

9

Body Systems and Related Conditions



Introduction

Define the following terms:

homeostasis

the condition in which all of the body's systems are balanced and are working together to maintain internal stability.

metabolism

physical and chemical processes by which substances are produced or broken down into energy or products for use by the body.

signs and symptoms

changes in metabolic processes; also known as *objective information* (signs) and *subjective information* (symptoms).

Introduction

Define the following terms:

organs

structural units in the human body that perform specific functions.

tissues

a group of cells that performs similar tasks.

cells

basic structural units of the body that divide, develop, and die, renewing tissues and organs.

Introduction

Define the following terms:

acute illness

an illness that has severe symptoms and is usually short-term.

chronic illness

a disease or condition that is long-term or long-lasting.

Introduction

HHAs should know the difference between signs and symptoms:

- Signs are what an HHA can actually see, hear, feel, or smell.
- Symptoms are what an HHA does not see directly, but what he is told by the client who experiences it.

1. Describe the integumentary system and related conditions

Define the following terms:

integument

a natural protective covering.

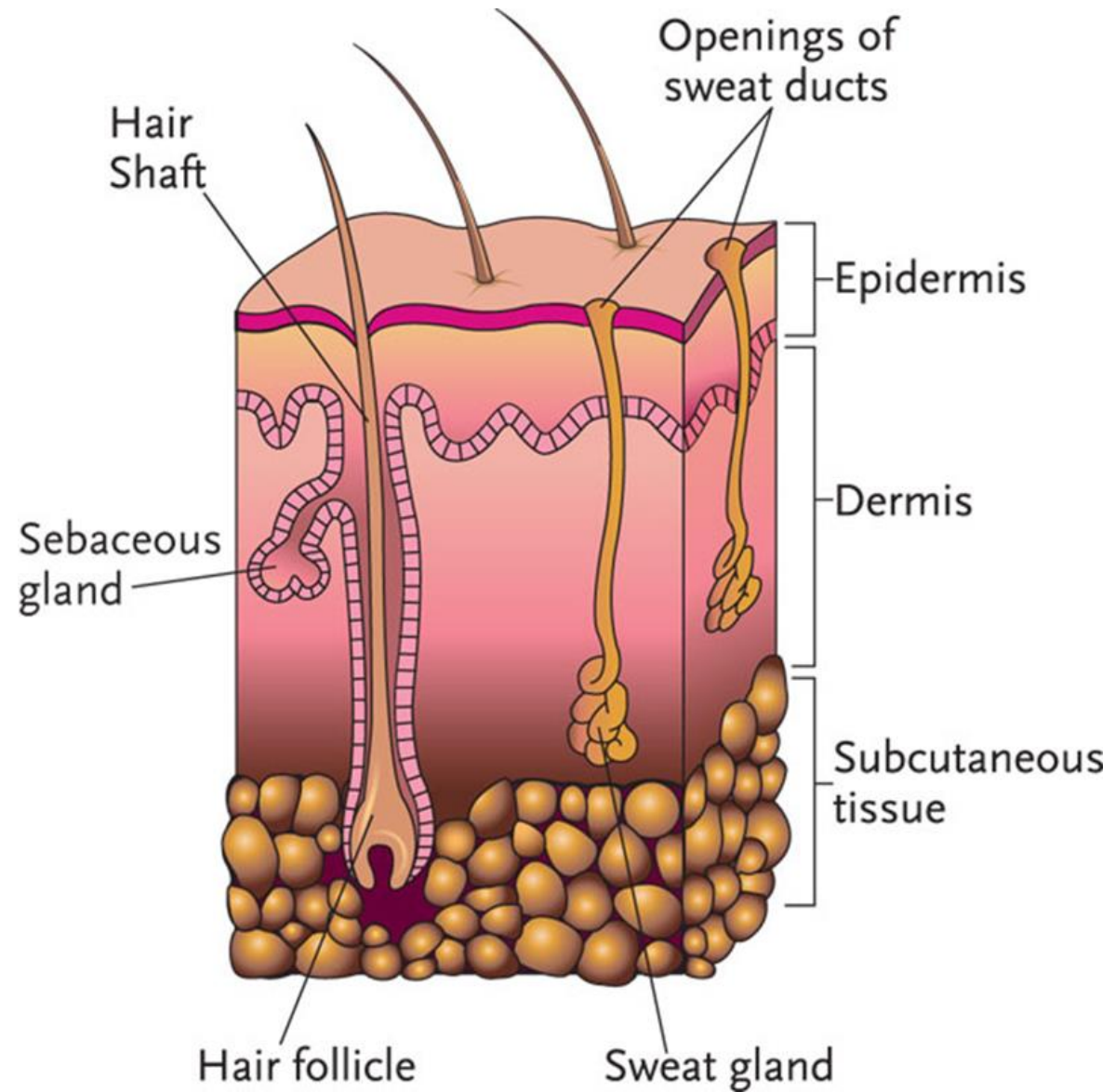
dilate

to widen.

constrict

to narrow.

Key Material 9-1: The Integumentary System



1. Describe the integumentary system and related conditions

HHAs should know these points about the integumentary system:

- Largest organ and system
- Natural protective covering
- Prevents excessive loss of water and injury to internal organs
- Skin made of tissue and glands
- Skin is a sense organ
- Regulates body temperature

1. Describe the integumentary system and related conditions

Observe and report the following:

- Pale, white, reddened, or purple areas
- Blisters or bruises
- Complaints of tingling, warmth, or burning
- Dry or flaking skin
- Itching or scratching
- Rashes or skin discoloration
- Swelling
- Cuts, boils, sores, wounds, or abrasions

1. Describe the integumentary system and related conditions

Observe and report (cont'd):

- Fluid or blood draining from skin
- Broken skin
- Changes in moistness/dryness
- Changes in wound or ulcer
- Redness or broken skin between toes or around toenails
- Scalp or hair changes
- Skin changes or abnormalities
- In brown or black skin tones, change in feel of tissue, skin tone, or temperature compared to skin nearby

1. Describe the integumentary system and related conditions

Define the following terms:

pressure points

areas of the body that bear much of the body weight.

bony prominences

areas of the body where bone lies close to the skin.

pressure injuries

injuries or wounds resulting from skin deterioration and shearing; also known as *pressure ulcers*, *pressure sores*, *decubitus ulcers*, or *bed sores*.

1. Describe the integumentary system and related conditions

Disorders of the integumentary system include the following:

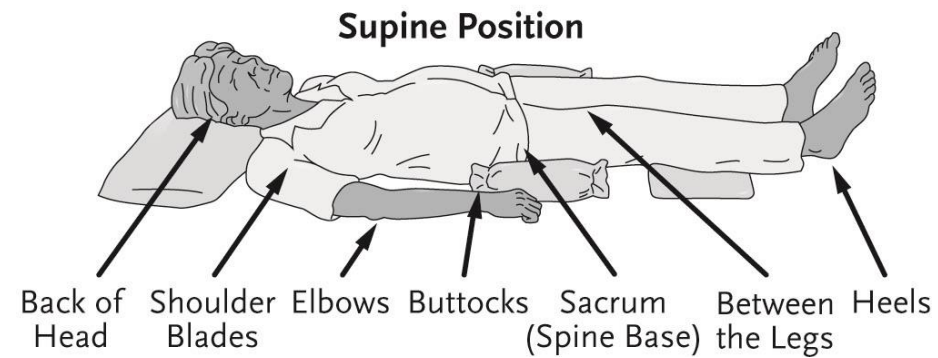
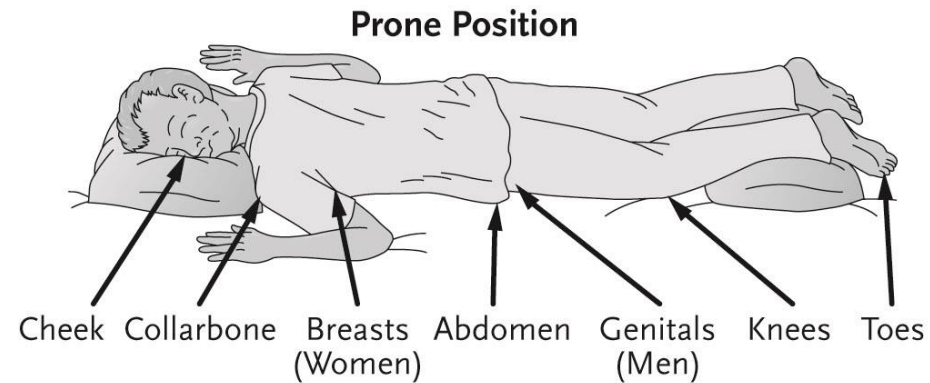
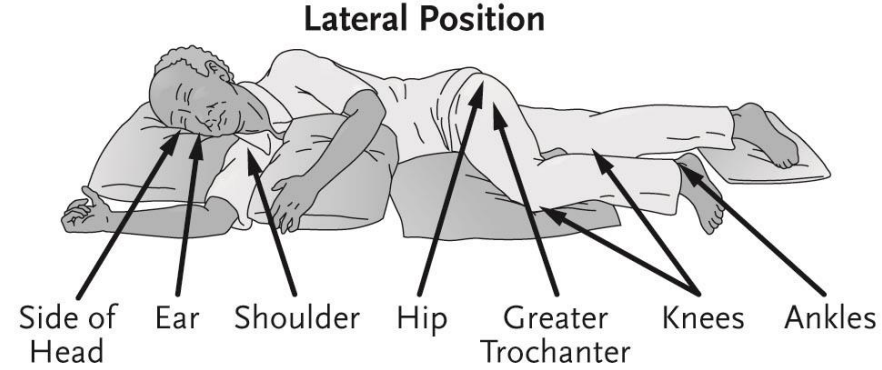
- Pressure injuries
- Wounds
- Stasis dermatitis

1. Describe the integumentary system and related conditions

HHAs should know these facts about pressure injuries:

- A wound that results from skin breakdown
- Immobility, warmth, and moisture contribute to skin breakdown
- Classified by stages
- Painful and difficult to heal
- Prevention through careful observation, skin care, and frequent changes of position is extremely important

Key Material 9-2: Pressure Injury Danger Zones



1. Describe the integumentary system and related conditions

Think about this question:

Which clients do you think are at the greatest risk for pressure injuries?

1. Describe the integumentary system and related conditions

Remember:

Prevention is essential to preventing pressure injuries.

1. Describe the integumentary system and related conditions

Define the following terms:

wound

a type of injury to the skin.

1. Describe the integumentary system and related conditions

HHAs should know these facts about wounds:

- A wound is a type of injury to skin; it can either be open or closed
- Wounds are examined and cleaned with various solutions, such as tap water, sterile saline, or antiseptic solution
- Bleeding may need to be stopped
- Dressings, bandages, sutures, staples, or special strips/glue may need to be applied

1. Describe the integumentary system and related conditions

Define the following terms:

dermatitis

a general term that refers to an inflammation of the skin.

inflammation

swelling.

stasis dermatitis

skin condition that occurs due to a buildup of fluid under the skin, causing problems with circulation.

1. Describe the integumentary system and related conditions

HHAs should know these facts about stasis dermatitis:

- Commonly affects lower legs and ankles
- Occurs due to fluid build-up under skin
- Can lead to severe skin problems
- Early signs include rash, scaly, red areas, and itching
- Other signs include swelling of legs and ankles; thin, tissue-like skin; darkening/thickening of skin at ankles; skin irritation; and leg pain. These signs must be reported
- Treatment includes surgery for varicose veins and medications to reduce fluids in body
- May need to apply elastic stockings to promote circulation
- Client may be on low-sodium diet

Critical Thinking: Case Study

Read the following case study and, with a partner, discuss the answers to the questions on the next two slides:

Mrs. T is a 90-year-old client who fell and fractured her left hip. Her physician has ordered physical therapy to keep her muscles strong and joints flexible. She has been confined to bed for several weeks, unable to put any body weight on her legs and hip. The therapist will not be ambulating her for two more weeks. You are assigned to visit her daily to bathe her and to provide measures to prevent skin breakdown. On your first visit, you turn her onto her side and discover a very reddened area on the sacrum.

Critical Thinking: Case Study (cont'd)

- What should you do? What would you expect to see on the care plan in terms of your daily tasks?
- Why is she at greater-than-average risk for pressure injuries? What preventive measures would you use?
- Her daughter, who has been her primary caregiver at home, must go back to her own family. Does this present a problem for the client, the agency, the nurse, or the aide? Who should be notified of this change in her home status?

Critical Thinking: Case Study (cont'd)

- How would you know if she can be turned onto both sides?
- What changes should be reported immediately to your supervisor?
- Into what positions could she be placed?
- Would nights without a caregiver be a particular risk for Mrs. T? Why or why not?

2. Describe the musculoskeletal system and related conditions

Define the following terms:

bones

rigid connective tissue that makes up the skeleton, protects organs, and allow the body to move.

joints

the place at which two bones meet.

muscles

groups of tissues that provide movement of body parts, protection of organs, and creation of body heat.

2. Describe the musculoskeletal system and related conditions

Define the following terms:

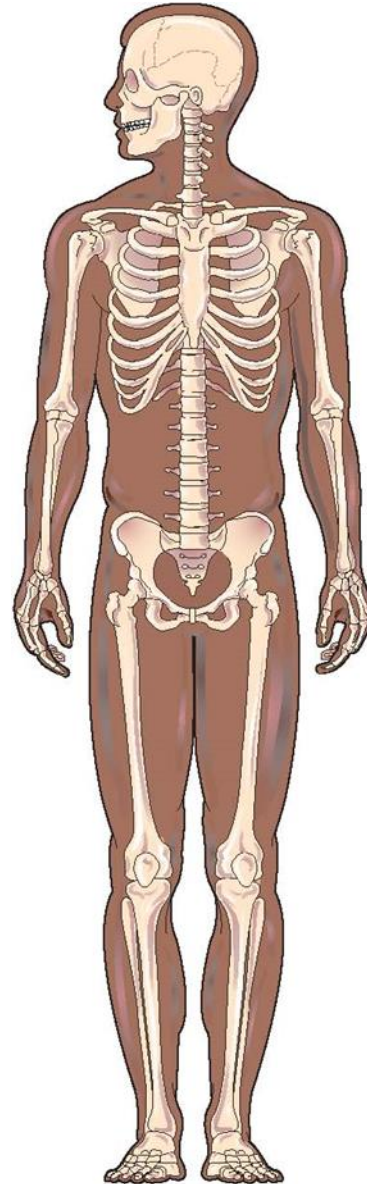
atrophy

the wasting away, decreasing in size, and weakening of muscles from lack of use.

contracture

the permanent and often painful shortening of a muscle or tendon, usually due to a lack of activity.

Key Material 9-3: The Musculoskeletal System



2. Describe the musculoskeletal system and related conditions

HHAs should understand these points about the musculoskeletal system:

- Human body has 206 bones.
- Two bones meet at joint (for movement). Joints make movement possible in either all directions or in one direction only.
- Muscles provide movement and produce body heat.
- Physical activity/exercise increases circulation, increasing blood flow to organs and tissues.
- Inactivity causes depression, pneumonia, urinary tract infection, constipation, loss of self-esteem, dulling of the senses, and blood clots.
- Muscles develop atrophy or contractures from inactivity.
- ROM exercises help prevent muscle atrophy or contractures.

2. Describe the musculoskeletal system and related conditions

Observe and report the following:

- Changes in movement and activity
- Changes in ability to do range of motion exercises
- Pain during movement
- New or increased swelling of joints
- White, shiny, red, or warm joints
- Bruising
- Aches and pains reported by client

2. Describe the musculoskeletal system and related conditions

Disorders of the musculoskeletal system include the following:

- Arthritis
- Autoimmune illness
- Osteoporosis
- Rheumatoid arthritis

2. Describe the musculoskeletal system and related conditions

Define the following terms:

arthritis

a general term that refers to inflammation of the joints.

autoimmune illness

an illness in which the body's immune system attacks normal tissue in the body

2. Describe the musculoskeletal system and related conditions

Define the following terms:

osteoarthritis

a common type of arthritis that usually affects hips, knees, and joints of the fingers, thumbs, and spine; also called *degenerative arthritis* or *degenerative joint disease (DJD)*.

rheumatoid arthritis

a type of arthritis in which joints become inflamed, red, swollen, and very painful, resulting in restricted movement and possible deformities.

2. Describe the musculoskeletal system and related conditions

HHA's should know these facts about arthritis:

- Arthritis is an inflammation of the joints, causing stiffness, pain, and decreased mobility
- Arthritis may be caused by aging, injury, or autoimmune illness.
- Two types are osteoarthritis and rheumatoid arthritis.
- Pain and stiffness increase in cold or damp weather.

2. Describe the musculoskeletal system and related conditions

Treatment for arthritis may include the following:

- Anti-inflammatory medications (aspirin or ibuprofen) or other medications
- Local applications of heat
- ROMs
- Exercise or activity routine
- Dietary changes

Key Material 9-4: Care Guidelines for Arthritis

- Watch for stomach irritation or heartburn caused by anti-inflammatory medications.
- Encourage activity.
- Adapt ADLs to allow independence.
- Choose clothing that is easy to put on and fasten.
- Treat each client as an individual.
- Help maintain client's self-esteem by encouraging self-care.

2. Describe the musculoskeletal system and related conditions

Define the following terms:

osteoporosis

a disease that causes bones to become porous and brittle, causing them to break easily

menopause

the end of menstruation; occurs when a woman has not had a menstrual period for 12 months.

2. Describe the musculoskeletal system and related conditions

HHAs should know these facts about osteoporosis:

- Bones lose density, causing them to become brittle
- Osteoporosis may be caused by a lack of calcium in the diet, the loss of estrogen, a lack of regular exercise, reduced mobility, or age
- More common in women, especially after menopause
- Signs and symptoms include low back pain, stooped posture, loss of height, and fractures
- Treatment includes medication, exercise, and supplements

2. Describe the musculoskeletal system and related conditions

Define the following term:

muscular dystrophy

a progressive, inherited disease that causes a gradual wasting away of muscle, weakness, and deformity.

2. Describe the musculoskeletal system and related conditions

HHA's should know these facts about muscular dystrophy (MD):

- Refers to a number of progressive diseases that cause a variety of physical disabilities due to muscle weakness
- MD is inherited
- It causes gradual wasting away of muscle, weakness, and deformity
- Most forms are present at birth
- HHA should help with ADLs or ROM exercises
- HHA should observe and report swallowing problems
- HHA should help with skin care and positioning

2. Describe the musculoskeletal system and related conditions

Define the following term:

amyotrophic lateral sclerosis (ALS)

a progressive disease that causes muscle atrophy and eventually leads to death; also called *Lou Gehrig's disease*.

3. Describe the nervous system and related conditions

Review these facts about amyotrophic lateral sclerosis (ALS):

- ALS is a progressive disease that causes muscle atrophy and eventually leads to death
- Average time a person lives with ALS is two to five years
- Physical disabilities get worse, and eventually the person has to breathe and be fed through ventilators and tubes
- HHA should help with ADLs or ROM exercises
- HHA should observe and report swallowing problems.
- HHA should help with skin care and positioning

Critical Thinking: Case Study

Read the following case study and then, with a partner, answer the questions on the next slide:

Mrs. T, who was discussed in the last learning objective, has arthritis and osteoporosis. Her osteoporosis was most likely a great factor in the fracture of her hip when she fell. Her bones are very porous and brittle, which will make her more likely to sustain fractures from injuries. Her arthritis affects her hands, back, and knees.

Critical Thinking: Case Study

- What will this mean to her physical therapist when it is time for her to ambulate?
- Will her pain level have to be considered when moving and positioning her in bed?
- What will the HHA observe Mrs. T for every day?

3. Describe the nervous system and related conditions

Define the following terms:

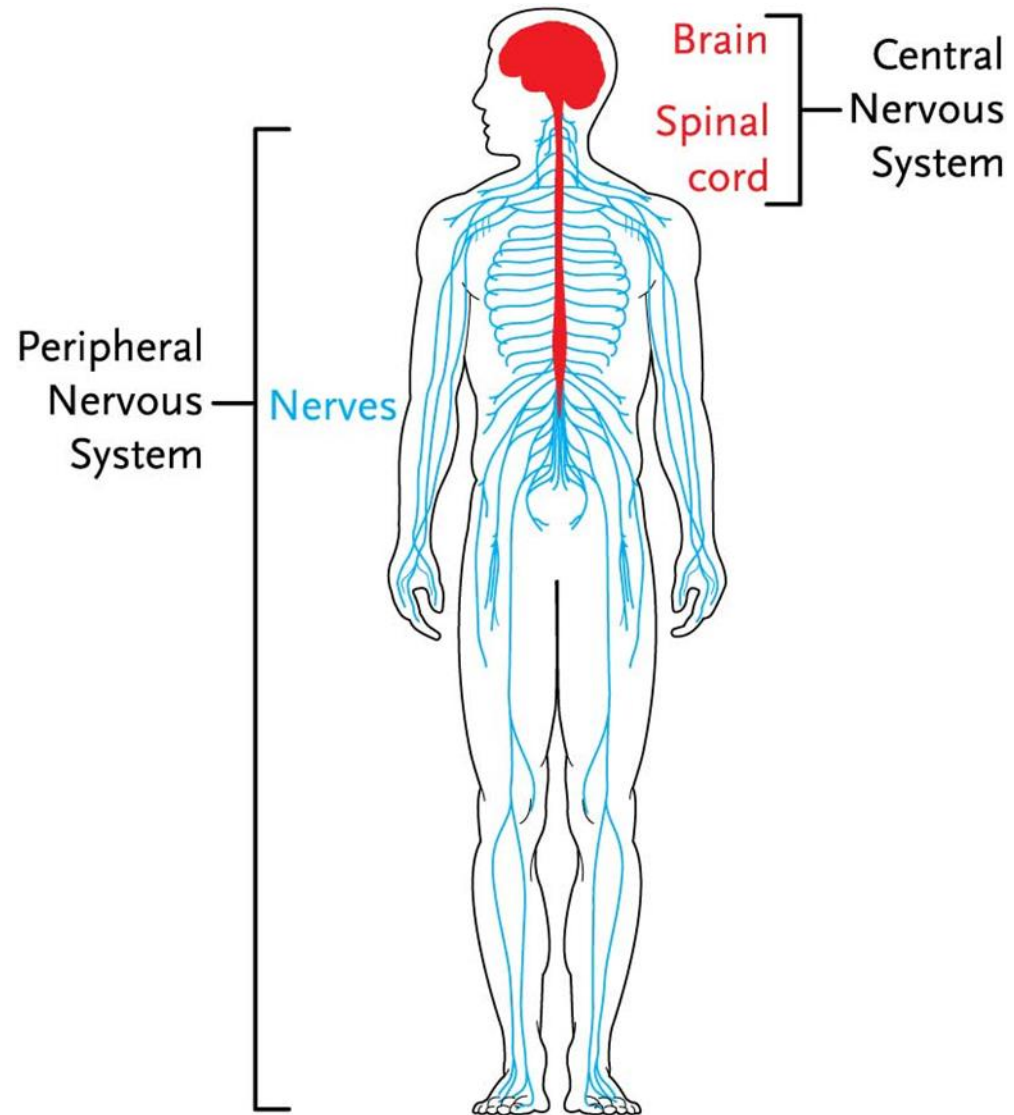
central nervous system (CNS)

part of the nervous system that is composed of the brain and spinal cord.

peripheral nervous system (PNS)

part of the nervous system made up of the nerves that extend throughout the body.

Key Material 9-5: The Nervous System



3. Describe the nervous system and related conditions

HHAs should remember these points about the nervous system:

- Control and message center of body
- Controls and coordinates all body functions
- Senses information from environment
- Two main parts: central nervous system (brain and spinal cord) and peripheral nervous system (nerves)

3. Describe the nervous system and related conditions

Observe and report the following signs and symptoms:

- Fatigue or pain with movement
- Shaking or trembling
- Inability to move one side of body
- Difficulty speaking or slurring of speech
- Numbness or tingling
- Disturbance or change in vision or hearing
- Dizziness or loss of balance

3. Describe the nervous system and related conditions

Observe and report the following signs and symptoms (cont'd):

- Changes in eating or fluid intake
- Difficulty swallowing
- Bowel and bladder changes
- Depression or mood changes
- Memory loss or confusion
- Violent behavior
- Unusual change in behavior
- Decreased ability to perform ADLs

3. Describe the nervous system and related conditions

Disorders of the nervous system include the following:

- CVA/stroke
- Parkinson's disease
- Multiple sclerosis (MS)
- Head and spinal cord injuries
- Amputation
- Sense organs
- Hearing impairment
- Vision impairment

3. Describe the nervous system and related conditions

Define the following terms:

cerebrovascular accident (CVA)

a condition that occurs when blood supply to a part of the brain is blocked or a blood vessel leaks or ruptures within the brain; also called *stroke*.

transient ischemic attack (TIA)

a warning sign of a cerebrovascular accident that results from a temporary lack of blood supply to the brain.

hemiplegia

paralysis on one side of the body.

hemiparesis

arm numbness or weakness, especially on one side.

3. Describe the nervous system and related conditions

Define the following terms:

expressive aphasia

slurred speech or the inability to speak.

receptive aphasia

the inability to understand spoken or written words.

emotional lability

inappropriate or unprovoked emotional responses, including laughing, crying, and anger.

dysphagia

difficulty swallowing.

involved side

term used to refer to the weaker, or affected, side of the body after a stroke or injury.

3. Describe the nervous system and related conditions

HHAs should know these facts about CVA/stroke:

- Caused when blood supply to brain is blocked or a blood vessel leaks or ruptures within the brain
- Results in lack of oxygen to tissue, causing cells to die
- Swelling, leaking blood, and clots affect surrounding healthy brain tissue
- Quick response is critical
- TIA is a warning sign of CVA
- Weakness occurs opposite affected side of brain

Key Material 9-6: Care Guidelines for Stroke

- Assist with exercises as ordered, keeping safety in mind
- Use terms *weaker* or *involved*, not *bad*
- Assist with speech therapy as needed
- Clients may experience confusion, memory loss, and changing emotions. Be positive and keep a routine
- Encourage independence and self-esteem
- Always check on client's body alignment
- Pay special attention to skin care
- If clients have lost sense of touch or sensation, be aware of potentially harmful situations, such as proximity to heat and sharp objects.
- Adapt procedures when caring for clients with one-sided paralysis or weakness.
- When assisting with transfers or walking, use a gait belt. Stand on and support the weaker side. Lead with the stronger side.

Key Material 9-6: Care Guidelines for Stroke (cont'd)

For assisting with dressing:

- Dress weaker side first. Undress stronger side first
- Use assistive equipment to help client dress himself

For assisting with eating:

- Place food in client's field of vision
- Use assistive devices
- Watch for signs of choking and report problems with swallowing
- Always place food in unaffected side of mouth. Make sure food is swallowed

For assisting with communication:

- Keep questions and directions simple
- Phrase questions that can be answered with a "yes" or "no"
- Agree on signals
- Give clients plenty of time to respond
- Use a pencil and paper if possible

Key Material 9-6: Care Guidelines for Stroke (cont'd)

Assisting with communication (cont'd)

- Use verbal and nonverbal communication to express positive attitude
- Use communication boards or special cards
- Keep call signal within reach
- Do not talk about clients if they were not there

For assisting with positioning:

- Encourage use of weaker side. Use strong arm or leg to assist with range of motion exercises. Roll client onto strong side first. Use strong foot under involved ankle for moving leg
- Support involved shoulder
- Position involved side correctly

3. Describe the nervous system and related conditions

These safety tips are especially important when caring for a client with a nervous system condition:

- Report hazards such as clutter to the supervisor
- Unplug appliances when not in use
- Check for spoiled food

3. Describe the nervous system and related conditions

Think about this question:

Why do you think the safety tips on the last slide are especially important when caring for a client who has had a stroke?

3. Describe the nervous system and related conditions

Define the following term:

Parkinson's disease

a progressive, incurable disease that causes the brain to degenerate, affecting muscle function and causing stooped posture, shuffling gait, pill-rolling, and tremors.

3. Describe the nervous system and related conditions

HHAs should know these facts about Parkinson's disease:

- Progressive, incurable, degenerative disease
- Causes stiff muscles, stooped posture, shuffling gait, pill-rolling, tremors, and mask-like facial expression
- Tremors can make ADLs difficult
- Treatment includes medications and sometimes surgery

Key Material 9-7: Care Guidelines for Parkinson's Disease

- Protect clients from any unsafe areas and conditions. Assist with ambulation as necessary
- Help with activities of daily living as needed
- Assist with range of motion exercises as ordered
- Observe and report swallowing problems
- Check for spoiled food
- Encourage self-care and be patient
- Listen to clients and report signs of depression

3. Describe the nervous system and related conditions

Define the following terms:

multiple sclerosis (MS)

a progressive disease in which the myelin sheath breaks down over time; without this protective covering, nerves cannot conduct impulses to and from the brain in a normal way.

myelin sheath

the protective covering of the nerves, spinal cord, and white matter of the brain.

3. Describe the nervous system and related conditions

HHAs should know these facts about multiple sclerosis:

- MS is a progressive disease affecting the central nervous system
- Protective sheath breaks down over time and nerves cannot send messages properly
- Clients will have varying abilities
- Symptoms can include blurred vision, fatigue, tremors, poor balance, trouble walking, weakness, numbness, tingling, incontinence, and behavior changes
- MS can cause blindness, contractures, and loss of function in arms and legs

Key Material 9-8: Care Guidelines for Multiple Sclerosis

- Help with activities of daily living. Be patient with self-care and movement. Allow time for tasks. Offer rest periods
- Give client time to communicate
- Prevent falls
- Help avoid stressful situations. Listen to clients
- Offer support and encouragement, and adapt care to the symptoms reported
- Encourage a healthy diet
- Give regular skin care
- Assist with range of motion exercises
- Assist with housekeeping as needed

3. Describe the nervous system and related conditions

Define the following terms:

paresis

weakness or loss of ability on one side of the body.

paralysis

loss of muscle function.

paraplegia

the loss of function of the lower body and legs.

quadriplegia

the loss of function of the legs, trunk, and arms.

3. Describe the nervous system and related conditions

HHAs should know these facts about head and spinal cord injuries:

- May result from diving, sports injuries, falls, car and motorcycle accidents, industrial accidents, war, and criminal violence
- Can cause permanent brain damage, intellectual disabilities, personality changes, trouble breathing, seizures, coma, memory loss, loss of consciousness, paresis, paralysis
- Effects of spinal cord injuries depend on force of impact and where spine is injured
- May cause paraplegia or quadriplegia
- Rehabilitation is needed
- Emotional support is important

Key Material 9-9: Care Guidelines for Head and Spinal Cord Injuries

- Give emotional, as well as physical, support
- Prevent falls and burns
- Be patient with self-care
- Give careful skin care
- Assist with position changes at least every two hours
- Perform passive range of motion exercises
- Encourage fluids and a high-fiber diet to prevent constipation
- Give extra catheter care as needed and encourage high intake of fluids
- Offer rest periods as needed.
- Use elastic/antiembolic stockings as ordered
- Encourage deep breathing exercises as ordered
- Provide for privacy if involuntary erections occur
- Assist with bowel and bladder training

3. Describe the nervous system and related conditions

Define the following terms:

amputation

the surgical removal of some or all of a body.

phantom sensation

warmth, itching, or tingling from a body part that has been amputated.

phantom limb pain

pain in a limb (or extremity) that has been amputated.

3. Describe the nervous system and related conditions

HHAs should know these facts about caring for a client who has an amputation:

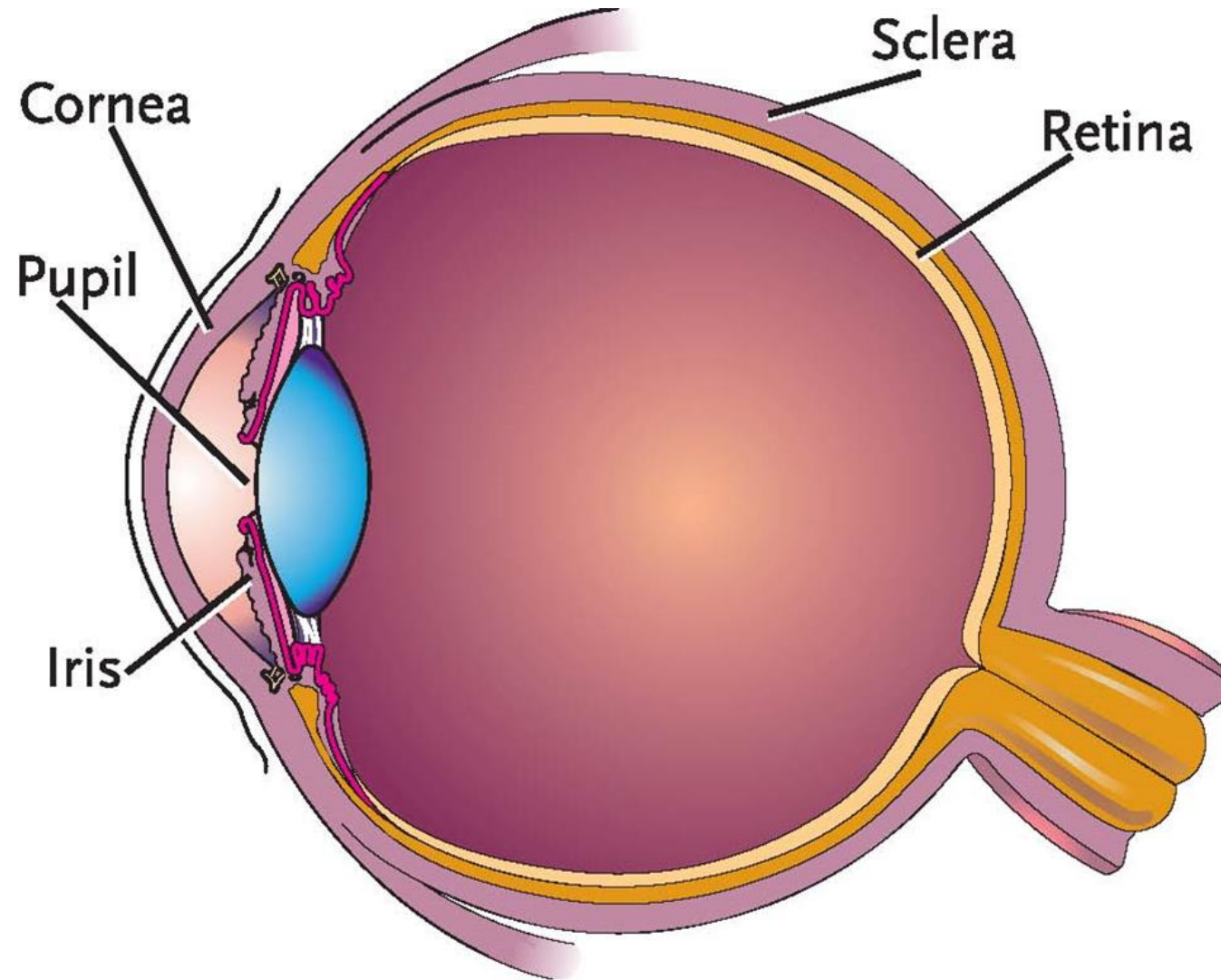
- Be supportive during adjustment
- Assist clients with ADLs
- Assist with regular changes of position
- Perform range of motion exercises as instructed
- Report complaints of pain
- Follow the care plan's instructions for prosthetic care

3. Describe the nervous system and related conditions

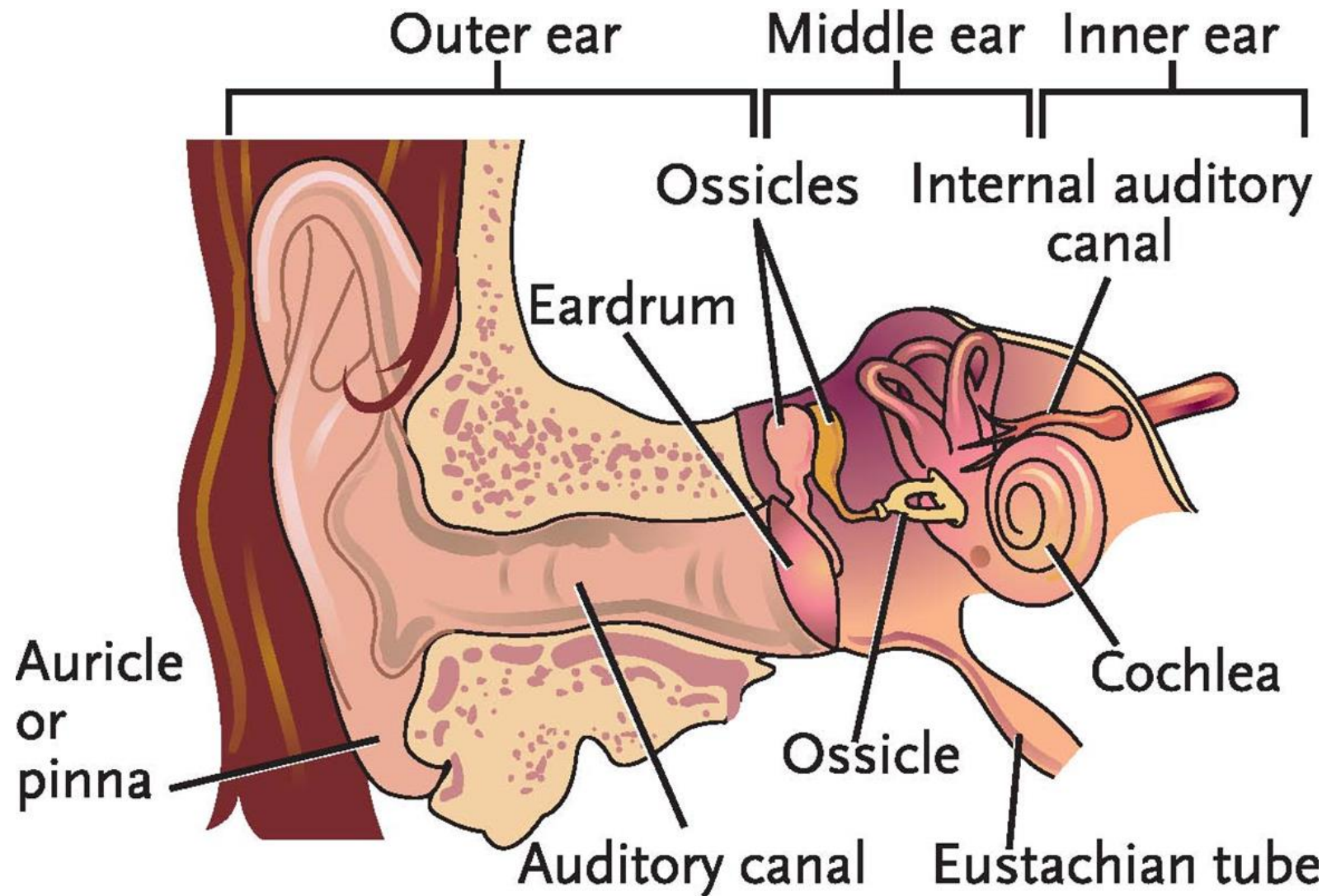
Sense Organs:

- Eyes include sclera, cornea, iris, pupil and retina
- Ears include outer ear (auricle, auditory canal, eardrum), middle ear (eustachian tube and ossicles), and inner ear (transfers messages to brain and controls balance)
- The other sense organs include nose, tongue, and skin

Key Material 9-10: Parts of the Eye



Key Material 9-11: Parts of the Ear



3. Describe the nervous system and related conditions

Observe and report the following:

- Changes in vision or hearing
- Signs of infection
- Dizziness
- Complaints of pain

3. Describe the nervous system and related conditions

Define the following terms:

deafness

partial or complete loss of hearing.

otitis media

an infection of the middle ear that that can cause pain, pressure, fever, and a reduced ability to hear.

3. Describe the nervous system and related conditions

Disorders of the sense organs include the following:

- Hearing impairment
- Vision impairment

3. Describe the nervous system and related conditions

HHAs should know these facts about hearing impairment:

- A person may be born with a hearing impairment or it can happen gradually
- Aging commonly causes a loss of hearing, as well as impaired vision, smell, and taste

3. Describe the nervous system and related conditions

Signs of hearing loss include the following:

- Speaking loudly
- Leaning forward when someone is speaking
- Cupping the ear to hear better
- Responding inappropriately
- Asking the speaker to repeat what has been said
- Speaking in a monotone
- Avoiding social gatherings, acting irritable in the presence of other people, or suspecting others of talking about them

3. Describe the nervous system and related conditions

Care guidelines for hearing impairment:

- Make sure hearing aid is on and working
- Reduce or remove noise
- Get clients' attention first
- Speak clearly, slowly, and in good lighting
- Directly face the client and ask if he can hear what you are saying
- Do not shout or mouth words in an exaggerated way
- Lower pitch of voice
- Do not eat or chew gum while talking.
- Keep hands away from face while talking

3. Describe the nervous system and related conditions

Care guidelines for hearing impairment (cont'd):

- Speak to side with better hearing
- Use short sentences and simple words
- Repeat what was said, using different words if necessary
- Use picture cards or notepads
- Be patient and empathetic
- Do not pretend to understand if you do not. Ask the client to repeat what was said, then tell the client what you think you heard
- Be understanding and supportive

3. Describe the nervous system and related conditions

Define the following terms:

farsightedness

the ability to see objects in the distance better than objects nearby; also called *hyperopia*.

nearsightedness

the ability to see objects nearby more clearly than objects far away; also called *myopia*.

cataract

a condition in which cloudy spots develop in the lens of the eye, causing vision loss.

glaucoma

a condition in which the fluid inside the eyeball is unable to drain; increased pressure inside the eye causes damage that often leads to blindness.

3. Describe the nervous system and related conditions

HHAs should know these facts about vision impairment:

- Vision impairment can affect people of all ages.
- Some clients may wear eyeglasses or contacts.
- People over 40 are at risk for developing cataracts, glaucoma, and blindness.
- Cataracts may be corrected surgically.
- Glaucoma can occur suddenly or gradually, and is treated with medication and sometimes surgery.

3. Describe the nervous system and related conditions

Care guidelines for vision impairment:

- Encourage the use of eyeglasses or contact lenses (contacts) if worn
- Make sure eyeglasses are clean
- Leave contact lens care to the client if possible
- Identify yourself when entering and leaving the room
- Provide adequate lighting
- Orient client to new areas
- Use imaginary clock as a guide
- Do not move items. Put anything you move back where it was found
- Leave door completely open or closed.

3. Describe the nervous system and related conditions

Care guidelines for vision impairment (cont'd):

- Walk slightly ahead of client while he touches your arm
- Cut foods and open containers as needed
- Use large clocks, clocks that chime, and radios to help keep track of time
- Large-print books and books in Braille as needed.
- Use large clocks or clocks that chime, and radios to help keep track of time
- Large-print books, audiobooks, digital books, and Braille books are available
- Encourage use of other senses

4. Describe the circulatory system and related conditions

Define the following terms:

ventricles

the two lower chambers of the heart.

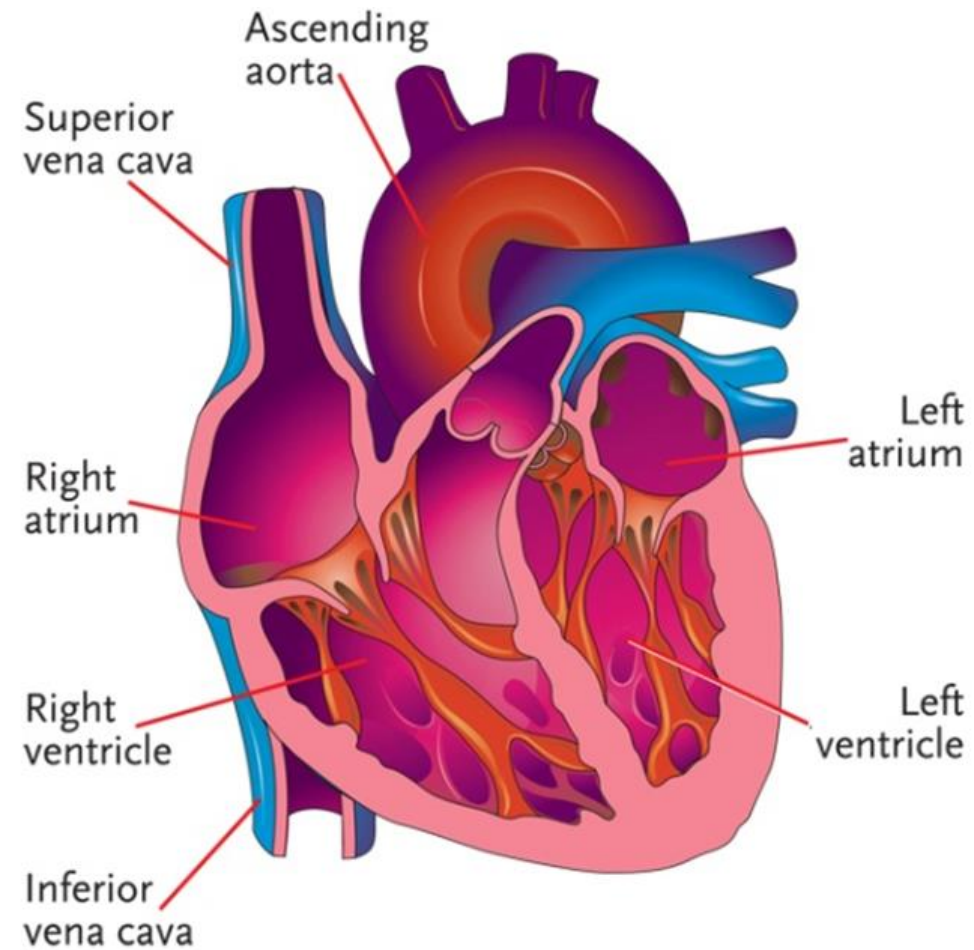
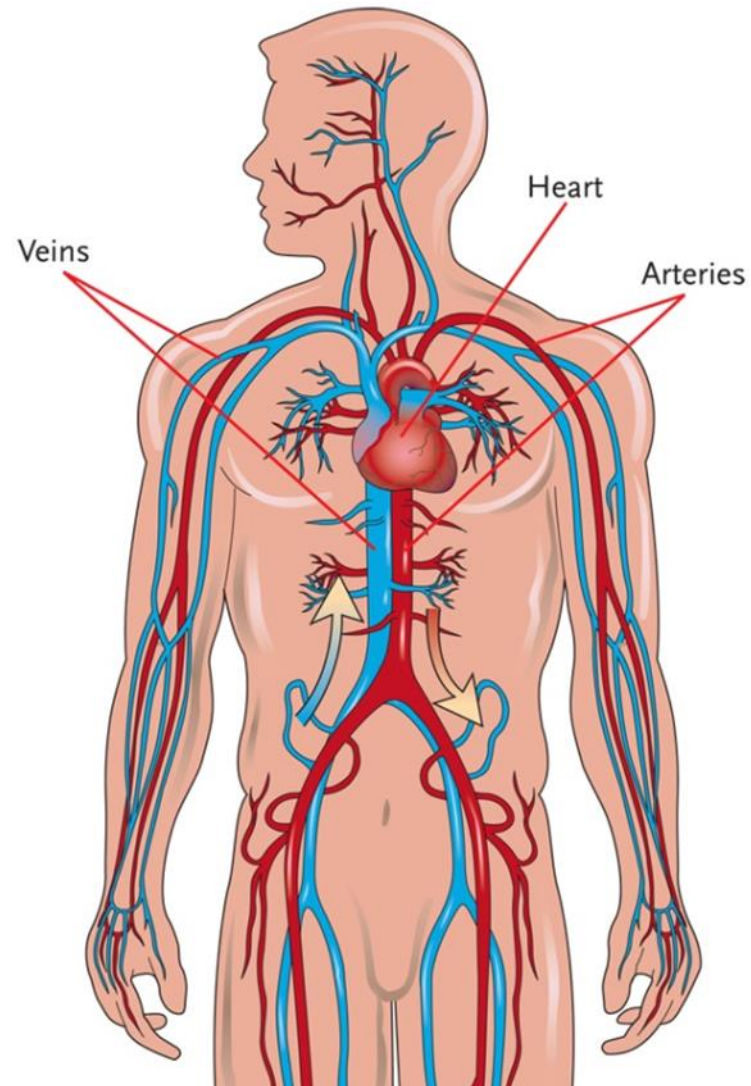
systole

phase where the heart is at work, contracting and pushing blood out of the left ventricle.

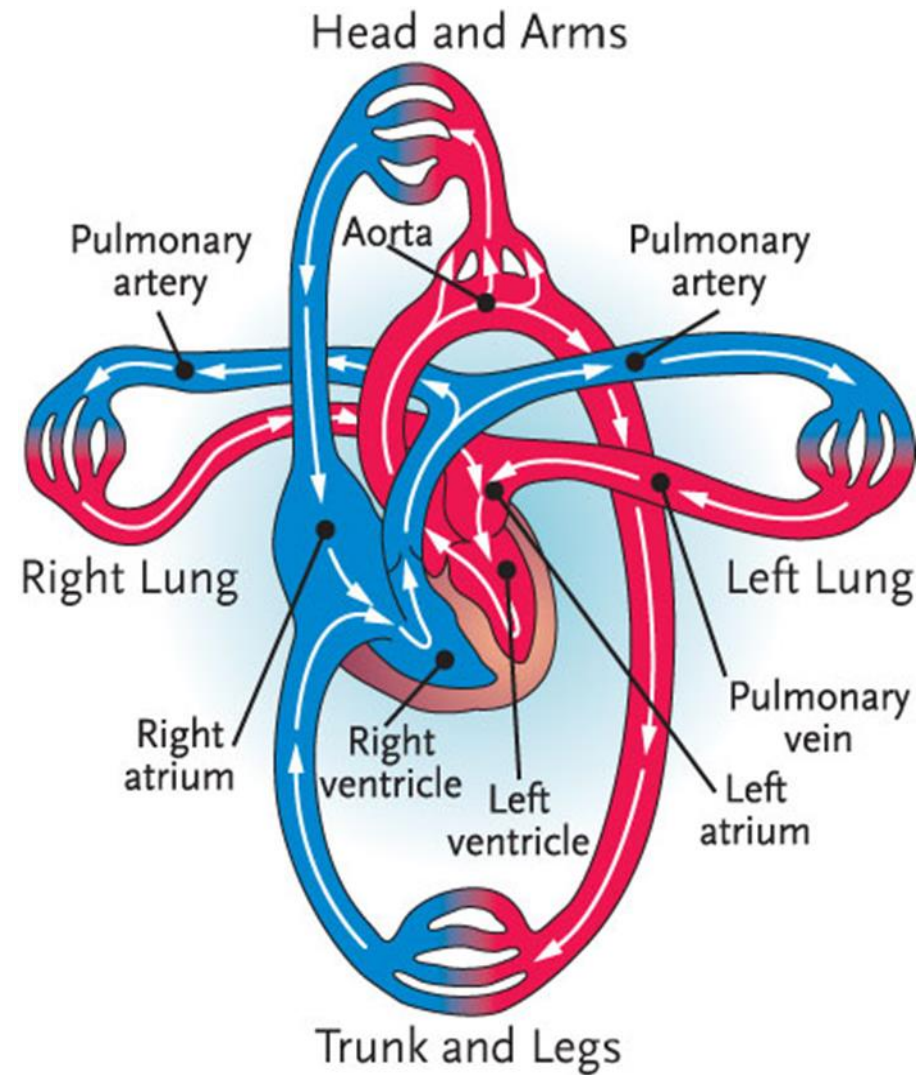
diastole

phase when the heart relaxes or rests.

Key Material: 9-12: The Circulatory System



Key Material: 9-13: Flow of Blood



4. Describe the circulatory system and related conditions

Understand these points about the circulatory system:

- Made up of heart, blood vessels, and blood
- Blood carries food, oxygen, and hormones to cells
- Major functions are to:
 - Supply food, oxygen, and hormones to cells
 - Produce and supply antibodies
 - Remove waste products from cells
 - Help control body temperature
- Heart has four chambers (two atria/upper chambers and two ventricles/lower chambers)
- Heart functions in two phases: resting phase— diastole (chambers fill with blood) and contracting phase—systole (ventricles pump blood)

4. Describe the circulatory system and related conditions

Observe and report the following:

- Changes in pulse rate
- Weakness or fatigue
- Loss of ability to perform activities of daily living
- Swelling of ankles, feet, fingers, or hands
- Pale or blue hands, feet, or lips
- Chest pain
- Weight gain
- Shortness of breath, changes in breathing patterns, inability to catch breath
- Severe headache
- Inactivity, which can lead to circulatory problems

4. Describe the circulatory system and related conditions

Disorders of the circulatory system include the following:

- Hypertension
- Coronary artery disease
- Myocardial infarction
- Congestive heart failure
- Peripheral vascular disease (PVD)

Key Material: 9-14: Common Circulatory Disorders

Hypertension (HTN)

- Causes: atherosclerosis, kidney disease, adrenal tumors, pregnancy, or certain medications
- Symptoms: headache, blurred vision, dizziness
- Care: medication, exercise, low-fat/low-sodium diet

Coronary Artery Disease (CAD)

- Cause: vessels in coronary arteries narrow, reducing blood flow to heart
- Symptom: angina pectoris (chest pain, pressure, or discomfort)
- Care: rest, nitroglycerin, and avoiding overeating, overexertion, and extreme weather exposure

Key Material: 9-14: Common Circulatory Disorders (cont'd)

Myocardial Infarction (MI)

- Cause: block of blood flow to heart muscle
- Symptoms: sudden severe pain, pressure, or squeezing in chest; pain or discomfort; indigestion; nausea and vomiting; dyspnea; dizziness; cyanosis; perspiration; cold, clammy skin; weak irregular pulse; low blood pressure; anxiety; sense of doom; and denial of heart problem
- Immediate care: emergency care, CPR. Later care: cardiac rehabilitation, including low-fat, low-sodium, and low-cholesterol diet; exercise program; medications; regular blood testing; quitting smoking; avoiding cold temperatures; and stress management program

Key Material: 9-14: Common Circulatory Disorders (cont'd)

Congestive Heart Failure (CHF)

- Cause: failure of heart muscle to pump due to damage
- Symptoms: fatigue, rapid or irregular heartbeat, shortness of breath, dizziness, weakness, edema, increased urination at night, and weight gain
- Care: medications, fluid reduction, low-sodium diet, limited activity, intake and output measurements, weight measurements, elastic stockings, range of motion exercises, and extra pillows

Key Material: 9-14: Common Circulatory Disorders (cont'd)

Peripheral Vascular Disease (PVD)

- Review the following facts about PVD:
- Cause: fatty deposits in the blood vessels that harden over time
- Symptoms: legs, feet, arms, and hands feel cold; nail beds and/or feet become ashen or blue; swelling in hands and feet; ulcers may develop on legs and feet; pain can be severe when walking
- Care: quitting smoking, medications, exercise, surgery

4. Describe the circulatory system and related conditions

Define the following terms:

hypertension (HTN)

high blood pressure, regularly measuring 130/80 mm Hg or higher.

atherosclerosis

a hardening and narrowing of the blood vessels.

diuretics

medications that reduce fluid volume in the body.

4. Describe the circulatory system and related conditions

HHAs should know these facts about hypertension (HTN):

- Causes: atherosclerosis, kidney disease, adrenal tumors, pregnancy, certain medications
- Symptoms: headache, blurred vision, dizziness
- Care: medication, exercise, low-fat/low-sodium diet

4. Describe the circulatory system and related conditions

Define the following terms:

angina pectoris

chest pain, pressure, or discomfort.

nitroglycerin

a medication that relaxes the walls of the coronary arteries, allowing them to open and get more blood to the heart.

4. Describe the circulatory system and related conditions

HHAs should know these facts about coronary artery disease (CAD):

- Cause: vessels in coronary arteries narrow, reducing blood flow to heart
- Symptom: angina pectoris
- Care: rest, medication such as nitroglycerin; avoiding overeating, overexertion, and extreme weather exposure

4. Describe the circulatory system and related conditions

Define the following term:

myocardial infarction (MI)

a condition in which blood flow to the heart is blocked and muscle cells die; also called *heart attack*.

4. Describe the circulatory system and related conditions

HHAs should know these facts about myocardial infarction (MI):

- Cause: block of blood flow to heart muscle
- Symptoms: sudden severe pain, pressure, or squeezing in chest; pain or discomfort; indigestion; nausea and vomiting; dyspnea; dizziness; cyanosis; perspiration; cold, clammy skin; weak, irregular pulse; low blood pressure; anxiety; sense of doom; and denial of heart problem
- Care: immediate emergency care, CPR; later care is cardiac rehabilitation, including low-fat, low-sodium, and low-cholesterol diet; exercise program; medications; regular blood testing; quitting smoking; avoiding cold temperatures; and stress management program; and mental health care for depression and anxiety

4. Describe the circulatory system and related conditions

Define the following term:

congestive heart failure (CHF)

a condition in which the heart muscle is damaged and fails to pump effectively.

4. Describe the circulatory system and related conditions

HHAs should know these facts about congestive heart failure (CHF):

- Cause: failure of heart muscle to pump due to damage
- Symptoms: fatigue, rapid or irregular heartbeat, shortness of breath, dizziness, weakness, edema, increased urination at night, and weight gain
- Care: medications, fluid reduction, low-sodium diet, limited activity, intake and output measurements, weight measurements, elastic stockings, ROM exercises, and extra pillows

4. Describe the circulatory system and related conditions

Define the following term:

peripheral vascular disease (PVD)

a disease in which the legs, feet, arms, or hands do not have enough blood circulation.

4. Describe the circulatory system and related conditions

HHAs should know these facts about peripheral vascular disease (PVD):

- Cause: fatty deposits in the blood vessels that harden over time
- Symptoms: legs, feet, arms, and hands feel cold; nail beds and/or feet become ashen or blue; swelling in hands and feet; ulcers may develop on legs and feet; pain can be severe when walking
- Care: quitting smoking, medications, exercise, surgery

Critical Thinking: Case Study

Read the following case study and then, together with a partner, answer the questions on the next slide:

Mrs. H had an MI three weeks ago and has just been discharged from the hospital. You will be visiting her several days a week to assist in her rehabilitation toward caring for herself. This was her first heart attack, and she is extremely anxious about having another one, as her physician says it would lead to open heart surgery.

Critical Thinking: Case Study

What do you know about causes of a heart attack?

What signs and symptoms are important for Mrs. H, the family, and you to watch for and report quickly?

What other complaints are often confused with heart attacks?

Do you believe your support of this client will be important to her future health?

How could you better prepare for the role you will be playing?

5. Describe the respiratory system and related conditions

Define the following terms:

respiration

the process of inhaling air into the lungs (inspiration) and exhaling air out of the lungs (expiration).

inspiration

the process of inhaling air into the lungs.

expiration

the process of exhaling air out of the lungs.

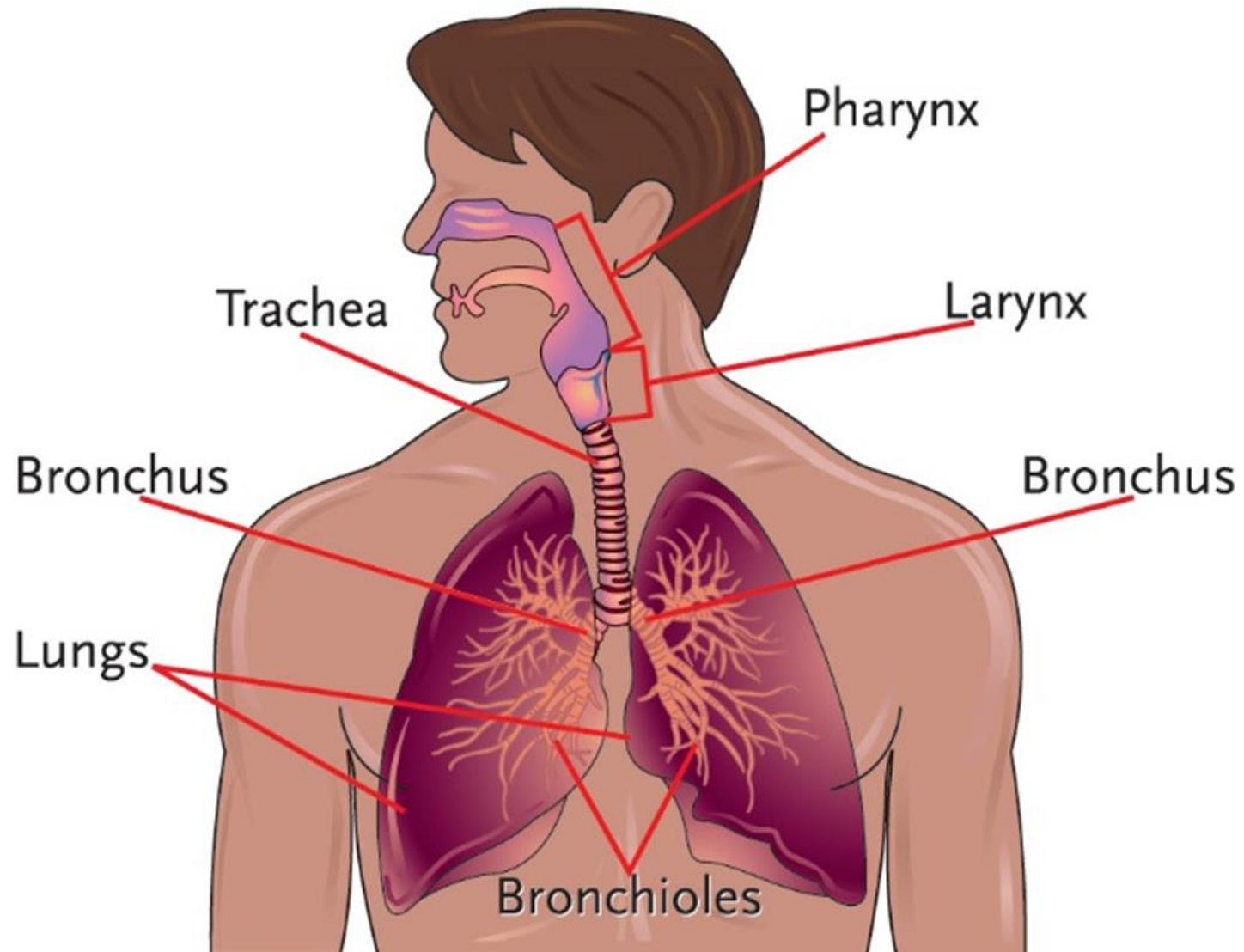
sputum

thick mucus coughed up from the lungs.

Key Material 9-15: The Respiratory System

9

Body Systems and Related Conditions



5. Describe the respiratory system and related conditions

The respiratory system has two functions:

- To bring oxygen into body
- To eliminate carbon dioxide

5. Describe the respiratory system and related conditions

Observe and report the following:

- Changes in respiratory rate
- Shallow breathing or pursed-lip breathing
- Coughing or wheezing
- Nasal congestion or discharge
- Sore throat, difficulty swallowing, or swollen tonsils
- Need to sit after mild exertion
- Pale, bluish, or gray lips or extremities
- Pain in chest
- Discolored sputum

5. Describe the respiratory system and related conditions

Disorders of the respiratory system include the following:

- Chronic obstructive pulmonary disease (COPD)
- Asthma
- Upper respiratory infection (URI)
- Lung cancer
- Tuberculosis
- COVID-19

5. Describe the respiratory system and related conditions

Define the following terms:

chronic obstructive pulmonary disease (COPD)

a chronic, progressive, incurable lung disease that causes difficulty breathing.

bronchitis

an irritation and inflammation of the lining of the bronchi.

emphysema

a chronic lung disease that usually develops as a result of chronic bronchitis and cigarette smoking.

pneumonia

acute inflammation in the lung tissue caused by a bacterial, viral, or fungal infection.

5. Describe the respiratory system and related conditions

HHAs should know these facts about COPD:

- Chronic disease
- Two lung diseases grouped under COPD:
 - Chronic bronchitis
 - Emphysema
- High risk for lung infections
- All body systems affected
- Symptoms: chronic cough or wheeze; difficulty breathing; shortness of breath; pale, cyanotic skin or reddish-purple skin; confusion; weakness; difficulty completing meals; fear and anxiety

5. Describe the respiratory system and related conditions

Remember:

Clients with COPD may live with a constant fear of not being able to breathe. They may fear suffocation.

Key Material 9-16: Care Guidelines for COPD

- Observe and report symptoms getting worse
- Help client sit upright
- Offer plenty of fluids and small, frequent meals
- Encourage well-balanced diet
- Keep oxygen supply available
- Be calm and supportive
- Use proper infection prevention practices
- Encourage independence
- Remind clients to avoid exposure to infection
- Encourage pursed-lip breathing
- Encourage rest

Key Material 9-16: Care Guidelines for COPD (cont'd)

Report any of the following:

- Temperature over 101°F
- Changes in breathing patterns
- Changes in color or consistency of lung secretions
- Changes in mental state or personality
- Refusal to take medications as ordered
- Excessive weight loss
- Increasing dependence

Critical Thinking: Case Study

Ms. B has pneumonia caused by a bacterial infection. Her physician has put her on antibiotics and ordered an aide to assist her daily with ADLs because of severe shortness of breath.

- What other symptoms would you expect if you were caring for Ms. B?

Ms. B is 80 years old and the physician is concerned that complications will occur and her heart will be affected due to lack of oxygen.

- What are the important observations for you to note and report?
- Why is oxygen exchange probably reduced in this client, and what other effects could this have on her body?

Critical Thinking: Case Study

When you arrive on the second day, her pulse is very rapid, and she has a fever of 103°F.

- Should you be concerned? What action should you take?

5. Describe the respiratory system and related conditions

Define the following terms:

asthma

a chronic inflammatory disease that makes it difficult to breathe and causes coughing and wheezing

upper respiratory infection (URI)

a bacterial or viral infection of the nose, sinuses, and throat.

lung cancer

the growth of abnormal cells or tumors in the lungs.

tuberculosis (TB):

a highly contagious disease caused by a bacterium, *Mycobacterium tuberculosis*, that is carried on mucous droplets suspended in the air.

5. Describe the respiratory system and related conditions

HHAs should know these facts about asthma:

- Chronic inflammation of bronchi caused by irritants, infection, cold air, allergens, exercise, or stress
- Irritation creates mucus, which causes coughing and wheezing
- Treatment includes medication and avoiding triggers

5. Describe the respiratory system and related conditions

HHAs should know these facts about upper respiratory infection (URI):

- Commonly called a cold, caused by viral or bacterial infection of the nose, sinuses and/or throat
- Symptoms are nasal discharge, sneezing, sore throat, fever, and fatigue
- Treatments are rest, fluids, and antibiotics if bacterial. Clients should avoid irritants and may need to sit upright

5. Describe the respiratory system and related conditions

HHAs should know these facts about lung cancer:

- Development of abnormal cells or tumors in the lungs
- Symptoms include chronic cough, shortness of breath, and bloody sputum

5. Describe the respiratory system and related conditions

HHAs should know these facts about tuberculosis:

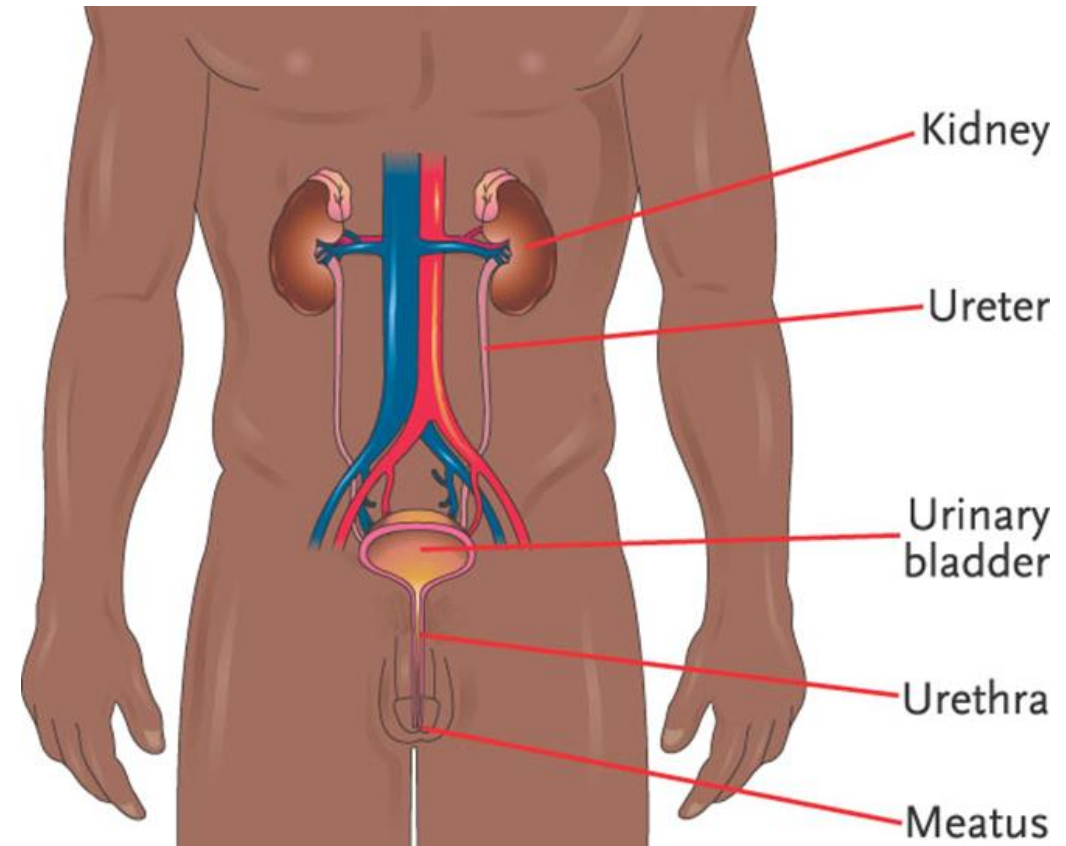
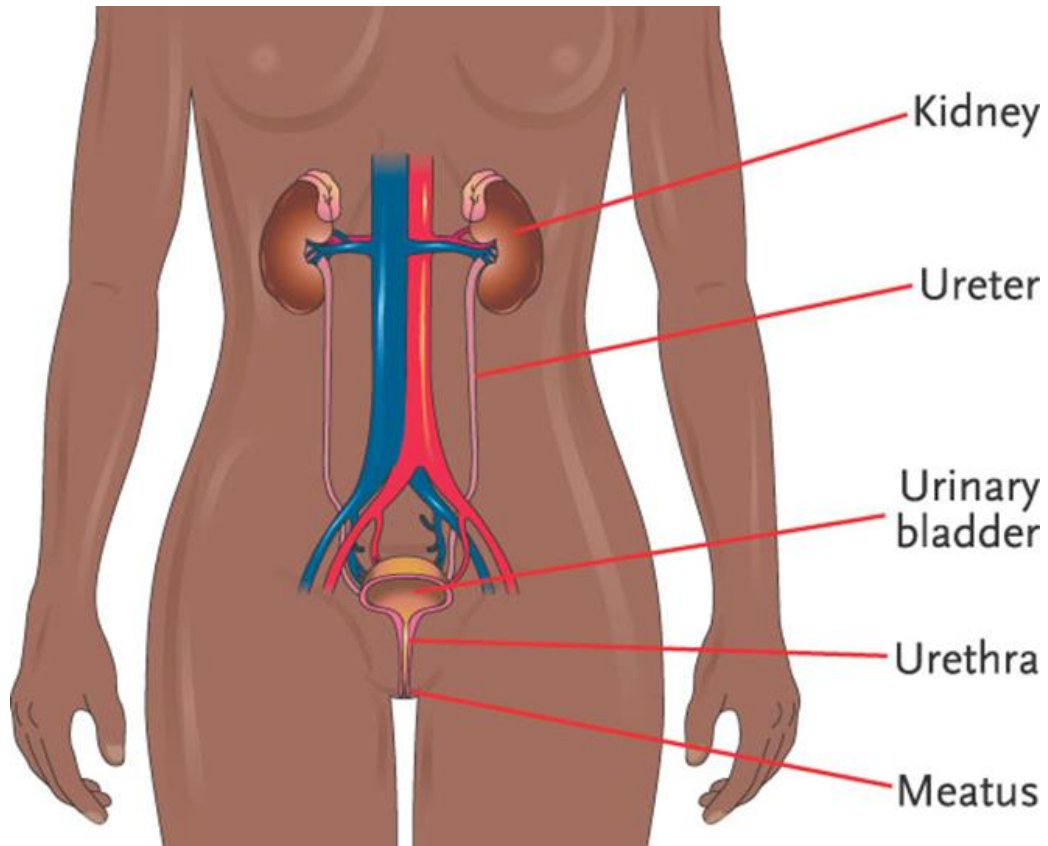
- Highly contagious lung disease
- Covered in greater detail in Chapter 5

5. Describe the respiratory system and related conditions

HHAs should know these facts about COVID-19:

- Highly contagious droplet and airborne disease caused by a virus
- Covered in greater detail in Chapter 5

Key Material 9-17: The Urinary System



6. Describe the urinary system and related conditions

The urinary system has two functions:

- Eliminate wastes
- Maintain water balance

6. Describe the urinary system and related conditions

Observe and report the following:

- Weight loss or gain
- Swelling in extremities
- Painful urination or burning on urination
- Changes in urine (cloudiness, odor, color)
- Change in frequency or amount of urine
- Swelling in abdominal/bladder area
- Complaints that bladder feels full or painful
- Urinary incontinence
- Pain in kidney or back
- Poor fluid intake
- Confusion

6. Describe the urinary system and related conditions

Define the following terms:

incontinent

the inability to control the muscles of the bladder or bowels.

urinary incontinence

the inability to control the bladder, which leads to an involuntary loss of urine.

urinary tract infection (UTI)

a bacterial infection of the urethra, bladder, ureter, or kidney, resulting in pain or burning during urination.

kidney stones

stones that form when urine crystallizes in the kidneys, which can block the kidneys and ureters, causing severe pain; also called *renal calculi*.

6. Describe the urinary system and related conditions

Define the following terms:

chronic renal failure (CRF)

a condition that occurs when the kidneys become unable to eliminate certain waste products from the body; also called *chronic kidney failure*.

dialysis

an artificial means of removing the body's waste products.

6. Describe the urinary system and related conditions

Disorders of the urinary system include the following:

- Urinary incontinence
- Urinary tract infection (UTI)
- Calculi (kidney stones)
- Chronic renal (kidney) failure

6. Describe the urinary system and related conditions

HHAs should know these facts about urinary incontinence:

- Can occur in people who are confined to bed, ill, elderly, paralyzed, or who have circulatory or nervous system diseases or injuries
- Incontinence is not a normal part of aging and may signal an illness.

Key Material 9-18: Care Guidelines for Urinary Incontinence

- Offer to assist with elimination often. Follow elimination schedules
- Answer requests for help promptly
- Document carefully and accurately all episodes of incontinence
- Wash urine off immediately and completely. Keep clients clean, dry, and free from odor
- Change wet or soiled clothing immediately. Change wet bed linen immediately and use absorbent bed pads for clients who are incontinent
- Change wet incontinence briefs promptly and do not refer to them as diapers
- Encourage clients to drink plenty of fluids
- Be reassuring, understanding, professional, and kind

6. Describe the urinary system and related conditions

HHAs should know these facts about urinary tract infection (UTI):

- Bacterial infection of the urethra, bladder, ureter, or kidney (commonly caused by *E. coli*)
- Causes painful burning during urination and the feeling of a frequent need to urinate
- More common in women because of a shorter urethra, as well as the fact that the urethra is located directly in front of the vagina and anus
- Wiping from front to back after elimination, as well as drinking lots of water and other fluids, especially those high in vitamin C, helps to prevent UTIs
- Antibiotics are used to treat UTIs

6. Describe the urinary system and related conditions

HHAs should know these facts about calculi:

- Calculi are stones resulting from crystallizing urine in the kidney
- Can cause severe pain
- May result from lack of fluid, diet, infection, disorders, or certain genetic factors
- Increased water intake, as well as pain relievers, are common treatments. Surgery may be needed

6. Describe the urinary system and related conditions

HHAs should know these facts about chronic renal (kidney) failure:

- Disease resulting from UTIs, high blood pressure, nephritis, or diabetes
- Requires artificial means of removing waste products with kidney dialysis

Critical Thinking: Case Study

Mrs. U had a stroke and now has chronic urinary incontinence. She wears incontinence pads on a regular basis but is unable to change them by herself. You will be visiting her on certain days of the week.

- Will there be instructions regarding fluids on her care plan?
- How can you help prevent skin breakdown caused by her incontinence?
- How can you offer her emotional support regarding her illness?

7. Describe the gastrointestinal system and related conditions

Define the following terms:

digestion

the process of preparing food physically and chemically so that it can be absorbed into the cells.

absorption

the transfer of nutrients from the intestines to the cells.

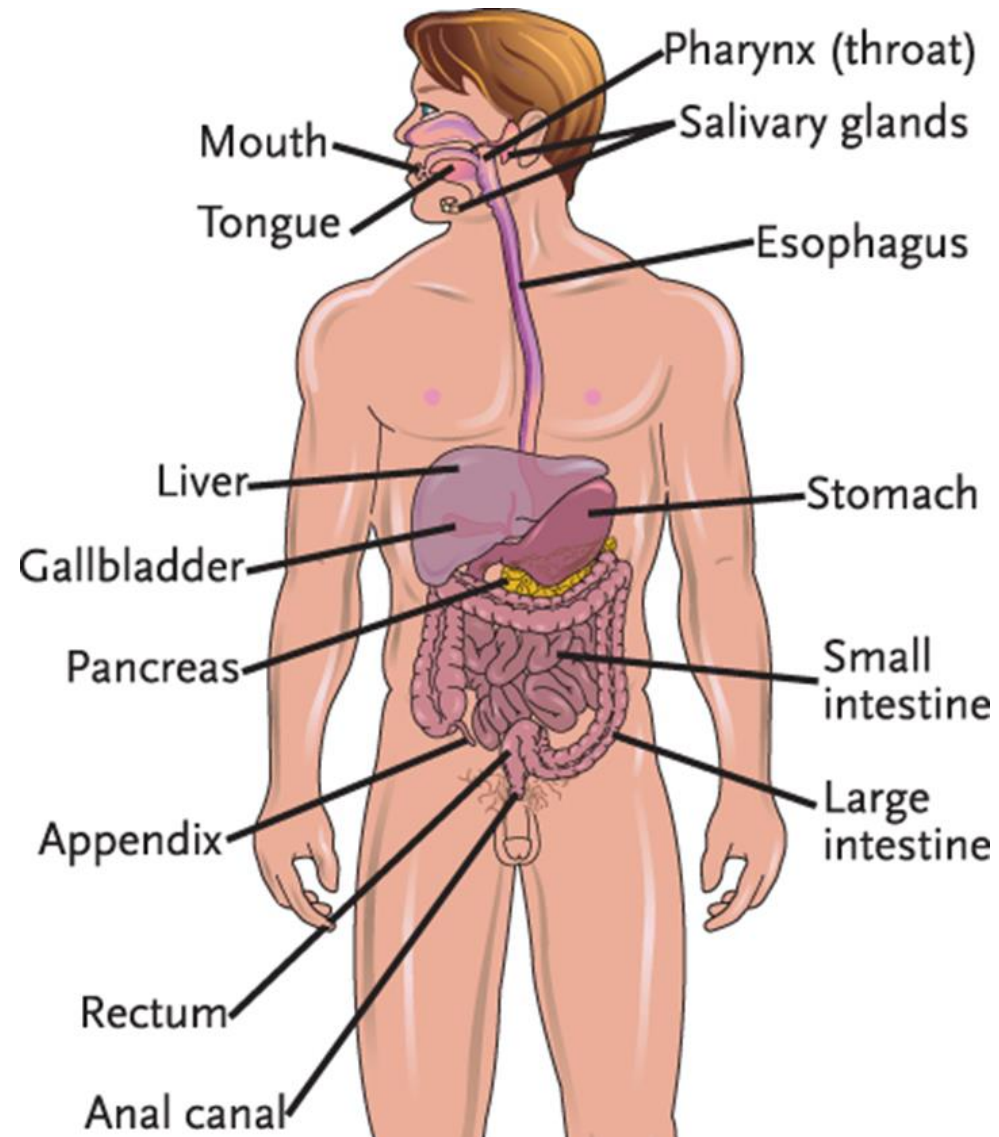
elimination

the process of expelling wastes (made up of the waste products of food and fluids) that are not absorbed into the cells..

fecal incontinence

the inability to control bowels, leading to an involuntary passage of stool.

Key Material 9-19: The Gastrointestinal System



7. Describe the gastrointestinal system and related conditions

Know these functions of the gastrointestinal system:

- Digestion prepares food for absorption into cells
- Elimination is the expelling of solid wastes

7. Describe the gastrointestinal system and related conditions

Observe and report the following:

- Difficulty swallowing or chewing
- Fecal incontinence
- Weight gain or loss
- Loss of appetite
- Abdominal pain or cramping
- Diarrhea

7. Describe the gastrointestinal system and related conditions

Observe and report (cont'd):

- Nausea and vomiting (especially coffee-grounds type)
- Constipation
- Flatulence (excessive gas)
- Hiccups, belching
- Bloody, black, or hard stools
- Heartburn
- Poor nutritional intake

7. Describe the gastrointestinal system and related conditions

Disorders of the gastrointestinal system include the following:

- Constipation
- Fecal impaction
- Hemorrhoids
- Diarrhea
- Gastroesophageal reflux disease (GERD)
- Peptic ulcers
- Ulcerative colitis
- Colorectal cancer

7. Describe the gastrointestinal system and related conditions

Define the following term:

constipation

the inability to eliminate stool, or the infrequent, difficult, and often painful elimination of a hard, dry stool.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about constipation:

- Cause: decreased fluid intake, poor diet, inactivity, medications, aging, disease, or ignoring the urge to eliminate
- Symptoms: abdominal swelling, gas, irritability
- Treatment: increasing fiber and fluid intake, increasing activity level, and possibly enema or suppository

Key Material 9-20: Preventing Constipation

- Fiber intake may need to be increased. Encourage clients to follow their special diets
- Encourage plenty of fluids
- Help clients with exercise as ordered
- Provide privacy for elimination

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about fecal impaction:

- Hard stool that is stuck in the rectum and cannot be expelled
- Cause: unrelieved constipation
- Symptoms: no stool for several days, oozing of liquid stool, cramping, abdominal swelling, and rectal pain
- Treatment: a nurse or doctor inserts one or two gloved fingers into the rectum to break the mass into fragments so that it can be passed
- A high-fiber diet, plenty of fluids, an increase in activity level, and possibly medication, as well as early assessment of constipation, may help prevent impactions

7. Describe the gastrointestinal system and related conditions

Define the following term:

hemorrhoids

enlarged veins in the rectum or outside the anus that can cause rectal itching, burning, pain, and bleeding.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about hemorrhoids:

- Enlarged veins in the rectum and outside the anus
- Cause: constipation, obesity, pregnancy, chronic diarrhea, overuse of enemas or laxatives, and straining during bowel movements
- Symptoms: rectal itching, burning, pain, and bleeding during elimination
- Treatment: eating more fiber and increasing fluid intake, as well as medications and compresses; surgery may be needed

7. Describe the gastrointestinal system and related conditions

Define the following term:

diarrhea

frequent elimination of liquid or semiliquid feces.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about diarrhea:

- Cause: bacterial and viral infections, microorganisms in food and water, irritating foods, and medications
- Treatment: medication, increase in certain fluids, change of diet

7. Describe the gastrointestinal system and related conditions

Define the following term:

gastroesophageal reflux disease (GERD)

a chronic condition in which the liquid contents of the stomach back up into the esophagus.

heartburn

a condition that results from a weakening of the sphincter muscle that joins the esophagus and the stomach.

sphincter muscle

a ring-like muscle that opens and closes an opening in the body.

ulceration

the creation of a sore or break in the skin.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about gastroesophageal disease (GERD):

- Chronic condition in which the liquid contents of the stomach back up into the esophagus
- Liquid can inflame and damage the lining of the esophagus, causing bleeding or ulcers
- Scars from tissue damage can narrow the esophagus and make swallowing difficult
- Heartburn is the most common symptom of GERD

7. Describe the gastrointestinal system and related conditions

Facts about GERD (cont'd):

- Treatment:
 - Medication
 - Serving the evening meal three to four hours before bed
 - Not lying down until two to three hours after eating
 - Using extra pillows to keep the body more upright during sleep
 - Serving the largest meal of the day at lunchtime
 - Eating smaller meals throughout the day
 - Reducing fast foods, fatty foods, and spicy foods
 - Stopping smoking
 - Not drinking alcohol
 - Wearing loose clothing

7. Describe the gastrointestinal system and related conditions

Define the following term:

peptic ulcers

raw sores in the stomach.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about peptic ulcers:

- Cause: Excessive acid secretion
- Symptoms: pain after eating, belching vomiting, black stool, and bleeding with bowel movements
- Treatment: antacids and other mediations, a change in diet, avoiding smoking and avoiding drinking too much alcohol and caffeine

7. Describe the gastrointestinal system and related conditions

Define the following terms:

ulcerative colitis

a chronic inflammatory disease of the large intestine.

colostomy

surgically created opening into the large intestine to allow stool to be expelled.

stoma

an artificial opening in the body.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about ulcerative colitis:

- Chronic inflammatory disease of the large intestine that can cause intestinal bleeding and death.
- Symptoms: Cramping, diarrhea, pain occurring on one side of the lower abdomen, rectal bleeding, loss of appetite, and weight loss
- Treatment: medications and surgical treatment may include a colostomy, which is diversion of waste to a stoma through the abdomen

7. Describe the gastrointestinal system and related conditions

Define the following term:

colorectal cancer

cancer of the gastrointestinal tract; also known as *colon cancer*.

7. Describe the gastrointestinal system and related conditions

HHAs should know these facts about colorectal cancer:

- Cancer of the GI tract
- Symptoms: changes in normal bowel patterns, cramps, abdominal pain, and rectal bleeding
- Treatment: surgery

Critical Thinking: Case Study

Read the following case study and then, with a partner, answer the questions on the next slide:

Mr. F, who is only 50, had hip replacement surgery. Following his surgery, he wasn't allowed to be on his feet for a few days, but now he has regular orders for ambulating. Even though he walks a little each day, progress is slow. He has regularly experienced constipation since his surgery, in part due to the change in his activity level and the pain medication he is taking. You will be assisting him while he continues to recover from his operation.

Critical Thinking: Case Study

- What type of diet and fluid orders will you expect to see?
- How can you encourage Mr. F to follow his exercise program?
- What observations will be important to make?

8. Describe the endocrine system and related conditions

Define the following terms:

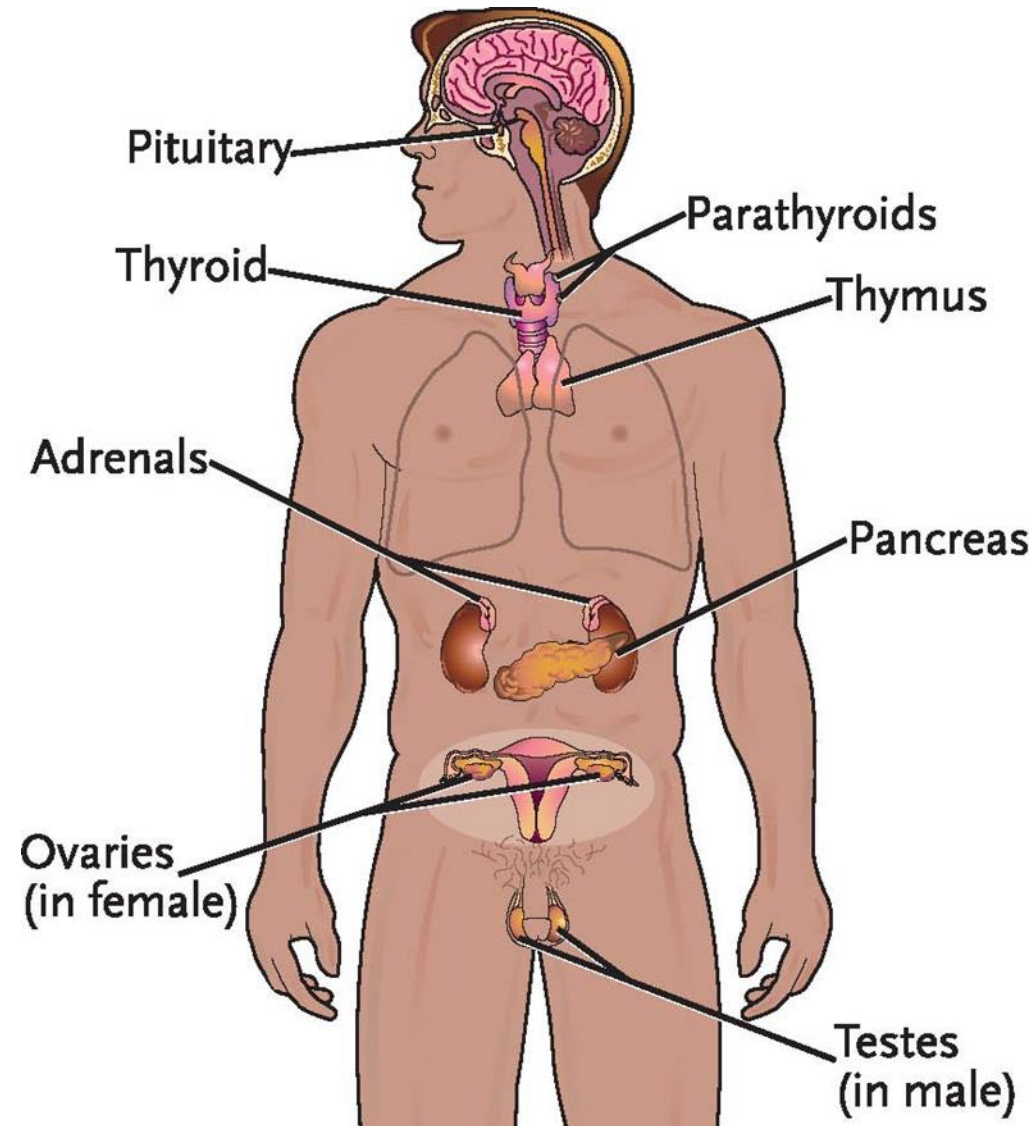
glands

organs that produce and secrete hormones.

hormones

chemical substances created by the body that control numerous body functions.

Key Material 9-21: The Endocrine System



8. Describe the endocrine system and related conditions

Know these points about the endocrine system:

- Glands produce and secrete hormones, which are chemical substances that control numerous body functions
- Hormones are carried by the blood to organs in order to:
 - Maintain homeostasis through hormone secretion
 - Influence growth and development
 - Maintain blood sugar levels
 - Regulate calcium and phosphate levels
 - Regulate the body's ability to reproduce
 - Determine how fast cells burn food for energy

8. Describe the endocrine system and related conditions

Observe and report the following:

- Headache
- Weakness
- Blurred vision
- Dizziness
- Irritability
- Sweating/excessive perspiration
- Change in “normal” behavior
- Confusion
- Change in mobility
- Change in sensation

8. Describe the endocrine system and related conditions

Observe and report (cont'd):

- Numbness or tingling in arms or legs
- Weight gain or weight loss
- Loss of appetite or increased appetite
- Increased thirst
- Frequent urination or any change in urine output
- Hunger
- Dry skin
- Skin breakdown
- Sweet or fruity breath
- Sluggishness or fatigue
- Hyperactivity

8. Describe the endocrine system and related conditions

Disorders of the endocrine system include the following:

- Diabetes
- Insulin Reaction
- Diabetic Ketoacidosis

8. Describe the endocrine system and related conditions

Define the following terms:

diabetes

a condition in which the pancreas does not produce any insulin, produces too little insulin or does not properly use insulin.

insulin

a hormone that moves glucose from the blood and into the cells for energy for the body.

glucose

natural sugar.

8. Describe the endocrine system and related conditions

Define the following terms:

prediabetes

a condition that occurs when a person's blood glucose levels are above normal but not high enough for a diagnosis of type 2 diabetes.

gestational diabetes

a condition in which pregnant women who have never had diabetes develop high blood glucose levels during pregnancy.

8. Describe the endocrine system and related conditions

HHAs should know these facts about diabetes:

- Pancreas does not produce any, enough or properly use insulin
- Glucose collects in blood, causing circulatory problems
- Two major types are type 1 and type 2. Other types are prediabetes and gestational diabetes

8. Describe the endocrine system and related conditions

The following are signs of diabetes:

- Excessive thirst
- Extreme hunger
- Frequent urination
- Unexplained weight loss
- Elevated blood sugar levels

8. Describe the endocrine system and related conditions

Signs of diabetes (cont'd):

- Glucose in urine
- Sudden vision changes
- Tingling or numbness in hands or feet
- Feeling tired
- Very dry skin
- Sores slow to heal
- More infections

8. Describe the endocrine system and related conditions

HHAs should understand these complications of diabetes:

- Changes in the circulatory system can cause heart attack, stroke, poor extremity circulation, poor wound healing, and kidney and nerve damage
- Damage to eyes can cause vision loss and blindness
- Poor circulation and impaired wound healing can lead to leg and foot ulcers, infected wounds, and gangrene
- Insulin reaction and diabetic ketoacidosis are serious complications

8. Describe the endocrine system and related conditions

Define the following term:

insulin reaction or hypoglycemia

complications of diabetes that can result from either too much insulin or too little food.

8. Describe the endocrine system and related conditions

Insulin reaction (hypoglycemia) is a complication of diabetes:

- Causes: too much insulin, not enough food, too much exercise, vomiting and diarrhea
- Symptoms: weakness; nervousness; dizziness; perspiration; hunger; headache; rapid pulse; low blood pressure; cold, clammy skin; confusion; trembling; blurred vision; numbness of lips and tongue; unconsciousness

8. Describe the endocrine system and related conditions

Define the following term:

diabetic ketoacidosis (DKA)

a complication of diabetes that is caused by having too little insulin in the body.

8. Describe the endocrine system and related conditions

Diabetic ketoacidosis (hyperglycemia) is also a complication of diabetes:

- Causes: too little insulin; undiagnosed diabetes; going without insulin or not having enough insulin; too much food; not enough exercise; or physical or emotional stress
- Symptoms: increased hunger, thirst, or urination; abdominal pain; deep or labored breathing; sweet, fruity breath odor; headache; weakness; rapid, weak pulse; low blood pressure; dry skin; flushed cheeks; drowsiness; nausea and vomiting; shortness of breath or air hunger; unconsciousness

Key Material: 9-22: Care Guidelines for Diabetes

- Follow diet instructions exactly
- Encourage clients to follow their exercise programs
- Observe each client's management of insulin. Know when clients take insulin and when their meals should be served
- Perform and blood tests as directed
- Perform foot care as directed
- Encourage clients to wear comfortable, supportive shoes that fit well. Shoes made of material that breathes, such as leather, cotton, or canvas, help prevent buildup of moisture. Clients should not go barefoot. Socks made of natural fibers such as cotton or wool are best because they absorb sweat

Key Material 9-22: Care Guidelines for Diabetes (cont'd)

Report any of the following:

- Signs of skin breakdown
- Visual changes
- Change in appetite
- Fruity or sweet-smelling breath
- Weight changes
- Changing in urine output, signs of urinary tract infection, fruity or sweet-smelling urine
- Changes mobility
- Numbness or tingling in the arms or legs
- Nervousness or anxiety
- Dizziness or loss of coordination
- Irritability or confusion

Providing foot care for a client with diabetes

Equipment: basin of warm water, mild soap, 2 washcloths, 2 towels, bath mat, lotion, clean socks, shoes or slippers, gloves

1. Wash your hands.
2. Explain the procedure to the client. Speak clearly, slowly, and directly. Maintain face-to-face contact whenever possible.
3. Provide privacy for the client.
4. Fill the basin halfway with warm water. Test water temperature with thermometer or against the inside of your wrist. Ensure it is safe. Water temperature should be 105°F. Have client check water temperature. Adjust if necessary.

Providing foot care for a client with diabetes

5. Place basin on the bath mat or bath towel (protective barrier) on the floor (if the client is sitting in a chair) or on a towel at the foot of the bed (if the client is in bed). Make sure basin is in a position that is comfortable for the client. Support the foot and ankle throughout the procedure.
6. Put on gloves.
7. Remove the client's socks and completely submerge the client's feet in the water. Soak the feet for 15 to 20 minutes.
8. Put soap on a wet washcloth. Remove one foot from the water. Wash the entire foot gently, including between the toes and around the nail beds.
9. Rinse the entire foot, including between the toes.
10. Using a clean, dry towel or washcloth, pat the foot dry gently, including between the toes.
11. Repeat steps 8 through 10 for other foot.

Providing foot care for a client with diabetes

12. Put lotion on one hand and warm it by rubbing your hands together.
13. Starting at the toes and working up to the ankles, gently rub lotion into the feet with circular strokes. Your goal is to increase circulation, so take several minutes on each foot. **Do not put lotion between the toes.** Remove excess lotion (if any) with a towel or washcloth. Make sure lotion has been absorbed and feet are completely dry.
14. Observe the feet, ankles, and legs for dry skin, irritation, blisters, redness, sores, corns, discoloration, or swelling.
15. Help client put on clean socks and shoes or slippers.
16. Put used linens in the laundry. Pour water into the toilet and flush it. Clean and store the basin and supplies.
17. Remove and discard your gloves.
18. Wash your hands.
19. Document the procedure, including any abnormalities you observed on the feet or legs.

8. Describe the endocrine system and related conditions

Remember:

- HHAs do not cut toenails
- Observation of the feet is important to the health of a client with diabetes

8. Describe the endocrine system and related conditions

Define the following term:

meal plan

a plan or menu that includes all the right types and amounts of food that should be eaten for each day.

8. Describe the endocrine system and related conditions

Remember:

- A client with diabetes will help create his own diet, along with a dietitian
- An HHA should observe what and when a client with diabetes eats

8. Describe the endocrine system and related conditions

Define the following term:

hyperthyroidism

condition in which the thyroid produces too much thyroid hormone, causing body processes to speed up and metabolism to increase.

8. Describe the endocrine system and related conditions

HHA's should know these facts about hyperthyroidism:

- Thyroid produces too much thyroid hormone and cells burn too much food
- Causes weight loss, nervousness, hyperactivity
- Usually treated with medication
- Part of thyroid sometimes surgically removed

8. Describe the endocrine system and related conditions

Define the following term:

hypothyroidism

condition in which the body lacks thyroid hormone, causing the body processes to slow down.

8. Describe the endocrine system and related conditions

HHAs should know these facts about hypothyroidism:

- Autoimmune disorder in which body lacks thyroid hormone and body processes slow down
- Often caused by Hashimoto's thyroiditis
- Causes fatigue, weight gain, constipation, intolerance to cold, dry skin, hair loss, slow heart rate, and low blood pressure
- Treated with thyroid hormone replacement therapy

Critical Thinking: Case Study

Mr. F, a client with diabetes, does not follow his special diet. He eats sweets throughout the day, even though they are restricted on his diet. He does not like to exercise, so he often tells you that he will take his walk on another day.

- What can you do to help him stick to his diet more closely?
- What can you do to help him start exercising? Are there other types of exercise you can suggest
- besides walking?

9. Describe the reproductive system and related conditions

Define the following terms:

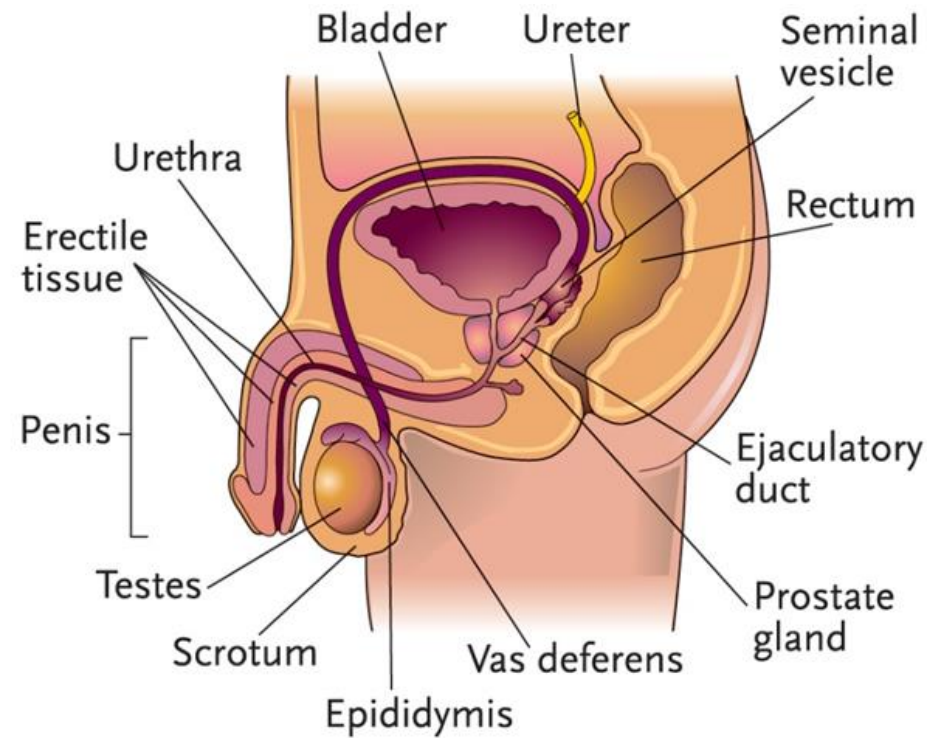
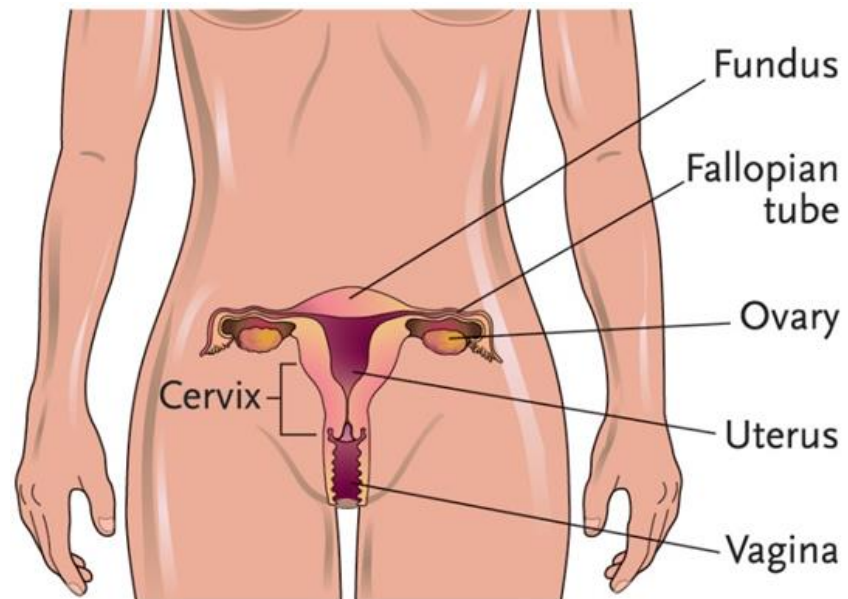
reproduce

to create new human life.

gonads

sex glands.

Key Material: 9-23: The Reproductive System



9. Describe the reproductive system and related conditions

Observe and report the following:

- Discomfort or difficulty with urination
- Discharge from the penis or vagina
- Swelling of the genitals
- Blood in urine or stool
- Breast changes, (size, shape, lumps, or discharge from nipple)
- Sores on genitals
- Redness or rash on the genitals
- Genital itching
- Client reports erectile dysfunction
- Client reports painful intercourse

9. Describe the reproductive system and related conditions

Define the following term:

sexually transmitted infections (STIs)

infections caused by sexual contact with infected people; signs and symptoms are not always apparent.

9. Describe the reproductive system and related conditions

Disorders of the reproductive system include the following:

- Sexually-transmitted infections (STIs)
 - Chlamydia
 - Syphilis
 - Gonorrhea
 - Genital herpes
 - Genital HPV infection
 - HIV/AIDS (covered in Chapter 5 and in the next LO)
- Vaginitis
- Benign prostatic hypertrophy (BPH)

9. Describe the reproductive system and related conditions

Think about this question:

What forms of sexual contact put a person at risk for sexually-transmitted infections?

9. Describe the reproductive system and related conditions

Define the following term:

chlamydia

a type of sexually transmitted infection that is caused by organisms introduced into the mucous membranes of the reproductive tract.

9. Describe the reproductive system and related conditions

HHAs should know these facts about **chlamydia**:

- Can cause pelvic inflammatory disease and can lead to infertility
- Symptoms: yellow or white discharge from penis or vagina, burning with urination
- Treatment: antibiotics

9. Describe the reproductive system and related conditions

Define the following terms:

syphilis

a type of sexually-transmitted infection caused by bacteria; if left untreated, it can cause brain damage, mental health disorders, and death.

chancres

open sores.

9. Describe the reproductive system and related conditions

HHAs should know these facts about **syphilis**:

- If left untreated, can cause brain damage, mental illness, and death (untreated infection spreads to heart, brain, and other vital organs)
- Symptoms: **chancres**, rash, sore throat, and fever
- Treatment: penicillin or other antibiotics

9. Describe the reproductive system and related conditions

Define the following term:

gonorrhea

a type of sexually transmitted infection caused by bacteria; if left untreated, it can cause blindness, joint infection, sterility, and pelvic inflammatory disease.

9. Describe the reproductive system and related conditions

HHAs should know these facts about **gonorrhea**:

- Can cause sterility, blindness, joint infection, and pelvic inflammatory disease if untreated
- Symptoms: men show greenish or yellowish discharge from the penis, painful testes, burning with urination; women may show no early symptoms
- Treatment: antibiotics

9. Describe the reproductive system and related conditions

Define the following term:

genital herpes

an incurable type of sexually-transmitted infection that is caused by herpes simplex viruses type 1 (HSV-1) or type 2 (HSV-2).

9. Describe the reproductive system and related conditions

HHAs should know these facts about **genital herpes**:

- Caused by a virus HSV-1 or HSV-2
- Treatment: antiviral drugs, but herpes cannot be cured
- Person may have repeated outbreaks for life
- Symptoms of outbreaks: burning, painful, red sores on genitals
- Babies born to infected women can be infected at birth

9. Describe the reproductive system and related conditions

Define the following term:

genital HPV infection

a sexually-transmitted infection caused by human papillomavirus.

9. Describe the reproductive system and related conditions

HHAs should know these facts about **genital HPV infection**:

- Caused by human papillomavirus (HPV)
- Spread primarily through genital contact and can infect the genital area of both men and women
- People may have no signs or symptoms of HPV, but women may have an abnormal pap test or genital warts
- Treatment includes removing warts, as well as medication
- An HPV vaccine is available that may help prevent cancer

9. Describe the reproductive system and related conditions

Define the following term:

vaginitis

an infection of the vagina that may be caused by bacteria, protozoa, or a fungus.

9. Describe the reproductive system and related conditions

HHAs should know these facts about **vaginitis**:

- Causes: bacteria, protozoa, or fungus
- Bacterial vaginosis (BV) occurs when there is an overgrowth of normal bacteria inside the vagina
- Symptoms: white vaginal discharge, itching, burning
- Treatment: oral medications, vaginal creams

9. Describe the reproductive system and related conditions

Define the following term:

benign prostatic hypertrophy (BPH)

a disorder that can occur in men as they age, in which the prostate becomes enlarged and causes problems with urination and/or emptying the bladder.

9. Describe the reproductive system and related conditions

HHAs should know these facts about benign prostatic hypertrophy (BPH):

- Common in men over 60
- Causes: enlarged prostate causes pressure on the urethra, which leads to problems urinating and emptying the bladder
- Treatment: medications or surgery
- Men are also at increased risk for prostate cancer as they age. Prostate cancer is usually slow-growing and responsive to treatment, so early detection is important

10. Describe the immune and lymphatic systems and related conditions

Define the following terms:

nonspecific immunity

a type of immunity that protects the body from disease in general.

specific immunity

a type of immunity that protects against a particular disease that is invading the body at a given time.

lymph

a clear yellowish fluid that carries lymphocytes.

lymphocytes

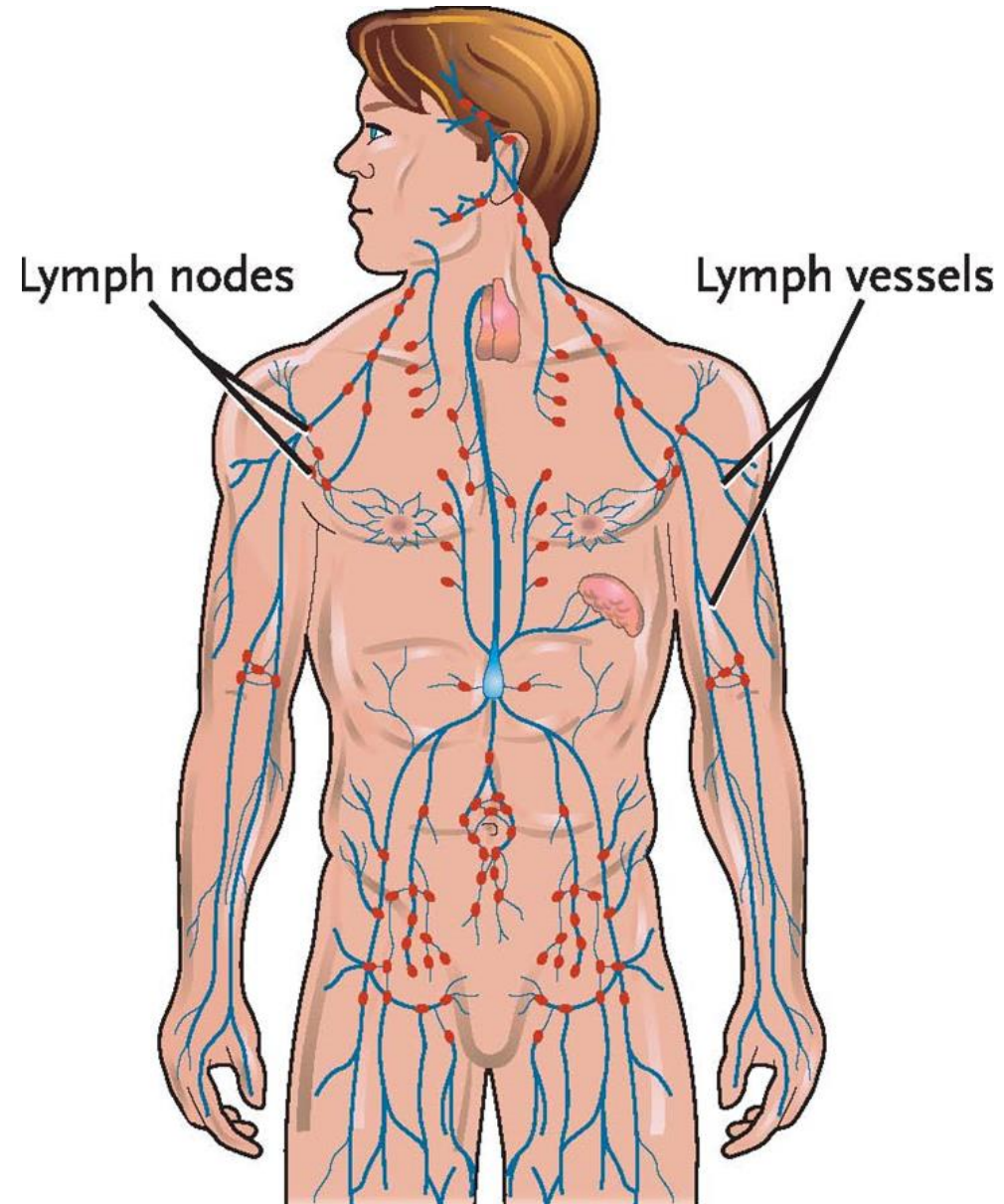
disease-fighting cells carried in lymph.

10. Describe the immune and lymphatic systems and related conditions

HHAs should know these points about the immune system:

- Nonspecific immunity protects the body from disease in general.
- Specific immunity protects the body against a particular disease invading the body at a given time.

Key Material: 9-24 The Lymphatic System



10. Describe the immune and lymphatic systems and related conditions

HHAs should understand these points about the lymphatic system:

- Function of system is to remove excess fluids and waste products as well as to help the immune system to fight infections
- It is closely related to the circulatory system because lymph fluid, after being purified in the lymph nodes, flows into the bloodstream
- It has no pump, but is circulated by muscle activity, massage, and breathing

10. Describe the immune and lymphatic systems and related conditions

Observe and report the following:

- Recurrent infections
- Swelling of lymph nodes
- Increased fatigue

10. Describe the immune and lymphatic systems and related conditions

Disorders of the immune system include the following:

- HIV and AIDS
- Cancer

10. Describe the immune and lymphatic systems and related conditions

Define the following terms:

acquired immunodeficiency syndrome (AIDS)

the final stage of HIV infection, in which infections, tumors, and central nervous system symptoms appear due to a weakened immune system that is unable to fight infection.

human immunodeficiency virus (HIV)

a virus that attacks the body's immune system and gradually disables it; eventually can cause AIDS.

AIDS dementia complex

a group of symptoms, such as memory loss, poor coordination, paralysis, and confusion, that occur in the late stages of AIDS due to damage to the central nervous system.

10. Describe the immune and lymphatic systems and related conditions

Define the following terms:

Kaposi's sarcoma

a rare form of skin cancer that appears as purple, red, or brown skin lesions.

***Pneumocystis jiroveci* pneumonia**

a lung infection.

opportunistic infections

infections that invade the body when the immune system is weak and unable to defend itself.

neuropathy

numbness, tingling, and pain in the feet and legs.

10. Describe the immune and lymphatic systems and related conditions

HHAs should know these facts about HIV and AIDS:







- Acquired immunodeficiency syndrome is caused by HIV (human immunodeficiency virus)
- HIV attacks the immune system
- AIDS is the final stage of HIV infection. The diagnosis of AIDS is made when a person's CD4+ lymphocyte (a type of white blood cell) count falls to 200 or below
- It can take years for HIV to develop into AIDS
- HIV is transmitted by sexual contact and contact with infected blood, including infected needles
- Symptoms in first stage are like the flu

10. Describe the immune and lymphatic systems and related conditions







Facts about HIV and AIDS (cont'd):

- Later symptoms include opportunistic infections, tumors, and central nervous system symptoms
- Late stage is AIDS dementia complex
- Opportunistic diseases invade the weakened body
- Treatment is medication
- There is no cure, nor a vaccine to prevent it





Handout 9-1: Myths About HIV and AIDS

	Myth: If a person is HIV positive, that means he has AIDS.		Fact: Being HIV positive means that a person's body was exposed to the virus. Since the person was exposed, there is a good chance that he or she is infected with the virus. But it does not mean that the person has AIDS. AIDS develops over time.
	Myth: HIV is the same as AIDS.		Fact: HIV is the virus that can cause AIDS. AIDS is a group of symptoms that develop during the last stage of HIV infection.
	Myth: HIV can be spread by shaking hands, hugging, or kissing an infected person.		Fact: HIV is not spread through casual contact. There is a slight possibility that a person could become HIV infected through kissing if both the infected and uninfected person had open, bleeding sores in their mouths, and the infected person's blood got into the uninfected person's bloodstream. If this is a concern, partners can check for such sores before kissing.

Handout 9-1: Myths About HIV and AIDS (cont'd)

	Myth: HIV can be spread by touching phones that an infected person has used.		Fact: The HIV virus cannot live outside of the body. It is not possible to become infected through saliva.
	Myth: HIV can be spread by touching doorknobs, tables, chairs, or push buttons.		Fact: The HIV virus cannot live outside of the body.
	Myth: HIV can be spread by eating food that was prepared by an infected person.		Fact: Once again, HIV dies very quickly outside the body. Even if the food prep person cut his finger and then arranged food on a plate, nobody could become infected from eating this food. Once any body fluid is dry, the virus is dead. Just about the only way infection could be spread in this way is if the food prep person cuts a finger and is bleeding into the food while an uninfected person with open sores in his mouth is eating it. This scenario is rather unlikely.

Handout 9-1: Myths About HIV and AIDS (cont'd)

	Myth: HIV can be transmitted from toilets.		Fact: Toilets have been blamed for just about everything, from getting people pregnant to giving people sexually transmitted infections. The only way a person might possibly become HIV infected from a toilet seat is by having unprotected sex while sitting on it.
	Myth: HIV can be transmitted by mosquitoes.		Fact: Although it sounds possible, mosquitoes, fleas, ticks, and lice do not spread HIV. For this to happen, the HIV would have to survive in the insect saliva and salivary glands. HIV is a human virus and cannot survive outside of the human body. As a result, HIV will not and does not survive in mosquitoes, fleas, ticks, or lice.

Handout 9-1: Myths About HIV and AIDS (cont'd)

	<p>Myth: HIV can be spread by breathing the same air as an infected person.</p>		<p>Fact: HIV does not spread through the air. Being in the same room with someone who is infected with the virus does not pose any risk of transmission.</p>
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10. Describe the immune and lymphatic systems and related conditions

It is very important to remember that HIV is not spread

- Through air or water or food
- By pets or insects, including mosquitoes
- In saliva, tears, or sweat
- Through casual contact, such as hugging, shaking hands, sharing dishes, or touching doorknobs or toilet seats
- Through closed-mouth or casual kissing, such as kissing someone's cheek

10. Describe the immune and lymphatic systems and related conditions

These are the signs and symptoms of HIV/AIDS:

- Flu-like symptoms
- Appetite loss
- Weight loss
- Night sweats
- Swollen lymph nodes
- Severe diarrhea
- Dry cough
- Skin rashes

10. Describe the immune and lymphatic systems and related conditions

Signs and symptoms of HIV/AIDS (cont'd):

- Painful white spots in mouth
- Cold sores
- Cauliflower-like warts on the skin and in the mouth
- Inflamed and bleeding gums
- Bruising that does not go away
- Susceptibility to infection
- Kaposi's sarcoma
- *Pneumocystis jiroveci* pneumonia
- AIDS dementia complex

10. Describe the immune and lymphatic systems and related conditions

Remember:

Using Standard Precautions means treating all blood and body fluids as if they carried an infectious disease. Following Standard Precautions is important when caring for all clients, not just a client who has HIV/ AIDS.

Key Material 9-25: Care Guidelines for AIDS

- Follow Standard Precautions
- Wash hands often. Keep everything clean
- Serve familiar and favorite foods in a relaxed, pleasant setting
- Follow safe food preparation and storage guidelines to prevent foodborne illnesses
- Keep everything clean
- Offer soft, non-spicy foods, liquid meals and fortified drinks, and warm rinses for mouth discomfort. Give careful mouth care
- For nausea and vomiting, offer small frequent meals, a bland diet, and plenty of fluids

Key Material 9-25: Care Guidelines for AIDS (cont'd)

- For diarrhea, offer small meals that are low in fat, fiber, and dairy products. Good rehydration fluids include water, juice, caffeine-free soda, and broth
- Offer loose, soft slippers, keep tight sheets off feet, and report pain
- Offer emotional support, report anxiety and depression, and treat client with respect
- Report if clients need more resources and services
- Provide a safe environment and assist with activities of daily living

10. Describe the immune and lymphatic systems and related conditions

Think about these questions:

What are some of the unique emotional stresses of having HIV or AIDS? What are some of the stress and difficulties you may face when caring for clients with HIV and AIDS?

Critical Thinking: Case Study

Mr. S has been tested and the physician has confirmed the diagnosis of HIV.

- What is this virus and what is one possible prognosis?
- Is this an STI? What are some others?
- How is HIV transmitted?

Critical Thinking: Case Study

Mr. W has been diagnosed with AIDS.

- What is this disease and how does it affect the immune system?
- What is the greatest health danger for him in terms of possible fatal progression of the disease?
- Are clients with AIDS seen in home health care?

10. Describe the immune and lymphatic systems and related conditions

Define the following terms:

cancer

general term to describe a disease in which abnormal cells grow in an uncontrolled way.

tumor

a cluster of abnormally growing cells.

benign tumors

tumors that are considered noncancerous.

malignant tumors

tumors that are cancerous.

10. Describe the immune and lymphatic systems and related conditions

HHA's should know these facts about cancer:

- General term describing many types of tumors
- Tumors can be benign or malignant
- There is no known cure

10. Describe the immune and lymphatic systems and related conditions

Risk factors for cancer include the following:

- Genetic factors
- Tobacco use
- Alcohol use
- Poor diet/obesity
- Lack of physical activity
- Certain infections
- Environmental exposure, such as radiation
- Sun exposure

10. Describe the immune and lymphatic systems and related conditions

The following can be warning signs of cancer:

- Unexplained weight loss
- Fever
- Fatigue
- Pain
- Skin changes
- Change in bowel or bladder function

10. Describe the immune and lymphatic systems and related conditions

Warning signs of cancer (cont'd):

- Sores that do not heal
- Unusual bleeding or discharge
- Thickening or lumps in the body
- Indigestion or difficulty swallowing
- New mole or recent change in mole or wart
- Nagging cough or hoarseness

10. Describe the immune and lymphatic systems and related conditions

HHAs should be familiar with these treatments for cancer, and be aware of their side effects:

- Surgery
- Chemotherapy
- Radiation
- Targeted therapy
- Immunotherapy
- Hormone therapy

Key Material 2-26: Care Guidelines for Cancer

- Each case is different. Do not make assumptions about a client's condition
- Respect each client's needs. Listen if a client wants to share feelings or experiences
- Encourage a variety of food and small portions. Serve favorite foods that are high in nutrition
- Be alert for signs of pain. Assist with comfort measures. Report if pain seems uncontrolled
- Offer back rubs to provide comfort and increase circulation

Key Material 9-26: Care Guidelines for Cancer (cont'd)

- Reposition weak or immobile clients at least every two hours
- Check the skin often and keep the skin clean and dry
- Help clients brush teeth regularly and be gentle when giving oral care
- Assist with grooming if desired
- Encourage visitors and do not intrude. Pursue other topics and get to know what interests clients have
- Be alert to family members' needs that are not being met or stresses created by the illness. Report observations

Key Material 2-26: Care Guidelines for Cancer (cont'd)

Report any of the following:

- Increased weakness or fatigue
- Weight loss
- Nausea, vomiting, diarrhea
- Changes in appetite
- Fainting
- Shortness of breath
- Signs of depression
- Confusion
- Blood in stool or urine
- Change in mental status
- Changes in skin
- New lumps, sores, or rashes
- Increase in pain or unrelieved pain
- Blood in the mouth

Name that disease activity

For one point, name the disease or condition that matches each of the following questions or descriptions.

For an extra point, name the associated body system.

Name that disease activity

What is another name for a broken bone?

A fracture

Body system: musculoskeletal system

Name that disease activity

What disease sometimes leads to dialysis?

Chronic renal failure

Body system: urinary system

Name that disease activity

What disease is stooped posture a sign of?

Osteoporosis

Body system: musculoskeletal system

Name that disease activity

Pancreas produces no insulin or too little insulin with this disease

Diabetes

Body system: endocrine system

Name that disease activity

This is the most common symptom of GERD

Heartburn

Body system: gastrointestinal system

Name that disease activity

Caused by sexual contact with infected people

Sexually transmitted infections

Body system: reproductive system

Name that disease activity

What is the medical term for high blood pressure?

Hypertension

Body system: circulatory system

Name that disease activity

This disease is chronic and usually the result of smoking.

Emphysema

Body system: respiratory system

Name that disease activity

Shuffling gait and pill-rolling are signs of this disease

Parkinson's disease

Body system: nervous system

Name that disease activity

This is another name for kidney stones

Renal calculi

Body system: urinary system

Name that disease activity

Raw sores in the stomach are called

Peptic ulcers

Body system: gastrointestinal system

Name that disease activity

Commonly called a cold

Upper respiratory infection

Body system: respiratory system

Name that disease activity

Too much production of thyroid hormone

Hyperthyroidism

Body system: endocrine system

Name that disease activity

A disease that occurs when the blood supply to the brain is blocked; can cause weakness, paralysis, and problems with speaking and swallowing

CVA/stroke

Body system: nervous system

Name that disease activity

The final stage of HIV infection in which infections, tumors, and central nervous system symptoms appear

AIDS

Body system: immune system

Name that disease activity

Body lacks thyroid hormone, causing fatigue, weight gain, and intolerance to cold

Hypothyroidism

Body system: endocrine system

Name that disease activity

Known as UTI

Urinary tract infection

Body system: urinary system

Name that disease activity

Milky or cloudy spots that develop in the eye

Cataracts

Body system: nervous system

Name that disease activity

Phantom sensation and phantom limb pain may occur

Amputation

Body system: nervous system

Name that disease activity

Breakdown in skin over bony areas

Pressure injuries

Body system: integumentary system

