palpable, in area of pyloris)
- Large protruding abdomen: may indicate pancreatic fibrosis, hypokalemia, rickets, hypothyroidism, bowel obstruction, constipation, inguinal hernias, unilateral or bilateral: observe for reducibility
- Umbilical protrusion
- Umbilical hernia
- Foul or copious discharge; any bleeding prior to puberty
- Hypospadias or epispadias (urethral orifice along inferior or dorsal surface)
- Stenosis of urethral opening
- Foreskin incompletely formed ventrally when hypospadias present
- Undescended testes
- Enlarged scrotum
- Bruises, welts, swelling, discharge, bleeding
- Urine with pus, blood, or odor (infection)
- Excessive urination or nocturia: possible sign of diabetes

(continued)
Chapter 11  Physical Assessment

**PEDIATRIC ASSESSMENT (continued)**

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Normal</th>
<th>Abnormal</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Check anus and rectum</strong></td>
<td>No masses or fissures present</td>
<td>Hemorrhoids, fissures, prolapse, pinworms</td>
</tr>
<tr>
<td><strong>Musculoskeletal Assessment</strong></td>
<td>Coloration of fingers and toes consistent with rest of body</td>
<td>Cyanosis—indicates respiratory or cardiac disease, or hypothermia in newborn</td>
</tr>
<tr>
<td><strong>Assess extremities</strong></td>
<td>Clubbing of fingers and toes indicates cardiac or respiratory disease</td>
<td>Quick capillary refill on blanching indicates poor circulation</td>
</tr>
<tr>
<td></td>
<td>Temperature same as rest of body</td>
<td>Temperature variation between extremities and rest of body indicates neurological or vascular anomalies</td>
</tr>
<tr>
<td></td>
<td>Presence of pedal pulses</td>
<td>Absence of pedal pulses indicates circulatory difficulties</td>
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<tr>
<td></td>
<td>No pain or tenderness</td>
<td>Presence of localized or generalized pain</td>
</tr>
<tr>
<td></td>
<td>Straight legs after 2 years of age</td>
<td>Any bowing after 2 years of age may be hereditary or indicate rickets</td>
</tr>
<tr>
<td></td>
<td>Broad-based gait until 4 years of age; feet straight ahead afterwards</td>
<td>Scissoring gait indicates spastic cerebral palsy</td>
</tr>
<tr>
<td></td>
<td>Persistence of broad-based gait after 4 years of age indicates possible abnormalities of legs and feet or balance disturbance</td>
<td>Any limp or ataxia</td>
</tr>
<tr>
<td><strong>Assess spine</strong></td>
<td>No dimples</td>
<td>Presence of dimple or tufts of hair indicates possible spina bifida</td>
</tr>
<tr>
<td></td>
<td>Flexible</td>
<td>Limited flexion indicates central nervous system infections</td>
</tr>
<tr>
<td></td>
<td>Hyperextension (opisthotonos) indicates brain stem irritation, hemorrhage, or intracranial infection</td>
<td>Presence of lordosis (after age 2 years), kyphosis, or scoliosis</td>
</tr>
<tr>
<td></td>
<td>Have child bend forward at waist and check level of scapulae (scoliosis screening)</td>
<td>Asymmetrical thigh folds, clicks on adduction—hip dysplasia</td>
</tr>
<tr>
<td></td>
<td>Scapulae at same height</td>
<td></td>
</tr>
<tr>
<td><strong>Assess joints</strong></td>
<td>Full range of motion without pain, edema, or tenderness</td>
<td>Pain, edema, or tenderness indicates tissue injury</td>
</tr>
<tr>
<td><strong>Assess muscles</strong></td>
<td>Good tone and purposeful movement</td>
<td>Decreased or increased tone</td>
</tr>
<tr>
<td></td>
<td>Ability to perform motor skills approximate to development level</td>
<td>Spasm or tremors may indicate cerebral palsy</td>
</tr>
<tr>
<td></td>
<td>Atrophy or contractures</td>
<td></td>
</tr>
</tbody>
</table>

SECOND REVISED
CHAPTER ADDENDUM

GERONTOLOGIC CONSIDERATIONS

HEAD AND NECK AND NEUROLOGIC SYSTEM

Physiologic Changes with Age

• Decreased speed of nerve conduction and delay in response and reaction time, especially with stress.
• Diminution of sensory faculties; decreased vision, loss of hearing, diminished sense of smell and taste, greater sensitivity to temperature changes with low tolerance to cold.
• Tooth loss.
• Poor dentition, inadequate chewing, poor swallowing reflex.
• Condition of teeth, gums, buccal cavity.
• Periodontal disease.

Assessment

• Facial symmetry.
• Poor reflex reactions.
• Level of alertness—presence of organic brain changes: memory impairment.
• Motor function—strength.

SKIN

Physiologic Changes with Age

Skin less effective as barrier.
• Decreased protection from trauma.
• Less ability to retain water.
• Decreased temperature regulation.

Skin composition changes.
• Dryness (osteotosis) due to decreased endocrine secretion.
• Loss of elastin.
• Increased vascular fragility.
• Thicker and more wrinkled on sun-exposed areas.
• Melanocyte cluster pigmentation.

Sweat glands.
• Decreased number and size.
• Decreased function of sebaceous glands.

Hair.
• General hair loss.
• Decreased melanin production.
• Facial hair increases in women.

Nails.
• More brittle and thick.

Assessment

Skin.
• Temperature, degree of moisture, dryness.
• Intactness, open lesions, tears, decubiti.
• Turgor, dehydration.
• Pigmentation alterations, potential cancer.
• Pruritus—dry skin most common cause.

Bruises, scars.

Condition of nails (hard and brittle).
• Presence of fungus.
• Overgrown or horny toenails, ingrown.

Condition of hair.

Infestations (scabies, lice).

Chest

Physiologic Changes with Age

Respiratory muscles lose strength and become rigid.
Ciliary activity decreases.
Lungs lose elasticity.
• Residual capacity increases.
• Larger on inspiration.
• Maximum breathing capacity decreases; depth of respirations decreases.

Alveoli increase in size, reduce in number.
• Fewer capillaries at alveoli.
• Dilated and less elastic alveoli.

Gas exchange is reduced.
• Arterial blood oxygen PaO₂ decreases to 75 mm Hg at age 70.
• Arterial blood carbon dioxide PaCO₂ unchanged.

Coughing ability is reduced—less sensitive mechanism.
More dependent on the diaphragm for breathing.
System less responsive to hypoxia and hypercardia.

Assessment
- Shape of chest excursion.
- Lung and breath sounds.
- Quality of cough, if present; sputum.
Rib cage deformity.
Dyspnea, hypoxia, and hypercarbia.

Breast—size, symmetry, contour.
- Presence of lumps.
- Size and shape of nipples.

Heart
Physiologic Changes with Age
Mitral and aortic valves thicken and become rigid.
Cardiac output decreases 1% per year after age 20 due to decreased heart rate and stroke volume.
Vessels lose elasticity.
- Less effective peripheral oxygenation.
- Position change from lying-to-sitting or sitting-to-standing can cause blood pressure to drop as much as 65 mm Hg.
Increased peripheral vessel resistance.
- Blood pressure increases: systolic may normally be 170 mm Hg, diastolic may normally be 95 mm Hg.
- Smooth muscle in arteries is less responsive.
Blood clotting increases.

Assessment
Heart sounds—murmurs.
Peripheral circulation, color, warmth.
- Apical pulse.
- Jugular vein distention.
Orthostatic hypotension.
- Dizziness.
- Fainting.
Edema.
Activity intolerance.
Dyspnea.
Transient ischemic attacks (TIAs).

Abdomen
Physiologic Changes with Age
Esophagus dilates, decreased motility.
Stomach.
- Hunger sensations decrease.
- Secretion of hydrochloric acid decreases.
- Emptying time decreases.
Peristalsis decreases and constipation is common.
Absorption function is impaired.
- Body absorbs less nutrients due to reduced intestinal blood flow and atrophy of cells on absorbing surfaces.
- Decrease in gastric enzymes affects absorption.
Hiatal hernia common (40–60% of elderly).
Diverticulitis common (40% over age 70).
Liver.
- Fewer cells, with decreased storage capacity.
- Decreased blood flow.
- Enzymes decrease.
- Increased risk for drug toxicity.
Impaired pancreatic reserve.
Decreased glucose tolerance.

Assessment
- Indications of possible hiatal hernia.
- Bowel distention.
- Bowel sounds.

Genitourinary Tract
Physiologic Changes with Age
Kidneys.
- Smaller due to nephron atrophy.
- Renal blood flow decreases 50%.
- Glomerular filtration rate decreases 50%.
- Tubular function diminishes: less able to concentrate urine; lower specific gravity; proteinuria 1+ is common; blood urea nitrogen (BUN) increases 21 mg%.
Renal threshold for glucose increases.
Bladder.
- Muscle weakens.
- Capacity decreases to 200 mL or less, causing frequency.
- Emptying is more difficult, causing increased retention.
- Increased risk of incontinence.
Prostate enlarges to some degree in 75% of men over age 65; hypertrophy.
Menopause occurs by mean age of 50.
Perineal muscle weakens.
Vulva atrophies.
Vagina.
- Mucous membrane becomes dryer.
- Elasticity of tissue decreases, so surface is smooth.
- Secretions become reduced, more alkaline.
- Flora changes.
Sexuality.
- Older people continue to be sexual beings with sexual needs.
- No particular age at which a person’s sexual functioning ceases.
- Frequency of genital sexual behavior (intercourse) may tend to decline gradually in later years, but capacity for expression and enjoyment continue far into old age.

**Assessment**
- Condition of skin—dehydration.
- Urinary output; blood in urine; color; specific gravity; prothrombin time (PT).
- Incontinence.
- Bladder distention.
- Genital assessment.

### Musculoskeletal System

**Physiologic Changes with Age**

**Contractures.**
- Muscles atrophy, regenerate slowly, strength diminishes.
- Tendons shrink and sclerose.
- Range of motion of joints decreases.
- Lack of adequate joint motion, ankylosis.
- Slight flexion of joints.

**Assessment**
- Mobility level.
- Ambulate with more difficulty.
- Limitation to movement.
- Muscle strength cramps.
- Gait becomes unsteady.
- Presence of kyphosis.
- Pain in joints.

### Management Guidelines

Each state legislates a Nurse Practice Act for RNs and LVN/LPNs. Health care facilities are responsible for establishing and implementing policies and procedures that conform to their state’s regulations. Verify the regulations and role parameters for each health care worker in your facility.

### Delegation

- RNs must complete the admission assessment and document the findings. They cannot delegate this activity to anyone else on the team.
- LVN/LPNs may complete focus assessments each shift; however, any changes in assessment findings must be reported and verified with the RN.
- Unlicensed assistive-personnel may not perform assessments on clients.

### Communication Network

- Changes in assessment data identified in report or in the client’s chart must be reported to the appropriate nurse assigned to complete the focus assessment.
- LVN/LPNs delegated the responsibility to complete focus assessments on clients must have clear direction on what is essential information to report back. Remind the LVN/LPN they must verify with the RN any changes identified in the assessment.
- Remind LVN/LPNs that if there are any questions on the client status as a result of their assessment, they must notify the RN immediately.

### Critical Thinking Strategies

**Scenario 1**

Mrs. Smiley has had a history of hypertension for several years. She has recently experienced an inability to use her right arm and leg and has lost ability to express herself. She has been admitted to your unit with the diagnosis of R/O left CVA (stroke) and has been placed on a continuous heparin IV drip.

1. Based on admitting data, make a judgment about what deviations from normal you would find in the physical examination.
2. List appropriate nursing diagnoses based on her physical state and immobility status (this affects virtually all systems).
3. In view of all these existing and potential problems, identify priority concerns (all are important concerns) for this client.
4. Develop a plan of care addressing these priority concerns.

**Scenario 2**

You are caring for a woman in labor and monitoring the fetal heart rate. You note that early deceleration has occurred (a 10- to 20-beat drop in the fetal heart rate).

1. From these symptoms, indicate your priority intervention.
2. What would you conclude about the viability of the fetus?
3. What does this change in condition of the fetus imply?
NCLEX® Review Questions

1. The systematic approach the nurse should follow when auscultating a client’s lungs is
   1. Anterior to posterior.
   2. Top to bottom.
   3. Posterior to lateral to anterior.
   4. Side to side.

2. The nurse suspects that a client has appendicitis. When assessing for rebound tenderness, the nurse should
   1. Perform this assessment first.
   2. Have the client take a deep breath.
   3. Palpate deeply with quick release of pressure.
   4. Have the client lie flat with legs extended.

3. A client comes into the clinic for evaluation of a burn injury from hot liquid. The lesions are flat and red. The nurse should document the presence of
   1. Macules.
   2. Wheals.
   3. Vesicles.
   4. Papules.

4. The nurse is assessing a client’s deep tendon reflexes. When documenting a normal response, the nurse would chart
   1. +1.
   2. 0.
   3. +2.
   4. +4.

5. The cranial nerve that is assessed when testing for the “gag reflex” is the
   1. XI accessory.
   2. VII facial.
   3. IX glossopharyngeal.
   4. XII hypoglossal.

6. During a cardiac assessment, the S₁ heart sound can be heard best
   1. At the second intercostal space.
   2. By using the bell of the stethoscope.
   3. Over the aortic area.
   4. At the apex of the heart.

7. When assessing the lymph nodes in the neck, the nurse should instruct the client to
   1. Raise the chin.
   2. Lie in a supine position.
   3. Swallow a sip of water.
   4. Flex neck slightly.

8. Completing a physical assessment, the nurse is unable to palpate a peripheral pulse, the dorsalis pedis. The next intervention would be to
   1. Notify the physician.
   2. Examine the adjacent area.
   3. Obtain a new Doppler.
   4. Move on to the next area.

9. The urinary tract assessment includes checking the specific gravity of the client’s urine to determine if it is within normal limits. The normal range of specific gravity is _________.

10. Suspecting that the client you are assessing may be exhibiting cognitive decline or dementia, which of the following statements would be appropriate?
    1. How do you feel today?
    2. What work did you do twenty years ago?
    3. Who is the president of the United States?
    4. Tell me about why you are in the hospital.