



State-Approved Curriculum NURSE AIDE I TRAINING PROGRAM

July 2013 Module H



North Carolina Department of Health and Human Services
Division of Health Service Regulation
Health Care Personnel Registry Section
Center for Aide Regulation and Education
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Module H – Body Systems Teaching Guide

Objectives

- Identify the structure and function of the cell and the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems.
- Describe the nurse aide's role in the provision of care for a resident with cancer.
- Discuss changes in the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems due to aging.
- Compare and contrast normal findings and variation of normal findings of the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems.
- Describe common disorders of the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems.
- Describe the nurse aide's role related to a resident's integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems.

Instructional Resources/Guest Speakers

- A skeleton from the biology department (Teaching Tip #6H)

Supplies

- 28-feet of cheap cord or rope (Teaching Tips #13H and #14H)
- 2 brightly colored straws, preferably in different colors or 2 per student – instructor's choice (Teaching Tip #16H)
- Urine display – 3 specimen cups with lids, a small amount of sand, yellow food coloring, red food coloring (Teaching Tip #18H)
- Activity #1H
 - Card stock paper or computer paper (with access to a laminator)
 - Pair of goggles
 - Petroleum jelly or water-soluble lubricant
 - Mannequin in a bed
 - Cotton balls, at least 12 per student
 - Sewing needle and 2-foot piece of thread
 - Newspaper
 - Small change purse with 2 or 3 dimes in it
 - A pair of gloves for each student
 - Pair of extra-large pants

- Chair
- Walker
- Blindfold, scarf or headband
- A meal tray with 3 different foods (such as pudding, applesauce, fruit cocktail, cottage cheese, gelatin, etc.) that will not be eaten, placed on the plate and covered with plastic wrap
- Generic diet card
- Plastic wrap

Advance Preparation – In General

- Review curriculum and presentation materials
- Add examples or comments in Notes Section
- Set up computer/projector
- Establish Internet connection

Advance Preparation – Teaching Tips

- **#1H Anatomical Organization:** Draw blocks on the board before class.
- **#2H Web site:** Familiarize self with the following Web site: www.virtualcell.com.
- **#4H Image Search:** Often a picture is worth a thousand words. Do an image search for pictures of stages of pressure ulcers using your favorite search engine (for example, yahoo images or google images) and decide which images to project on the screen to demonstrate the stages of pressure ulcers.
- **#5H Video Search:** Do a video search for preventing pressure ulcers using your favorite search engine (for example, yahoo video or google video) and decide which videos to show the stages of pressure ulcers and prevention. You may choose to show portions of several videos.
- **#13H and #14H Simulated Small and Large Intestines:** Measure and cut the cord or rope into 2 pieces – one piece, 23-feet long; and the other piece, 5-feet long. Separately, wind both pieces of rope up in preparation for class.
- **#16H Female and Male Urethras:** Measure and cut the first straw, 1½ inches and the other one 7 to 8 inches. (Why not split the difference and cut it 7½ inches?) You may choose to provide sets of pre-cut straws to each student.
- **#17H Image Search:** Do an image search of a prostate gland or male reproductive system using your favorite search engine (for example, yahoo images or google images) and decide which image to project on the screen as a method to explain the prostate gland. The best image will illustrate the location of the prostate gland within the male urinary anatomy, specifically in relation to the urethra. The diagram should show students how an enlarged prostate gland can interfere with the passage of urine in older men.
- **#18H 3 Simulated Urine Specimens:** Create 3 different urines – Urine #1 = water tinted with yellow food coloring; Urine #2 = water tinted in a manner to

demonstrate bloody urine; Urine #3 = water tinted with yellow food coloring and sand added in a manner to demonstrate urine with sediment in it.

Advance Preparation – Activities

- **#1H Experiencing Changes with Aging and/or Disability:** Print instruction cards using card stock paper or computer paper that you will laminate. Decide how to pair up students and think about special situations (odd number of students, whether you want to set up additional stations beyond the 5 specified). Set up 5 stations in the lab as directed in the instructor guide. Think about how you are going to notify students when it is time to move on to the next station.

**Module H – Body Systems
Definition List**

Cell Theory

Cell Theory – basic unit of all living tissues or organisms, all living organisms made of cells, and cellular function is essential process of living things

Cells – are building blocks of the human body and when combined, are said to form tissue

Organ – made of tissue, may be several different types of tissue, that carry on a special function, and combine to form a system

Organism – made up of systems functioning together to perform activities of daily living needed for continued life. Examples of organisms: humans, trees, cats, and ladybugs

Organelle – carry on work of cell

System – made of groups of several organs functioning together for a specific purpose or purposes

Tissue – cells grouped together to carry out a particular activity or function; when grouped together, tissues become organs

Integumentary System:

Bony Prominences – areas of body where bone is close to the skin, such as elbows, shoulder blades, sacrum

Eczema – red, itchy areas on the surface of skin

Epidermis – outer layer of skin

Dermatitis – inflammation of skin

Dermis – layer of skin under the epidermis

Integumentary System – the skin; the largest organ and system in the body, responsible for providing a natural protective covering of the body

Pressure Points – points where the body bears much of the weight

Pressure Ulcers (pressure sore, decubitus ulcer, bed sore) – a serious wound caused by poor circulation, resulting from pressure

Musculoskeletal System

Abduction – moving a body part away from the midline

Adduction – moving a body part toward the midline

Amputation – removal of all or part of a limb

Arthritis – inflammation of the joints

Bone Marrow – soft and spongy inside part of the bone

Bones – hard and rigid structures that make up the skeleton and together form the framework of the body

Cardiac Muscle – involuntary muscle of the heart

Contracture – permanent shortening of muscle resulting in immovable joints

Dorsiflexion – bending the toes and foot upward at the ankle

Extension – straightening a body part

External Rotation – turning the joint outward

Flexion – bending a body part

Fracture – break in the bone

Internal Rotation – turning the joint inward

Joints - point where bones meet and consist of cartilage and connective tissue that cushion the bones, allowing for movement of the area

Ligaments – connect bone to bone

Muscle Atrophy – muscle mass decreases in size

Muscle Strain – damage of the muscle caused by trauma

Muscles – structure of the body that powers movement of skeleton and helps body stay erect

Musculoskeletal System – system of the body that provides structure and movement for the body

Opposition – touching the thumb to a finger of the same hand

Osteoarthritis – disease affects weight-bearing joints, with aches, stiffness, limited motion

Osteoporosis – spongy type of bone that breaks easily

Plantar Flexion – bending the foot downward at the ankle

Pronation – turning downward

Rheumatoid Arthritis – systemic, crippling disease causing deformities, with stiff, painful, swollen joints

Skeletal Muscle – voluntary muscle that powers movement of the skeleton

Smooth Muscle – involuntary muscle of the inner linings of organs

Sprain – stretched or torn ligaments or tendons

Supination – turning upward

Tendons – connect muscle to bone

Neurological System

Blindness – loss of eyesight

Brain – located in the skull and consists of three parts – cerebrum, cerebellum, and the brainstem

Brainstem – part of the brain that controls breathing, opening and closing of blood vessels, heart rate, swallowing, gagging, and coughing

CVA (or stroke) – damage to part of brain due to blood clot or hemorrhage cutting blood supply off

Cataract – when lens of eye becomes cloudy

Cerebellum – part of the brain located just below the cerebrum that controls balance and regulates movement

Cerebrum – center of the brain where thought and intelligence occur

Deafness – hearing loss

Dementia – progressive loss of mental abilities, such as thinking, remembering, etc

Glaucoma – damage to optic nerve caused by pressure

Hearing Loss – not being able to hear normal range of sounds that can be heard with normal hearing

Nerves – structures that are made up of nerve cells or neurons that carry messages to and from the brain and to and from the rest of the body

Neurological System – the control and message center of the body

Neurons – nerve cells

Otitis Media – infection of the middle ear

Parkinson's Disease – progressive nervous disease due to destruction of brain cells

Sensory Organs - receive impulses from environment and relay impulses to brain including skin, tongue, nose, eyes, and ears

Spinal Cord – located within the spine, connected to the brain and conducts messages between the brain and the body by pathways

Cardiovascular System

Anemia – low red blood cell count

Arteries – blood vessels that carry blood with oxygen and nutrients away from the heart and to the cells

Atria (right and left) – two upper chambers of the heart

Blood – consists of water (90%), blood cells, carbon dioxide, oxygen, nutrients, hormones, enzymes, waste products

Cardiovascular System – also called the circulatory system and is the continuous movement of blood through the body

Congestive Heart Failure (CHF) – when one or both sides of the heart stop pumping effectively

Coronary Artery Disease (CAD) – a condition in which blood vessels in the coronary arteries narrow, lowering blood supply to the heart and depriving it of oxygen

Diastole - the resting phase of the heart when the heart fills with blood; the bottom number of a blood pressure reading

Heart – the pump of the cardiovascular system

Hypertension – high blood pressure

Myocardial Infarction (MI) – a heart attack; a condition where the heart muscle does not receive enough blood and lacks oxygen, causing damage or death to that area of the heart

Pulse – is the beat of the heart felt at an artery, as a wave of blood passes through the artery; is the numbers of heart beats per minute

Systole – the working phase of the heart when the heart is pumping blood to the body; the top number of a blood pressure reading

Varicose Veins – enlarged, twisted veins usually in the legs

Veins – blood vessels that carry blood with waste products away from the cells and to the heart

Ventricles (Right and Left) – two lower chambers of the heart

Respiratory System

Asthma – a disease characterized by difficulty breathing, wheezing, and a sense of tightness or constriction in the chest due to spasm of the muscles

Chronic Obstructive Pulmonary Disease (COPD) – Emphysema, asthma, and chronic bronchitis and problems related to these diseases

Cyanosis – changes in skin color, pale or bluish color of lips and extremities

Dyspnea – difficulty breathing

Emphysema – irreversible damage to the lungs causing permanent holes in the lung tissues

Exhale – when carbon dioxide is expelled out of nose and the mouth from the lungs

Expiration – involves the breathing out of carbon dioxide

Influenza – contagious respiratory disease caused by a virus

Inhale – when air (or oxygen) is pulled in through the nose and down into the lungs

Inspiration – involves the breathing in of oxygen

Lobes – segments or areas of the lung

Lower Respiratory Tract – consists of lower trachea, bronchi, and lungs

Lungs – elastic, spongy, cone-shaped air-filled structures involved in respiration

Pneumonia – acute (sudden onset) inflammation of the lungs

Respiratory System – involves the breathing in of oxygen (inspiration) and the breathing out of carbon dioxide (expiration)

Thorax – closed cavity of the body that contain the structures needed for respiration, extending from the base of the neck to the diaphragm

Upper Respiratory Tract – consists of nose, mouth, sinuses, pharynx, larynx, and top of trachea

Gastrointestinal System

Constipation – difficulty in expelling feces, incomplete, or infrequent bowel movements hard stool/inability to pass a stool

Diarrhea – liquid stool

Esophagus – the food tube of the body between the throat and the stomach

Feces – tubular shaped stool passed from the rectum

Gastroenteritis – inflammation of the stomach and intestines lining

Gastrointestinal System – also known as the digestive system, extends from the mouth to the anus, and responsible for digestion and elimination

Hemorrhoids – enlarged veins in anal area

Intestines (small and large) – lower GI structures

Pharynx – upper GI structure located in the back of the throat

Urinary System

Calculi – kidney or bladder stones

Cystitis – inflammation of bladder due to infection

Dysuria – painful urination

Hematuria – blood in the urine

Kidney Failure – decreased ability to filter waste products

Kidneys – paired organs responsible for filtering waste products from the blood and producing urine

Nephritis – inflammation of kidney due to infection

Retention – inability to completely empty the bladder

UTI – is a urinary tract infection

Ureters – narrow tubes that connect the kidneys to the urinary bladder

Urethra – a tube located between the urinary bladder to the outside of the body

Urinary Bladder – muscular sac that stores the urine until it passes from the body

Urinary Incontinence – inability to control urination

Urinary System – the filtering system of the body, responsible for ridding body of waste products from blood

Urine – made up of water, salt, and waste substances

Reproductive System

Cystocele – weakening of wall between urethra and vagina, which leads to urinary incontinence

Prostatic Hypertrophy – enlargement of prostate gland, a donut-shaped structure around the male urethra, leading to urinary dysfunction

Reproductive System – system allows human beings to create a new human life

Endocrine System

Diabetes Mellitus – disorder of carbohydrate metabolism with decreased insulin production from the pancreas

Endocrine System – system of glands that secrete chemicals directly into the bloodstream to regulate body functions

Glands – secrete chemicals, called hormones that regulate bodily function

Homeostasis – balance

Hyperthyroidism – too much thyroxin

Hypothyroidism – too little thyroxin

Immune System

AIDS – disease caused by a virus and attacks the immune system and destroys infection-fighting and cancer-fighting cells of the body

Graves Disease – immune system attacks thyroid gland which causes it to secrete more thyroid hormone

Immune System – system defends threats both inside and outside the body

Lupus – when immune system attacks tissues causing redness, pain, swelling, and damage

Module H – Body Systems (Cell Theory)	
(S-1) Title Slide (S-2, 3 & 4) Objectives <ol style="list-style-type: none"> 1. Identify the structure and function of the cell and the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems. 2. Describe the nurse aide's role in the provision of care for a resident with cancer. 3. Discuss changes in the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems due to aging. 4. Compare and contrast normal findings and variation of normal findings of the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems. 5. Describe common disorders of the integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems. 6. Describe the nurse aide's role related to a resident's integumentary, musculoskeletal, neurological, cardiovascular, respiratory, gastrointestinal, urinary, reproductive, endocrine, and immune systems. 	
Content	Notes
TEACHING TIP #1H: Anatomical Organization Label blocks drawn on board – cell, tissue, organ, system, organism, as each are introduced, showing progression from left to right.	
(S-5) Cell Theory	
(S-6) Cell Theory – Overview <ul style="list-style-type: none"> • Basic unit of all living tissues or organisms • All living organisms made of cells • Cellular function is essential process of living things • Cells have several functioning structures called organelle, that carry on work of cell 	
(S-7) Structure and Function – Cells <ul style="list-style-type: none"> • Are building blocks of the human body • Microscopic in size • Combine to form tissue 	
TEACHING TIP #2H: Web site Demonstrate the structure of the cell by using the Web site, www.virtualcell.com	
(S-8) Structure and Function – Tissue <ul style="list-style-type: none"> • Cells grouped together form tissue • Carry out a particular activity or function • Combine to form an organ 	
(S-9) Structure and Function – Organ	

Module H – Body Systems (Cell Theory)	
<ul style="list-style-type: none"> • Made of tissue, may be several types of tissues • Carries on a special function; examples are heart, stomach, bladder • Some are paired; examples are kidneys, lungs • Combine to form a system 	
(S-10) Structure and Function – Systems <ul style="list-style-type: none"> • Made of groups of several organs functioning together for a specific purpose or purposes • Combine to form an organism • Systems of the body include urinary, musculoskeletal, neurological, respiratory, cardiovascular, gastrointestinal, integumentary, endocrine, and reproductive 	
(S-11) Structure and Function – Organism <ul style="list-style-type: none"> • Made up of systems functioning together to perform activities of daily living needed for continued life • Examples of organisms include humans, trees, cats, and ladybugs 	
(S-12) Cells – Variation of Normal <ul style="list-style-type: none"> • Human organism may have problems occurring at cellular level, but show signs outside of body; examples: <ul style="list-style-type: none"> ○ Flu ○ Pneumonia ○ Diabetes ○ Cancer 	
(S-13) Cells – Common Disorders <ul style="list-style-type: none"> • Tumor – group of abnormally-growing cells; may be benign (or non-cancerous) or malignant (cancerous) • Cancer (CA) – a disease in which abnormal cells grow in an uncontrolled manner, invade surrounding tissue and may spread to other areas of the body; can occur almost anywhere in or on the body, but commonly occurs on skin, in lung, colon, breast, prostate, uterus, ovary, bladder, and kidney 	
(S-14) Cancer – Nurse Aide’s Role <ul style="list-style-type: none"> • Nurse aides should understand basic cellular theory to better understand approaches used in healthcare • Assist with care directed toward minimizing symptoms of cancer or symptoms of the treatment, such as measures to relieve/control pain, provide for nutrition/fluids, prevent skin breakdown, prevent bowel problems, provide for psychological/social/spiritual comfort • Offer emotional support to family/friends • Be aware of seven warning signs of cancer, spelling CAUTION 	
(S-15) Seven Warning Signs of Cancer – CAUTION <ul style="list-style-type: none"> • C hange in bowel or bladder habits 	

Module H – Body Systems (Cell Theory)	
<ul style="list-style-type: none">• A sore that does not heal• U nusual bleeding or discharge from any body opening• T hickening or lump in breast or elsewhere• I ndigestion or difficulty in swallowing• O bvious change in a wart or mole• N agging cough or hoarseness	

Module H – Body Systems (Integumentary)	
Content	Notes
(S-16) Title Slide (S-17) Integumentary System – Overview <ul style="list-style-type: none"> • The skin • Largest organ and system in the body • Responsible for providing a natural protective covering of the body 	
(S-18) Integumentary System – Structure <ul style="list-style-type: none"> • Three layers – epidermis, dermis, subcutaneous (fatty) tissue • Accessory structures include hair and nails 	
(S-19) Integumentary System – Function <ul style="list-style-type: none"> • Protects body from injury and pathogens • Regulates body temperature • Eliminates waste through perspiration • Contains nerve endings for cold, heat, pain, pressure and pleasure • Stores fat and vitamins 	
(S-20) Integumentary System – Normal Findings <ul style="list-style-type: none"> • Warm, dry • Absence of breaks, rash, discoloration, swelling 	
(S-21) Integumentary System – Changes Due to Aging <ul style="list-style-type: none"> • Skin is thinner, drier, more fragile • Skin loses elasticity • Fatty layer decreases so person feels colder • Hair thins and may gray 	
TEACHING TIP #3H: Older Adults and Keeping Warm Ask students: <ul style="list-style-type: none"> • What activities have you noticed older adults performing to keep warm? 	
(S-22) Integumentary System – Changes Due to Aging <ul style="list-style-type: none"> • Folds, lines, wrinkles and brown spots may appear • Nails harden and become more brittle • Reduced circulation to skin, leading to dryness and itching • Development of skin tags, warts and moles 	
(S-23) Integumentary System – Variation of Normal <ul style="list-style-type: none"> • Breaks in skin • Rash, itching or skin discoloration 	

Module H – Body Systems (Integumentary)	
<ul style="list-style-type: none"> • Pale, white or reddened areas • Black and blue areas 	
(S-24) Integumentary System – Variation of Normal <ul style="list-style-type: none"> • Dry or flaking skin • Ulcers, sores, or lesions • Swelling • Fluid or bloody drainage • Abnormal temperature • Changes in scalp or hair 	
(S-25) Integumentary System – Common Disorders <ul style="list-style-type: none"> • Eczema – red, itchy areas on the surface of skin • Dermatitis – inflammation of skin • Tears and abrasions • Pressure ulcer (also called pressure sore, decubitus ulcer, bed sore) <ul style="list-style-type: none"> ○ A serious wound caused by poor circulation, resulting from pressure ○ Typically at points where body bears much of the weight (pressure points), called bony prominences (areas of body where bone is close to the skin) – elbows, shoulder blades, sacrum, hips, knees, ankles, heels, toes, back of head, and back of neck ○ Stages – 1 through 4 (5 and 6 also – by some sources) 	
TEACHING TIP #4H: Image Search <ul style="list-style-type: none"> • Do an image search for pictures of stages of pressure ulcers using your favorite search engine and project images on the screen as a method to demonstrate stages of pressure ulcers. TEACHING TIP #5H: Video Search <ul style="list-style-type: none"> • Do a video search for preventing pressure ulcers using your favorite search engine and show the stages of pressure ulcers and prevention. 	
(S-26) Integumentary System – Nurse Aide’s Role <ul style="list-style-type: none"> • Older adults do not need complete baths every day, but a couple times a week, supplemented with sponge baths on non-bath days • Use lotions for moisture • Be gentle with movement and care because of fragility of skin • Gently brush hair daily to stimulate scalp • Layer clothes for extra warmth • Encourage fluids • Inspect skin every time care is provided 	

Module H – Body Systems (Integumentary)	
<ul style="list-style-type: none">• Observe for and report early signs of pressure ulcers – pale, white, or reddened skin (light skin) or purple skin (darker skin)• Prevent pressure ulcers by turning/repositioning dependent residents at minimum of every two (2) hours; performing regular skin care; keeping skin clean and dry; keeping linens dry, clean, and wrinkle-free; using pillows to separate skin surfaces; and encouraging fluids and good nutrition	

Module H – Body Systems (Musculoskeletal)	
Content	Notes
(S-27) Title Slide (S-28) Musculoskeletal System – Overview <ul style="list-style-type: none"> Provides structure and movement for the body 	
(S-29) Musculoskeletal System – Structure and Function <ul style="list-style-type: none"> The skeleton <ul style="list-style-type: none"> Has 206 bones Framework Bones <ul style="list-style-type: none"> Outside is hard and rigid Bone marrow, located inside, is soft and spongy Bones are connected to other bones by ligaments Allows body to move Protects organs of the body Stores calcium Makes and stores blood cells 	
TEACHING TIP #6H Model Skeleton Use a model skeleton to show how bones support the body and protect the organs.	
(S-30) Musculoskeletal System – Structure and Function <ul style="list-style-type: none"> Muscles <ul style="list-style-type: none"> May be voluntary (skeletal) or involuntarily (smooth and cardiac) Body has over 600 muscles made up of elastic tissue Some are connected to bones by tendons Help body stay erect Produce most of body heat Give body form Powers movement of skeleton Provide for movement of organs 	
(S-31) Musculoskeletal System – Structure and Function <ul style="list-style-type: none"> Joints <ul style="list-style-type: none"> Point where bones meet Made up of cartilage and connective tissue that cushion the bones May be movable (ankle), slightly movable (backbone), or immovable (skull) Allows for the movement in the area 	

Module H – Body Systems (Musculoskeletal)	
(S-32) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Ability to perform routine movements and activities of daily living • Ability to perform full range of motion exercises bilaterally, without pain • Able to perform the following movements 	
(S-33) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Abduction bilaterally without pain 	
(S-34) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Adduction bilaterally without pain 	
(S-35) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Extension of arm bilaterally without pain 	
(S-36) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Flexion of arm bilaterally without pain 	
(S-37) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Extension of leg bilaterally without pain 	
(S-38) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Flexion of leg bilaterally without pain 	
(S-39) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Pronation 	
(S-40) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Supination 	
(S-41) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Dorsiflexion 	
(S-42) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Plantar flexion 	
(S-43) Musculoskeletal System – Normal Findings <ul style="list-style-type: none"> • Opposition 	
TEACHING TIP #7H Musculoskeletal Movement Demonstrate and have the students stand and follow along as you demonstrate movement with their own arms and legs: <ul style="list-style-type: none"> • Abduction and adduction • Extension and flexion 	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none"> • Pronation and supination • Dorsiflexion and plantar flexion • Opposition 	
(S-44) Musculoskeletal System – Changes Due to Aging <ul style="list-style-type: none"> • Muscles weaken and lose tone • Bones lose density and become brittle • Joints stiffen, become less flexible, and become painful causing decrease in range of motion and flexibility • Height decreases from 1 to 2 inches, between age 20 and 70 • Slowed recovery from position changes and sudden movement • Pain when moving • Reaction time, movement speed, agility, and endurance decrease • Poorer response to stimuli • Slower muscle and nerve interaction 	
(S-45) Musculoskeletal System – Variation of Normal <ul style="list-style-type: none"> • History of falls • Difficulty with holding or lifting objects • Loss of muscle strength and tone • Generalized weakness and tiredness • Bruising • White, shiny, red, or warm areas over a joint 	
(S-46) Musculoskeletal System – Variation of Normal <ul style="list-style-type: none"> • Slow and unsteady body movement • Complaints of pain in joints or muscles • Swelling, redness, and warmth of joints • Complaints of pain with movement • Inability to move joints 	
(S-47) Musculoskeletal System – Common Disorders <ul style="list-style-type: none"> • Muscle atrophy – muscle mass decreases in size • Contracture – permanent shortening of muscle, joints become frozen • Muscle strain – damage of muscle caused by trauma • Sprain – stretched or torn ligaments or tendons • Osteoporosis – spongy type bone that breaks easily 	
(S-48) Musculoskeletal System – Common Disorders <ul style="list-style-type: none"> • Fracture – break in the bone • Arthritis – inflammation of the joints <ul style="list-style-type: none"> ○ Osteoarthritis – affects weight-bearing joints, with aches, stiffness, limited motion ○ Rheumatoid arthritis – systemic, crippling disease causing deformities, with stiff, painful, swollen joints 	

Module H – Body Systems (Musculoskeletal)	
<ul style="list-style-type: none"> • Amputation – removal of all or part of a limb 	
<p>(S-49) Musculoskeletal System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Prevent falls by keeping paths clear, furniture in the same place, walkers/canes within easy reach. • Encourage regular movement, activity, self-care with ADLs. • Encourage resident to walk, do light exercise, and active range of motion. 	

Module H – Body Systems (Neurological)	
Content	Notes
(S-50) Title Slide (S-51) Neurological System – Overview <ul style="list-style-type: none"> Also called the nervous system The control and message center of the body Reflex centers for heartbeat and respiration Senses and responds to changes inside of and outside of the body 	
(S-52) Neurological System – Structure and Function <ul style="list-style-type: none"> Brain <ul style="list-style-type: none"> Located in the skull and consists of three parts – cerebrum, cerebellum, and the brainstem Cerebrum – center of the brain where thought and intelligence occur Cerebellum – located just below the cerebrum and controls balance and regulates movement Brainstem – controls breathing, opening and closing of blood vessels, heart rate, swallowing, gagging, and coughing 	
(S-53) Neurological System – Structure and Function <ul style="list-style-type: none"> Spinal cord <ul style="list-style-type: none"> Located within the spine Connected to the brain Conducts messages between the brain and the body by pathways Nerves <ul style="list-style-type: none"> Are made up of nerve cells or neurons Carry messages to and from the brain and to and from the rest of the body 	
(S-54) Neurological System – Structure and Function <ul style="list-style-type: none"> Sensory Organs <ul style="list-style-type: none"> Include skin, tongue, nose, eyes, and ears Receive impulses from environment and relay impulses to brain 	
(S-55) Neurological System – Normal Findings <ul style="list-style-type: none"> Alert and oriented, with clear short-term/long-term memory Ability to sense heat, cold, pain Ability to hear and see without difficulty Ability to taste and smell without difficulty 	
(S-56) Neurological System – Changes Due to Aging <ul style="list-style-type: none"> Loss of nerve/brain cells Slowed response and reflex time 	

Module H – Body Systems (Neurological)	
<ul style="list-style-type: none"> • Reduced sense of touch and sensitivity to pain • Reduced blood flow to the brain • Forgetfulness • Each of the senses decrease in function • Sensitivity to heat and cold decreases • Some hearing loss occurs • Appetite decreases • Less tear production • Vision decreases • Problems seeing blue and green • Pupils less responsive to light • Changes in memory, most likely with short-term memory 	
(S-57) Neurological System – Variation of Normal <ul style="list-style-type: none"> • Jerking motions or tremors • Changes in gait or movement • Speech, vision, or hearing changes • Complaints of numbness, dizziness, nausea 	
(S-58) Neurological System – Variation of Normal <ul style="list-style-type: none"> • Complaint of loss of feeling or inability to move one side of the body • Paralysis • Seizures • Confusion 	
(S-59) Neurological System – Common Disorders <ul style="list-style-type: none"> • CVA (or stroke) – damage to part of brain due to blood clot or hemorrhage cutting off blood supply • Head or spinal cord injuries • Dementia – progressive loss of mental abilities, such as thinking, remembering, etc • Parkinson’s disease – progressive nervous disease due to destruction of brain cells • Hearing loss – not being able to hear normal range of sounds that can be heard with normal hearing • Deafness – hearing loss • Cataract – lens of eye becomes cloudy • Glaucoma – damage to optic nerve caused by pressure • Blindness – loss of eyesight • Otitis media – infection of the middle ear 	
(S-60) Neurological System – Nurse Aide’s Role <ul style="list-style-type: none"> • Encourage the use of sensory aids, such as hearing aids and glasses • Face the resident when speaking and speak slowly, clearly in a low-pitched voice 	

Module H – Body Systems (Neurological)	
<ul style="list-style-type: none">• Repeat words when necessary• Enhance food enjoyment by providing good oral care and providing foods with a variety of tastes and texture• Be careful with heat extremes during resident care, such as compresses, bath water, and liquids to drink• Reorient when necessary when residents are confused	

Module H – Body Systems (Cardiovascular)	
Content	Notes
(S-61) Title Slide (S-62) Cardiovascular System – Overview <ul style="list-style-type: none"> Also called the circulatory system The continuous movement of blood through the body 	
(S-63) Cardiovascular System – Structure and Function of the Heart <ul style="list-style-type: none"> The pump of the cardiovascular system About the size of a closed fist Consists of 4 chambers – right and left atria, and right and left ventricles Has 2 phases – (1) the working phase, or systole, when the heart is pumping blood to the body, and the top number of a blood pressure reading and (2) the resting phase, or diastole, when the heart fills with blood, and the bottom number of a blood pressure reading Pulse is the beat of the heart felt at an artery, as a wave of blood passes through the artery and is the numbers of heart beats per minute 	
TEACHING TIP #8H: Size of Heart Tell students: <ul style="list-style-type: none"> Make a closed fist and place it over the chest where the heart is located on a person 	
TEACHING TIP #9H: Blood Pressures Write a couple of blood pressures on the chalk board or dry-erase board: <ul style="list-style-type: none"> Point out the names of the numbers State to the students how they would say the blood pressures if they were reporting findings to the nurse 	
(S-64) Cardiovascular System – Structure and Function <ul style="list-style-type: none"> Blood Vessels <ul style="list-style-type: none"> Arteries carry blood with oxygen and nutrients away from the heart and to the cells Veins carry blood with waste products away from the cells and to the heart Blood <ul style="list-style-type: none"> Adult has 5 to 6 quarts 	

Module H – Body Systems (Cardiovascular)	
<ul style="list-style-type: none"> ○ Consists of water (90%), blood cells, carbon dioxide, oxygen, nutrients, hormones, enzymes, waste products 	
(S-65) Cardiovascular System – Normal Findings <ul style="list-style-type: none"> • Pulse rate of 60 to 100 beats per minute, regular and strong • Blood pressure of systolic 100 – 139, and diastolic 60 – 89 	
TEACHING TIP #10H: Heartbeat of an 80-year Old <p>On the chalk/dry erase board, based on an 80 beats/minute heartbeat, calculate the number of times an 80-year-old person's heart has beat in a lifetime.</p> <p>See if your students will agree that our hearts are amazing anatomical structures.</p> <p>Calculation: 80 beats/minute, multiplied by 60 minutes/hour = 4,800; then multiply 4,800 by 24 hours/day = 115,200; then multiply 115,200 by 365 days/year = 42,048,000, then multiply by 80 = 3,363,840,000. Account for 20 leap year days by multiplying 115,200 by 20 = 2,304,000. Add 3,363,840,000 to 2,304,000 =</p> <p style="text-align: center;">3,366,144,000</p> <p>Based on an 80-year-old heart beating 80 beats per minute, the heart will beat 3 Billion, 366 Million, 144 Thousand times!!!</p>	
(S-66) Cardiovascular System – Changes Due to Aging <ul style="list-style-type: none"> • Heart muscle less efficient • Blood pumps with less force • Arteries lose elasticity and become narrow • Blood pressure increases 	
(S-67) Cardiovascular System – Variation of Normal <ul style="list-style-type: none"> • Change in pulse rate and rhythm • Weakness and tiredness • Loss of ability to perform ADLs • Swelling of hands and feet • Pale or bluish lips, hands, or feet • Weight gain • Chest pain • Shortness of breath, changes in or difficulty breathing 	
(S-68) Cardiovascular System – Common Disorders	

Module H – Body Systems (Cardiovascular)	
<ul style="list-style-type: none"> • Coronary Artery Disease (CAD) – a condition in which blood vessels in the coronary arteries narrow, lowering blood supply to the heart and depriving it of oxygen • Congestive Heart Failure (CHF) – when one or both sides of the heart stop pumping effectively • Myocardial Infarction (MI), also known as a heart attack – a condition where the heart muscle does not receive enough blood and lacks oxygen, causing damage or death to that area of the heart • Anemia – low red blood cell count • Varicose veins – enlarged, twisted veins usually in the legs • Hypertension – high blood pressure 	
<p>(S-69) Cardiovascular System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Provide rest periods at intervals • Encourage exercise, regular movement; range of motion, when inactive • Prevent resident from tiring • Layer clothing to help with warmth 	

Module H – Body Systems (Respiratory)	
Content	Notes
(S-70) Title Slide (S-71) Respiratory System – Overview <ul style="list-style-type: none"> Involves the breathing in of oxygen (inspiration) and the breathing out of carbon dioxide (expiration) 	
(S-72) Respiratory System – Structure and Function <ul style="list-style-type: none"> Thorax <ul style="list-style-type: none"> Closed cavity of the body that contains the structures needed for respiration Extends from the base of the neck to the diaphragm, and surrounded by muscles and ribs Upper Respiratory Tract <ul style="list-style-type: none"> Consists of nose, mouth, sinuses, pharynx, larynx, and top of trachea Lower Respiratory Tract <ul style="list-style-type: none"> Consists of lower trachea, bronchi, and lungs 	
(S-73) Respiratory System – Structure and Function <ul style="list-style-type: none"> Lungs <ul style="list-style-type: none"> Elastic, spongy, cone-shaped air-filled structures Left lung has two lobes and right lung has three lobes As lung inhales, air (or oxygen) is pulled in through nose and into pharynx, then into the larynx, down the trachea, into each of the two bronchi, then into lungs; oxygen is exchanged with carbon dioxide Carbon dioxide is exhaled from the lungs, into the bronchi, to the trachea, through the larynx, through the pharynx, and then out the nose and mouth 	
(S-74) Respiratory System – Normal Findings <ul style="list-style-type: none"> Rate of 12 to 20 breaths per minute Character is quiet, even, and without effort 	
TEACHING TIP #11H: Sneaky Respiratory Rate Ask students: <ul style="list-style-type: none"> Why it is important to be sneaky when you count a resident's respiratory rate? 	
(S-75) Respiratory System – Changes Due to Aging <ul style="list-style-type: none"> Respiratory muscles weaken Lung tissue gradually becomes less elastic 	

Module H – Body Systems (Respiratory)	
<ul style="list-style-type: none"> • Shortness of breath upon exertion • Lung capacity decreases • Oxygen in the blood decreases • Muscles of the diaphragm become weaker • Limited expansion of the chest due to changes in posture 	
(S-76) Respiratory System – Variation of Normal <ul style="list-style-type: none"> • Shallow breathing or breathing through pursed lips • Coughing or wheezing • Nasal congestion or discharge, or productive cough • Noisy respirations • Gasping for breaths 	
(S-77) Respiratory System – Variation of Normal <ul style="list-style-type: none"> • Cyanosis – changes in skin color, pale or bluish color of lips and extremities • Dyspnea – difficulty breathing • Changes in rate and rhythm of breathing • Need to sit after mild exertion • Pain in the chest 	
(S-78) Respiratory System – Common Disorders <ul style="list-style-type: none"> • Chronic Obstructive Pulmonary Disease (COPD) – emphysema, asthma, and chronic bronchitis and problems related to these diseases • Pneumonia – acute inflammation of the lungs • Emphysema – irreversible damage to the lungs causing permanent holes in the lung tissues • Influenza – contagious respiratory disease caused by a virus • Asthma – a disease characterized by difficulty breathing, wheezing, and a sense of tightness or constriction in the chest due to spasm of the muscles 	
(S-79) Respiratory System – Nurse Aide’s Role <ul style="list-style-type: none"> • Provide rest periods at intervals • Encourage exercise and regular movement • Encourage and assist with deep breathing exercises • Limit exposure to smoke, polluted air, or noxious odors by residents with respiratory conditions • Position residents in a manner to maximize lung expansion 	
TEACHING TIP #12H: Position and Breathing Have students take a couple of deep breaths while seated in their chairs and then have them stand up, bend over, and then take a couple of more deep breaths. Ask students:	

Module H – Body Systems (Respiratory)	
Which position was easier to take a deep breath?	
Explain the importance of positioning residents in bed in a manner to facilitate lung expansion.	

Module H – Body Systems (Gastrointestinal System)	
Content	Notes
(S-80) Title Slide (S-81) Gastrointestinal System – Overview <ul style="list-style-type: none"> Also known as the digestive system Extends from the mouth to the anus Has 2 functions: digestion and elimination 	
(S-82) Gastrointestinal System – Structure and Function <ul style="list-style-type: none"> Upper GI structures include the mouth, pharynx, esophagus and stomach Lower GI structures include the small intestines and large intestines Accessory structures include the teeth, tongue, salivary glands, liver, gall bladder, and pancreas GI System digests food, absorbs nutrients, and eliminates waste 	
TEACHING TIP #13H: Simulated Small Intestines Unwind the small intestines (23-foot rope/cord) and stretch it out with the assistance of a couple of students Inform the students that the average length of the small intestines is 23 feet long and the average diameter is about an inch. TEACHING TIP #14H: Simulated Large Intestines Unwind the large intestines (5-foot rope/cord) and stretch it out with the assistance of a couple students Inform the students that the average length of the large intestines is 5 feet long and the average diameter is about 3 inches	
(S-83) Gastrointestinal System – Normal Findings <ul style="list-style-type: none"> Adequate intake of a well-balanced diet, with fluids Passage of a brown, soft, formed, tubular shaped stool (feces), without pain Flat abdomen 	
(S-84) Gastrointestinal System – Changes Due to Aging <ul style="list-style-type: none"> Decreased number of taste buds Slowing of peristalsis causing constipation Slower absorption of nutrients Loss of bowel muscle tone Loss of sphincter muscle tone 	
TEACHING TIP #15H: Peristalsis and Constipation	

Module H – Body Systems (Gastrointestinal System)	
Define peristalsis and then relate the length of the intestines and slowing of peristalsis to constipation.	
(S-85) Gastrointestinal System – Changes Due to Aging <ul style="list-style-type: none"> • Decrease in saliva causing difficulty chewing and swallowing • Decrease in amount of digestive enzymes and saliva production • Decrease in appetite • Loss of teeth • Altered taste and smell 	
(S-86) Gastrointestinal System – Variation of Normal <ul style="list-style-type: none"> • Difficulty swallowing or chewing • Poor intake of diet and fluids • Weight gain or loss • Loss of appetite 	
(S-87) Gastrointestinal System – Variation of Normal <ul style="list-style-type: none"> • Abdominal pain and cramping • Nausea and vomiting • Heartburn • Liquid stool (diarrhea) or hard stool/inability to pass a stool (constipation) 	
(S-88) Gastrointestinal System – Variation of Normal <ul style="list-style-type: none"> • Pain when having a bowel movement • Whitish, black, or red colored stool • Blood, pus, mucus, or other discharge in stool • Incontinence 	
(S-89) Gastrointestinal System – Common Disorders <ul style="list-style-type: none"> • Ulcer – lesion or erosion of lining of stomach or small intestine • Hemorrhoids – enlarged veins in anal area • Constipation – difficulty in expelling fecal material, incomplete, or infrequent bowel movements • Diarrhea – watery bowel movements • Gastroenteritis – inflammation of the stomach and intestines lining 	
(S-90) Gastrointestinal System – Nurse Aide’s Role <ul style="list-style-type: none"> • Encourage intake of fluids unless restricted • Encourage nutritional meals • Make mealtime enjoyable and allow residents adequate time to eat • Provide oral care before and after meals 	
(S-91) Gastrointestinal System – Nurse Aide’s Role <ul style="list-style-type: none"> • Make sure dentures are in place and fit properly 	

Module H – Body Systems (Gastrointestinal System)	
<ul style="list-style-type: none"> • Observe for choking if there is a history of trouble with chewing and swallowing • Provide fluids with meals • Encourage daily bowel movements 	

Module H – Body Systems (Urinary System)	
Content	Notes
(S-92) Title Slide (S-93) Urinary System – Overview <ul style="list-style-type: none"> • The filtering system of the body, responsible for ridding body of waste products from blood 	
(S-94) Urinary System – Structure and Function <ul style="list-style-type: none"> • Kidneys <ul style="list-style-type: none"> ○ Bean-shaped paired organs ○ Located at the back of abdominal cavity, slightly above the waist ○ About four or five inches long and an inch thick ○ Filter waste from the blood and produces urine ○ Help maintain water balance and blood pressure in the body ○ Regulate amounts of electrolytes in the body 	
(S-95) Urinary System – Structure and Function <ul style="list-style-type: none"> • Ureters <ul style="list-style-type: none"> ○ Narrow tubes ○ Connect the kidneys to the urinary bladder ○ About a foot long • Urinary bladder <ul style="list-style-type: none"> ○ Muscular sac ○ Stores the urine until it passes from the body 	
(S-96) Urinary System – Structure and Function <ul style="list-style-type: none"> • Urethra <ul style="list-style-type: none"> ○ A tube ○ Located between the urinary bladder to the outside of the body ○ About seven or eight inches long in males and about one and a half inches long in females 	
TEACHING TIP #16H: Female and Male Urethras In order for students to appreciate the differences between the female and male urethras, ask students: <ul style="list-style-type: none"> • Think about the anatomy of the female urethra and the male urethra in terms of length 	

Module H – Body Systems (Urinary System)	
<ul style="list-style-type: none"> Visualize the difference between one and a half inches versus seven/eight inches and how the male and female genitalia differ <p>One way to do this is to cut 2 different straws – one that is 1½ inches and one that is 7 to 8 inches – and show to students. Another variation of this is to give students their own pairs of straws that have been cut to size earlier.</p> <p>You may want to point out the male and female anatomy using the anatomically correct body parts for the mannequins or an anatomical chart of the urinary system.</p> <p>This is a great time for students to understand concepts that you can introduce now and reinforce later:</p> <p>(1) The close proximity of the female urethra and the anus (2) The notion of washing/wiping front to back</p> <p>You can easily relate this to why females get UTIs more frequently than males.</p>	
(S-97) Urinary System – Structure and Function of Urine <ul style="list-style-type: none"> Made up of water, salt, and waste substances 	
(S-98) Urinary System – Normal Findings of Urine <ul style="list-style-type: none"> Pale yellow to amber in color Clear About 1000 to 1500 milliliters per day 	
(S-99) Urinary System – Changes Due to Aging <ul style="list-style-type: none"> Decreased kidney size and ability to filter blood Decreased capacity, elasticity, muscle tone of bladder Decreased ability to concentrate urine Difficulty or incomplete emptying of urinary bladder Enlargement of prostate in males 	
TEACHING TIP #17H: Image Search <p>Do an image search of prostate gland or male reproductive system using your favorite search engine and project the image on the screen as a method to explain the prostate gland:</p> <ul style="list-style-type: none"> Point out the location of the prostate gland within the male urinary anatomy. Show how an enlarged prostate gland can interfere with the passage of urine in older men. 	

Module H – Body Systems (Urinary System)	
<p>(S-100) Urinary System – Variation of Normal</p> <ul style="list-style-type: none"> • Changes in urine <ul style="list-style-type: none"> ○ Color, cloudiness, odor, amount, frequency ○ Presence of sugar, acetone, blood, sediment in urine • Weight loss or gain • Swelling in arms or legs • Dysuria – pain or burning during urination • Swelling in bladder or abdomen • Pain in kidney or back • Incontinence • Fever 	
<p>TEACHING TIP #18H: 3 Simulated Urine Specimens</p> <p>Pass around 3 different simulated urine specimens:</p> <ul style="list-style-type: none"> • Normal urine • 2 different variations of normal urine – urine with blood and urine with sediment <p>Discuss differences of the 3 urines specimens or ask students to compare and contrast the 3 different specimens.</p>	
<p>(S-101) Urinary System – Common Disorders</p> <ul style="list-style-type: none"> • Nephritis – inflammation of kidney due to infection • Cystitis – inflammation of bladder due to infection • Calculi – kidney or bladder stones • Kidney failure – decreased ability to filter waste products • Urinary incontinence – inability to control urination • UTI – is a urinary tract infection • Retention – inability to completely empty the bladder • Hematuria – blood in the urine • Dysuria – painful urination 	
<p>(S-102) Urinary System – Nurse Aide’s Role</p> <ul style="list-style-type: none"> • Encourage resident to drink fluids unless restricted, when awake • Offer assistance to bathroom • Keep residents clean and dry 	

Module H – Body Systems (Reproductive System)	
Content	Notes
(S-103) Title Slide (S-104) Reproductive System – Overview <ul style="list-style-type: none"> This system allows human beings to create a new human life and may be subdivided into two categories – (1) the female reproductive system and (2) the male reproductive system 	
(S-105) Reproductive System – Structure and Function <ul style="list-style-type: none"> Female reproductive structures include the uterus, fallopian tubes, ovaries, and vagina Male reproductive structures include the penis, testicles, scrotum, and urethra Responsible for production of reproductive cells, produce hormones responsible for sex characteristics, and reproduction 	
(S-106) Reproductive System – Normal Findings <ul style="list-style-type: none"> Absence of bleeding (other than menses) and vaginal discharge/penile discharge Absence of pain and itching Absence of enlargement of prostate gland 	
(S-107) Reproductive System – Changes Due to Aging <ul style="list-style-type: none"> Decreased size and function of reproductive structures Enlargement of prostate Sagging breasts Loss of hair in vulva area 	
(S-108) Reproductive System – Variation of Normal <ul style="list-style-type: none"> Bleeding other than menses Pain Vaginal/penile discharge Itching 	
(S-109) Reproductive System – Common Disorders <ul style="list-style-type: none"> Cystocele – weakening of wall between urethra and vagina, which leads to urinary incontinence Prostatic hypertrophy – enlargement of prostate gland, a donut-shaped structure around the male urethra, leading to urinary dysfunction 	
(S-110) Reproductive System – Nurse Aide’s Role <ul style="list-style-type: none"> Encourage proper nutrition and fluid intake Try to minimize stressors 	

Module H – Body Systems (Endocrine System)	
Content	Notes
(S-111) Title Slide (S-112) Endocrine System – Overview <ul style="list-style-type: none"> Is a system of glands that secrete chemicals directly into the bloodstream to regulate body functions Different types of glands are pictured on slide 	
(S-113) Endocrine System – Structure and Function <ul style="list-style-type: none"> Structure – glands located throughout the body that secrete chemicals, called hormones that regulate bodily function Function <ul style="list-style-type: none"> Maintains homeostasis (balance) Influences growth and development Regulates sugar in the blood and calcium in the bones Regulates reproduction Regulates how fast cells burn food 	
(S-114) Endocrine System – Normal Findings <ul style="list-style-type: none"> Skin warm/dry No variation of weight, appetite, urination from typical Awake, alert, oriented 	
(S-115) Endocrine System – Changes Due to Aging <ul style="list-style-type: none"> Levels of hormones decrease Insulin production decreases Body is less capable to deal with stress 	
(S-116) Endocrine System – Variation of Normal <ul style="list-style-type: none"> Headache, blurred vision, dizziness Weakness Hunger Irritability Sweating Dry skin 	
(S-117) Endocrine System – Variation of Normal <ul style="list-style-type: none"> Confusion Weight gain/loss Appetite increase/decrease Tiredness Increase thirst Increase urination 	
(S-118) Endocrine System – Common Disorders and Nurse Aide's Role	

Module H – Body Systems (Endocrine System)	
<ul style="list-style-type: none"> • Common disorders <ul style="list-style-type: none"> ○ Diabetes Mellitus – most common disorder, due to a disorder of carbohydrate metabolism with decreased insulin production from the pancreas, 80% of diabetics over 40 years of age, incidence increases as people age ○ Hyper- and hypothyroidism – too much or too little thyroxin • Nurse aide's role <ul style="list-style-type: none"> ○ Encourage proper nutrition and fluid intake ○ Try to reduce stressors 	
<p>TEACHING TIP #19H: Diabetes Mellitus Simplified</p> <p>You may need to simplify the definition of diabetes mellitus. You may want to mention that some people refer to diabetes mellitus as sugar diabetes.</p>	

Module H – Body Systems (Immune System)	
Content	Notes
<p>(S-119) Title Slide</p> <p>(S-120) Immune System</p> <ul style="list-style-type: none"> • Overview – this system defends threats both inside and outside the body • Structure – antibodies and white blood cells • Function <ul style="list-style-type: none"> ○ Protects the body from harmful infection-causing germs, such as bacteria and viruses ○ Provides immunity from certain diseases • Normal findings – body is able to fight infection • Changes due to aging <ul style="list-style-type: none"> ○ Immune system weakens and person more prone to getting infections ○ Person's immune system may attack itself causing disease 	
<p>(S-121) Immune System</p> <ul style="list-style-type: none"> • Variation of Normal <ul style="list-style-type: none"> ○ Signs of infection – fever, redness, swelling ○ Anxiety ○ Nausea and vomiting ○ Stiff, swollen, painful joints • Common Disorders <ul style="list-style-type: none"> ○ AIDS – disease caused by a virus and attacks the immune system and destroys infection-fighting and cancer-fighting cells of the body ○ Lupus – when immune system attacks tissues causing redness, pain, swelling, and damage ○ Graves disease – immune system attacks thyroid gland which causes it to secrete more thyroid hormone • Nurse aide's role <ul style="list-style-type: none"> ○ Observe for and report signs of infection ○ Follow standard precautions ○ Provide for nutrition, hydration, and rest for the resident 	
(S-122) THE END	
<p>ACTIVITY #1H: Experiencing Changes with Aging and/or Disability – Group</p> <p>Refer to Instructor's Guide.</p>	

Station #1 – Visual Impairment

For station #1 (newspaper activity):

Resident:

- Put on the goggles and read the newspaper where the nurse aide indicates for you to read

Nurse aide:

- Point out parts of the newspaper where the resident is supposed to read – large print first and then progressing to smaller print
- Read newspaper paragraph to the resident at the point where he/she cannot read

For station #1 (shoebox activity)

Resident:

- Put on the goggles and remove the objects from the shoebox that the nurse aide indicates for you to remove

Nurse aide:

- One at a time, request that the resident remove a specific object from the shoebox

SWITCH ROLES

Station #2 – Hard of Hearing

For station #2 (directions):

Resident:

- Put a cotton ball in each ear
- Ask the nurse aide to give you directions to the nearest post office or grocery store

Nurse aide:

- Give the resident directions per request
- Speak softly and cover mouth with your hand so resident cannot read your lips

For station #2 (favorite recipe)

Resident:

- Keep cotton balls in each ear
- Ask the nurse aide to tell you how to make one of his/her favorite recipes

Nurse aide:

- Give the resident instructions for the recipe per request
- Speak in a tone that is audible to the resident, while facing resident

SWITCH ROLES

Station #3 – Musculoskeletal Impairment of the Hands

For station #3 (needle and thread):

Resident:

- Put on a pair of gloves
- Thread the needle when requested by the nurse aide

Nurse aide:

- Instruct the resident to thread the needle
- Be impatient. Ask resident to speed it up.

For station #3 (small change purse and dime)

Resident:

- Open the change purse
- Get out a dime
- Put the dime in the slot of a vending machine (if available in the building), press the return button, then return the dime back to the change purse

Nurse aide:

- Instruct the resident to go get a drink out of the vending machine for you, using the resident's own money and be impatient. Ask the resident to speed it up.

SWITCH ROLES

Station #4 – Musculoskeletal Impairment of the Lower Extremities

For station #4 (putting on pants):

Resident:

- Sit in chair
- Put on pants using arms and hands only, you cannot move your body from the waist down to your toes when directed to do so by the nurse aide
- Notice how far you were able to get the pants on without assistance

Nurse aide:

- Tell the resident that it is time to get dressed and that you are too busy to help him/her. Leave the area to become the resident (proceed to the walker portion of station #4)

For station #4 (walker)

Resident:

- Walk with walker out of the classroom, down the hall to the water fountain, get a drink of water from the water fountain, and come back to station #4

SWITCH ROLES

Station #5 – Blindness

For station #5 (locating food):

Resident:

- Put scarf/headband/bandana over eyes
- Sit in chair
- Follow instructions of the nurse aide

Nurse aide:

- After the resident is seated in chair and blindfolded, you need to address the resident by name and then state your name, your title, and why you are here (assist with meal tray)
- When resident is seated in the chair, move the over-bed table in front of the resident
- Tell the resident that it is time to eat
- Remove the cover of the plate, but do not remove the plastic wrap
- Tell the resident to feel the plate in front and to think about the face of a clock
- Tell the resident that the _____ (name of food) is located at 2 o'clock
- Tell the resident to touch the _____ (same food as above)
- Continue to describe the other two foods in the same manner and have the resident touch each food when directed

For station #5 (ambulate)

Resident:

- Keep scarf/headband/bandana in place over eyes
- Ambulate with nurse aide, following instructions

Nurse aide:

- Ambulate resident out of the room, down the hall, back to the room, and back to the chair (read the resource card for tips)

SWITCH ROLES

Station #5 – Blindness Resource Card

When assisting a resident who is blind to walk:

- Ask if the resident would like help to walk
- Offer your arm to the resident and tell the resident which arm you are offering
- Tap the back of your hand against the resident's hand
- Request that the resident hold on to your arm just above the elbow
- Walk at a normal pace, one step ahead of the resident
- Pause just before you change directions
- Pause before going up or down a step and tell resident if step is going up or going down and how many steps there are
- Warn the resident about stairs, elevators, turns, doors, furniture, and other obstacles.