



Principles of Caregiving

AGING AND PHYSICAL DISABILITIES

A training program
for caregivers, personal
attendants and direct
support professionals.

THE ARIZONA DIRECT CARE CURRICULUM PROJECT.

This material was created for educational purposes by the Arizona Direct Care Curriculum Project. It is intended as reference material for persons seeking to learn more about this topic. Neither the Department of Economic Security, its Division of Aging and Adult Services, nor any individuals or organizations associated with this project, guarantee that this information is the definitive guide on this topic, nor does it guarantee that mastery of this material assures that learners will pass any required examination.

Please cite “*Principles of Caregiving – Arizona Direct Care Curriculum Project*” when using excerpts from this material. The title *Principles of Caregiving* should be used only with this material as approved by the Direct Care Workforce Committee. If changes are made to the content, the title *Principles of Caregiving* should not be used.

Cover design and artwork created by Gateway Community College, a Maricopa Community College. All rights to the logo and cover design are reserved by the Arizona Direct Care Curriculum Project for exclusive use with the *Principles of Caregiving* materials and classes.

For more information about the curriculum project, please visit the Arizona Direct Care Initiative website at www.azdirectcare.org.

PREFACE TO THE PRINCIPLES OF CAREGIVING

The Development of Standardized Direct Care Professional Training in Arizona

The need for home and community-based caregiving is one of the most compelling issues of our time. It will affect nearly every family in America. In order to be ready to meet the increasing demand for home and community-based services, Arizona must develop a capable and compassionate workforce of caregivers. We are better prepared to meet these challenges through the *Principles of Caregiving* training for caregivers, personal attendants, and direct support professionals.

In 2004, Governor Janet Napolitano appointed the Citizens Work Group on the Long Term Care Workforce (CWG) to further develop and provide recommendations for improving the quality of the long-term care workforce. In 2005, the CWG laid out ten recommendations. One called for the implementation of a standardized, uniform, and universal training curriculum for the direct care workforce.

The Direct Care Curriculum Project is a partnership between the Arizona Department of Economic Security, the Arizona Health Care Cost Containment System, the Developmental Disabilities Planning Council (formerly the Governor's Council on Developmental Disabilities), the Arizona Department of Health Services, and the Direct Care Workforce Committee. The *Principles of Caregiving* training manuals were created to help establish a high-quality training program for direct care and direct support professionals in Arizona. Many individuals and agencies were involved, representing home care providers, community colleges, advocacy organizations, and state agencies. Refer to the Appendix for a list of acknowledgments.

NOTES TO THE STUDENTS

Principles of Caregiving: Aging and Physical Disabilities is Level 2 module of the *Principles of Caregiving* series. It builds on the Fundamentals module, and contains advanced material for DCWs working with older adults or persons with physical disabilities. The Fundamentals module should be completed first. Some review may be necessary before completing this module.

This module is independent of the other Level 2 modules in the series. You can complete this portion of the training without studying the other modules.

Depending on the needs of your employer and the clients served, you may not need all the knowledge and skills presented in Aging and Physical Disabilities, but you are encouraged to study the whole program. The *Principles of Caregiving* curriculum is designed to provide a well-rounded introduction to caregiving and direct supports, and you will be prepared to work for a variety of clients and employers.

Principles of Caregiving includes the following modules:

- Level 1: Fundamentals
- Level 2: Aging and Physical Disabilities
- Level 2: Developmental Disabilities
- Level 2: Alzheimer's Disease and Other Dementias

Competencies for Arizona Direct Care Workers

The competencies are the basis for the training and testing of any staff providing housekeeping or homemaker services, personal care, or attendant care services for a state-funded program in Arizona. The *Principles of Caregiving* books address all of the competencies and help you prepare for the Arizona DCW tests. For a list of competencies, see the Appendix of this module, or refer to the Arizona Direct Care Initiative website at www.azdirectcare.org, click on Competencies.

Learning Objectives

Each chapter of the Aging and Physical Disabilities module begins with an introductory page that lists the learning objectives and the key terms for that particular chapter. Some sections also list skills; these are procedures that you should practice and demonstrate to your instructor. The following symbols are used to identify certain components:



Exercises and activities.



Procedures that you need to practice and demonstrate.

PRINCIPLES OF CAREGIVING: AGING AND PHYSICAL DISABILITIES

TABLE OF CONTENTS

Chapter 1 — Body Systems: Function, Changes with Aging, Care Implications and Conditions	1-1
A. Definitions.....	1-4
B. Heart, Circulatory System and Lungs	1-5
C. Brain and Nervous System.....	1-8
D. Skin, Hair and Nails.....	1-9
E. Bones, Joints and Muscles	1-11
F. Stomach, Intestines and Liver.....	1-14
G. Kidneys and Bladder.....	1-16
H. Immune System	1-18
I. Vision, Hearing, Taste and Smell.....	1-19
J. Diabetes	1-21
Chapter 2 – Physical Disabilities and Conditions: The Brain and Nervous System	2-1
A. Basic Principles.....	2-4
B. Physical Disabilities and Conditions	2-4
Chapter 3 — Psychological /Emotional Conditions	3-1
A. Emotional Impact of Chronic Disease or Physical Disability.....	3-3
B. Emotional Impact of Aging	3-4
C. Anxiety	3-5
D. Depression	3-6
E. Addictions and Older Adults	3-8
F. Resources.....	3-9
Chapter 4 – Personal Care	4-1
A. Basic Principles.....	4-4
B. Skin Care	4-7
C. Bathing, Dressing and Grooming	4-10
D. Toileting	4-23
E. Assistive Devices for Bathing	4-31
F. Meal Assistance.....	4-33

Chapter 5 – Transfers and Positioning	5-1
A. Principles of Body Mechanics for Back Safety.....	5-4
B. Transferring.....	5-5
C. Ambulation (Walking).....	5-14
D. Turning and Positioning.....	5-16
E. Assistive Devices.....	5-22
Chapter 6 – Sexuality and Disability	6-1
A. Basic Principles.....	6-3
B. Sexuality and Aging.....	6-4
C. Sexuality and Disabilities.....	6-4
Chapter 7 – Activity Planning	7-1
A. Principles of Activity Planning.....	7-3
B. Cultural and Religious Issues.....	7-4
C. Activities Specific to Disabilities and Functional Abilities.....	7-5
D. Activity Planning Exercise.....	7-6
E. Resources.....	7-7
Chapter 8 – Dementia Specific Care	8-1
A. Dementia Overview.....	8-3
B. Alzheimer’s Disease.....	8-5
C. Communication Strategies.....	8-7
D. Challenging Behaviors.....	8-9
E. Dementia and Sexuality.....	8-11
F. Assistance with Activities of Daily Living.....	8-11
G. Planning Activities.....	8-13
H. Pain Management Techniques.....	8-14
I. Safety Concerns.....	8-15
Chapter 9 – Grief and End-of-Life Issues	9-1
A. Grief and the Separation Process.....	9-4
B. The Dying Process.....	9-6
C. Emotional Issues.....	9-7
D. Coping Strategies.....	9-8
E. Cultural and Religious Issues.....	9-8
F. Advance Directives.....	9-9
G. Hospice.....	9-10
H. Grief Activity.....	9-11
I. Resources.....	9-12

PRINCIPLES OF CAREGIVING: AGING AND PHYSICAL DISABILITIES

CHAPTER 1 – BODY SYSTEMS: FUNCTION, CHANGES WITH AGING, CARE IMPLICATIONS AND CONDITIONS

CONTENTS

- A. Definitions
- B. Heart, Circulatory System and Lungs
- C. Brain and Nervous System
- D. Skin, Hair, and Nails
- E. Bones, Joints and Muscles
- F. Stomach, Intestines and Liver
- G. Kidneys and Bladder
- H. Immune System
- I. Vision, Hearing, Taste and Smell
- J. Diabetes

OBJECTIVES

1. Explain the difference between acute and chronic illness.
2. Identify major body systems and their functions.
3. Describe the effect of aging on the body.
4. Identify and describe the major chronic conditions and therapeutic interventions used.
5. Describe the significance of diabetes and implications for caregiving.

KEY TERMS

Acute	Diastolic (blood pressure)
Aging	Disability
Amputation	Hyperglycemia
Arthritis	Hypoglycemia
Asthma	Incontinence
Blood Pressure (BP)	Osteoporosis
Chronic	Paralysis
Chronic Obstructive Pulmonary Disease (COPD)	Seizure
Constipation	Stroke
Contracture	Systolic (blood pressure)
Dementia	Therapeutic Interventions
Diabetes	Urinary Tract Infection (UTI)

A. DEFINITIONS

- **Aging:** Aging is the process of becoming older. It affects an individual's body and mind. Factors involved with the aging process are genetically determined and affected by the individual's medical conditions and lifestyle.
- **Disability:** A condition which limits a person's ability to function in one or more major life activities. This can include communication, walking, and self-care (such as feeding and dressing oneself). Disability is most likely a lifelong condition, resulting in the need for assistance.
- **Therapeutic interventions:** Therapeutic interventions are care strategies and treatments. They are given based on individual diagnosis and needs and are addressed in the care/support plan.
- **Acute illness:** Acute illnesses progress rapidly, last a certain length of time, and then the person recovers.
- **Chronic illness:** Long-term conditions requiring long-term care. According to the U.S. National Center for Health Statistics, a chronic illness lasts three months or more.

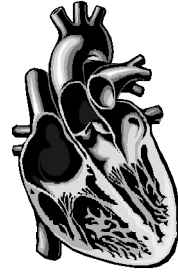
The importance of reporting a change in condition

It is essential that caregivers recognize and report a change of condition in their clients, especially a sudden one. A change of condition means that there is something going on that is not usual for the person. Often these changes of condition, if not noticed and quickly acted upon, result in serious outcomes, possibly hospitalization or even death. Caregivers should be aware of their agency's policies on reporting. In general, call the supervisor or 911 when changes occur. They will assist in determining the next course of action to follow.

B. HEART, CIRCULATORY SYSTEM AND LUNGS

Function

The *heart* is the key organ in the circulatory system (also called the cardiovascular system). The heart is a hollow, muscular pump. Its main function is to force blood throughout the body.



The *circulatory system* consists of blood vessels (arteries and veins) which carry blood to and from the heart. The blood brings oxygen and nutrients to all of the body's cells and vital organs and takes waste products away.

The *lungs* are among the largest organs in the body. They allow you to take in fresh air, get rid of stale air, and even talk. As you breathe in, air goes into your lungs through the windpipe. Your diaphragm tightens and flattens out, creating a suction that brings air into the lungs. The lungs are part of the *respiratory system*. When you breathe in (inhale), the air brings oxygen into the lungs. When you breathe out (exhale), the body gets rid of carbon dioxide (waste).

Changes as we age

- Heart does not pump as efficiently (pump begins to tire out).
- Decreased blood flow to all parts of the body.
- Lungs do not exchange oxygen and carbon dioxide as efficiently.
- Not as much oxygen delivered to all parts of the body.
- Leads to decreased efficiency of all organs of the body.

Implications for care

- When helping a person from a lying or sitting position to walking, allow the person to rest for a minute before walking. This will give time for the blood to reach the brain, decrease dizziness, and prevent falls.
- Allow more time for *activities of daily living* (ADLs), including walking, bathing, and dressing. Don't rush the client.

Conditions involving the heart, circulatory system and lungs

- **High blood pressure (hypertension - HBP, HTN)**
High blood pressure affects almost 30% of adults in the U.S., yet most have no symptoms. Uncontrolled high blood pressure can lead to stroke, heart attack, heart failure or kidney failure. The only way to tell if a person's blood pressure is within the normal range is to have it checked regularly.



Blood pressure guidelines

- The target BP should be less than 140/90.
- If the person has diabetes or kidney problems the target BP should be less than 130/80.

If your client's blood pressure is consistently outside these guidelines, encourage him/her to notify the physician.

- **Cardiovascular disease**

This disease involves the heart and/or blood vessels (arteries and veins), specifically the coronary arteries. Fatty deposits (plaques) stick to the internal walls of the vessels, causing a condition called *atherosclerosis*. The plaques can totally block the passage of blood. This can cause pain (*angina*) and death of the affected heart muscle (*myocardial infarction*).

- **Angina**

Angina is chest pain due to the lack of blood and oxygen to the heart muscle. This is generally due to plaque blocking a coronary artery. Some individuals can get bypass surgery. Others are not good candidates for surgery. Their doctor may prescribe medications to expand blood vessels.

Nitroglycerin (NTG) is a medication used to treat angina. When the person feels chest pain (it can also be pain radiating down the arm or jaw) he or she should rest and take NTG if prescribed. The usual dosage is one pill under the tongue and wait 5 minutes. If the pain continues, the person can repeat the sequence up to two more times.

Note: If you assist someone in taking a NTG pill, always put the pill in the bottle cap. Don't put it in the palm of your hand. The pill can dissolve in the sweat on your hand, possibly giving you the dosage and the side effects of the pill (severe, pounding headache). Also, the person should get a fresh supply of NTG tablets at least yearly, because the pills are destroyed by light. Store the medicine in a cool, dark place. Don't place it on a windowsill or in direct sunlight.

- **Heart attack (myocardial infarction, MI)**

The heart muscle dies if it does not get needed blood and oxygen. The amount of damage to the muscle determines the long term effects and recovery level after the heart attack. Proper diet, exercise and lifestyle changes can help the person regain strength and learn how to avoid future attacks.

- **Chronic obstructive pulmonary disease (COPD)**

Chronic obstructive pulmonary disease is a chronic, progressive decline in lung function. It becomes more difficult to breathe. The lungs become damaged and air flow is blocked. Included in the diagnosis of COPD are chronic bronchitis, asthma, and emphysema. Emphysema is the most common type of COPD.

Emphysema

- Most common cause is smoking.
- Breathing is difficult due to swollen, inflamed air passages, damaged air sacs (*alveoli*) in the lungs, excess mucous, and anxiety.
- Treatment includes medications, quitting smoking, staying as active as possible, and oxygen therapy.

Asthma

The individual may have allergies and infections and be very sensitive to certain things such as cold air, exercise, dust, smoke, etc. When exposed to one of these things the person's air passages become swollen and air movement is difficult. This is referred to as a flare-up or *asthma attack*. Immediate medical attention/medications (including the use of inhalers) are indicated as the client may stop breathing and may even die.

Oxygen equipment

Patients with advanced COPD may use supplemental oxygen. Some precautions when using oxygen equipment include:

- Keep tubing away from any heat source including cigarettes and space heaters.
- Store oxygen tanks upright but secure so they cannot be bumped into or fall over.
- When traveling make sure the oxygen tanks are secured in the car (use a bungee cord and strap the tank to the back of the passenger seat).

C. BRAIN AND NERVOUS SYSTEM

Function

The *brain* sends electrical signals throughout the body. The brain is divided into sections and each section controls different parts or functions of the body. The brain controls:



- What you think and feel.
- How you learn and remember.
- The way you move your body.
- All organ functions.
- Things you might be less aware of, like the beating of your heart, breathing, digestion of food, etc.

The *nervous system* is the network that sends messages back and forth from the brain to different parts of the body. Imagine the nerves as wires that the signals travel through, the path between the brain and the other organs.

Changes as we age

- Loss of brain cells.
- Learning takes longer.
- It takes longer for brain to “search and retrieve” information.
- Sleep pattern changes, increased waking during the night.
- Nerves react more slowly, less sensitive to temperature extremes.
- Decreased sensitivity to pain, injuries may go undetected.

Note: Intellect, judgment, comprehension, and retention usually do not change with age.

Implications for care

- Reduce stress of learning new things, keep environment calm and routine.
- Present new things visually and verbally.
- Notify supervisor if client has sudden change in memory.
- Encourage quiet mental activities or light snack during wakeful periods at night.
- Check feet and between toes for cuts, bruises, burns or lesions that may have gone unnoticed because of decreased pain sensation.

Conditions involving the brain and nervous system

For conditions involving the brain and nervous system see Chapter 2, Physical Disabilities and Conditions: The Brain and Nervous System, in this course manual.

D. SKIN, HAIR AND NAILS

Function

The *skin* is the largest organ of the body. It provides protection, regulation of body temperature and sensation for underlying tissues and other body parts.



Protection

Our skin is a shield that protects us from:

- mechanical impact such as pressure.
- temperature impact such as heat or cold.
- environmental impact such as chemicals, the sun's UV-radiation, bacteria, and water loss.

Regulation

The skin controls and adjusts our body temperature. The production of sweat, which evaporates on the skin's surface, helps cool us down.

Sensing Touch

Feeling touch is one of our body's most important senses. Without it, we would not be able to feel the gentle touch of a loved one, the warmth of a hot cup of tea, or the wind blowing in our faces. This sense is made possible by cells and nerve endings in the skin, which send signals to the brain.

Hair serves as insulation from the cold and heat. It extends the sensory ability of the skin and is a natural protection against the sun's harmful ultra-violet rays.

Nails (fingernails and toenails) protect the ends of the fingers and toes. They are also an extension of the fingers, providing a precision grip in picking up small items.

Changes as we age

- Skin is drier, less elastic, and more fragile. It bruises and tears more easily.
- Fatty layer decreases (decreased natural padding).
- Hair grays, and there is more facial hair in women (may need trimming).
- Nails thicken and become more brittle.

Implications for care

- **The goal is to keep skin healthy and free of any breakdown.**
- Use lanolin based soaps instead of antibacterial or deodorant soaps or alcohol-based products.
- Inspect the person's skin for signs of skin breakdown frequently.
- Use lotion to help keep the person's skin supple and relieve dry, scaly skin.

- Change the person’s position in bed or chair at least every two hours to relieve pressure.
- File nails, **do not clip**.

Tip: To relieve extreme dryness of the hands and/or feet, apply petroleum jelly to the area and cover with cotton gloves or socks before going to bed.

For more information on skin care refer to Chapter 4, Personal Care, in this course manual.

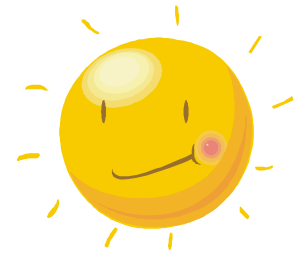
Conditions Involving the skin, hair and nails

- **Edema**

Excessive accumulation of fluid in a body part, usually the legs, results in swelling. In extreme cases this fluid can leak out of a client’s pores and lead to skin breakdown. This can be caused by heart and circulation problems. If the swelling gets worse, the person may need medical care. Care includes a diet low in salt and elevating the affected body part if possible.

- **Sun damage**

In Arizona, the sun is a huge factor in skin safety and health. Sun damage can be extreme and may lead to skin cancer, extreme sun burns and skin damage. Nothing can undo sun damage, but the skin can occasionally repair itself. The client may have an increased risk to sun issues that include sun stroke, dehydration and severe skin damage. Here are some tips for the client to help keep the skin healthy:



- Use sunscreen when outdoors. Sunscreen with an SPF of 15 or more provides the most protection.
- Wear a hat and long sleeves when outdoors and sunglasses that block UV rays.
- Examine the skin regularly for moles that sudden begin growing or change color, and new growths.
- Drink plenty of fluids to keep hydrated.
- Sit or walk in the shade when possible, and avoid long periods of outside activities.

- **Pressure ulcers**

Pressure ulcers, also called bed sores, are breaks in the skin from prolonged pressure in one spot, for example sitting or lying in one position for a long time. Refer to Chapter 4, Personal Care in this course manual for more information on pressure ulcers.

E. BONES, JOINTS AND MUSCLES

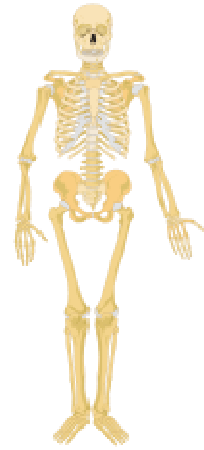
Function

Bones provide support for our bodies and help form our shape. They are the protective frame around our organs; the ribs protect the heart and lungs, the skull protects the brain, etc. Although they are very light, bones are strong enough to support our entire weight.

Joints occur where two bones meet. They make the skeleton moveable—without them, the body would be stiff and rigid.

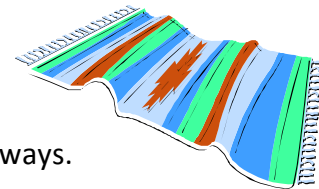
Muscles are also necessary for movement. They are the tough, elastic tissue that pull and push our bones when we move.

Together, our bones, muscles, and joints form our *musculoskeletal* system. They enable us to do everyday physical activities by allowing us to move freely.



Changes as we age

- Loss of muscle tone; joints become less flexible.
- Bones become more porous, more brittle with increased risk of fractures.
- Cartilage between vertebrae (spinal disks) shrinks. This makes the person shorter with stooped posture.
- Slower reflexes and coordination increase risks for falls.



Implications for care

- Prevent falls by removing barriers and scatter rugs; clear pathways.
- Avoid rushing the elderly person when walking.
- Encourage use of hand rails and/or assistive devices for support.
- Ensure adequate lighting, especially at night.

Conditions involving the bones, joints and muscles

• Arthritis

Arthritis causes inflammation and deterioration of the joints. There are two main types. Osteoarthritis and rheumatoid arthritis.

Osteoarthritis

- Degeneration of the joints causing pain and stiffness.
- The most common form of arthritis—90% of people over 50 have some osteoarthritis.
- Symptomatic treatment with aspirin or non-steroidal anti-inflammatory drugs (NSAIDs), such as Ibuprofen or Naproxen.

Note: Non-verbal elders with certain conditions (for example, dementia) may have problem behaviors due to unrelieved arthritis pain.

Rheumatoid arthritis (RA)

- More severe form of arthritis but less common.
- Causes joint deformities.
- More difficult to treat since it is considered an auto-immune disease (immune system kills its own body tissue).
- Can also affect internal organs such as heart, lungs, and muscles.

- **Osteoporosis**

The loss of calcium in the bones makes them porous and brittle. This causes an increased risk of fracture.

- Risk factors: hereditary factors, decreased calcium intake, lack of exercise.
- Treatments include medications to increase calcium uptake and weight training (exercising with weights helps calcium re-absorption).
- Causes decrease in height as the vertebrae collapse and the spine curves. This leads to decreased range of motion and painful mobility.
- Causes compression fractures of the spine.
- Fractures increase risk of joint replacement surgery.
 - Major surgery can cause complications in older adults.
 - The majority of elders who have hip replacement surgery never return to prior level of functioning.

- **Contractures**

Contractures are shortening and tightening of muscles, skin, tendons and ligaments, preventing normal movements. The most common causes are prolonged bed rest, scarring from injury (usually burns) or lack of use (immobilization).

The DCW may be asked to assist with range of motion exercises and repositioning. This helps keep the joints and muscles flexible and circulation flowing. This is another reason why repositioning every two hours is important.

- **Amputation**

The removal of a limb or body part, generally through surgery. Amputations can be performed for the following reasons:

- To remove tissue that does not have an adequate blood supply.
- To remove a body part due to severe injury.
- To remove tumors.

Complications from uncontrolled diabetes may result in an amputation. Decreased blood flow to the hands and feet can cause tissue and muscle damage.

- **Muscular dystrophy (MD)**

Muscular dystrophy is an inherited disease. It is caused by a genetic defect that causes healthy skeletal muscles to become weaker. Symptoms gradually get more severe as muscles get weaker. There is no cure and no way to stop the disease process. MD is not contagious. There are many different types of MD, but these are the most common:

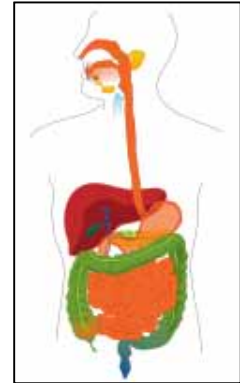
- *Duchenne*: Develops early, between 2 and 6 years of age. Symptoms include waddling or walking on toes, difficulty in running, protruding abdomen. More likely to occur in males.
- *Facioscapulohumeral*: Usually becomes evident in teens. Facial weakness is always present (difficulty closing eyes and whistling). Other symptoms include difficulty raising arms, lifting objects, prominent shoulder blades.
- *Myotonic*: Appears in early adulthood, less often in adolescence. Symptoms include stiffness in hands and feet, especially after chill, difficulty relaxing grip, and facial weakness.

F. STOMACH, INTESTINES AND LIVER

Function

The stomach and intestines are responsible for the digestion of what we eat and drink. Digestion includes absorption of all the nutrients, including vitamins and minerals. The liver is an organ that functions across many systems.

The *stomach* is the organ where food begins the digestion process. The stomach is a muscular, elastic, pear-shaped bag in the abdomen. After food is chewed and swallowed, it goes into the stomach through the *esophagus*. Once the food enters the stomach, acids break down the food into tiny, usable pieces. The food then passes into the intestines.



The *intestines* (also called bowels or colon) are the main part of food digestion and waste elimination. The intestines are divided into two major sections, the *small intestine* and the *large intestine*. The small intestine is where most of the digestion occurs. Most nutrients are absorbed through the walls of the small intestine and distributed throughout the body to fuel the body's functions. The large intestine continues the process by absorbing any leftover nutrients and water. It also pushes the waste along.

The *liver* aids in digestion and removes impurities in the blood. The liver also produces chemicals that regulate many of the functions of the body.

Changes as we age

- Decreased stomach acid and saliva enzyme production make digestion difficult.
- Slowed bowel action can lead to indigestion and constipation.
- Loss of teeth affects ability to chew and digest food.

Implications for care

- Avoid foods that are difficult to digest or chew.
- For constipation, increase fluid intake (eight 8-oz. glasses per day is recommended). Add fresh fruit, veggies, whole grains/fiber, prunes to diet, and exercise.

Conditions involving the stomach and intestines

• Ulcers

Ulcers are sores in the stomach or intestinal lining.

- Can be in stomach or in parts of the intestine.
- May cause heartburn.
- Bleeding ulcers are sores that bleed into the stomach or intestines. Once thought to be caused by increase in stomach acid, ulcers are now known to be created by certain bacteria in the stomach. Persons should not take aspirin or NSAIDS (e.g., Ibuprofen) if they have a history of bleeding ulcers.
- Medication may be prescribed.

- **Constipation/impaction/obstruction**

The longer the stool stays in the colon the more water is absorbed and the harder the stool becomes.

Constipation

- Constipation is a hard stool that is difficult to pass. This is not related to frequency.
- Causes include low fiber diet, ignoring urge to pass a stool, decreased fluid intake, inactivity, certain drugs, aging, and certain medical conditions.
- Discourage use of routine laxatives. The body can become dependent on them and valuable nutrients are lost with their use. Glycerin suppositories and/or stool softeners are preferred.

Impaction/obstruction

- Hard, dried feces that are packed into lower intestines (constipation that has gotten worse).
- Symptoms are loss of appetite, abdominal cramping, leaking diarrhea, change in behavior.
- Impaction can lead to complete bowel obstruction.
- The person needs medical attention, usually for oil retention enema, possible manual extraction, and even surgery with severe cases of obstruction.

- **Diarrhea**

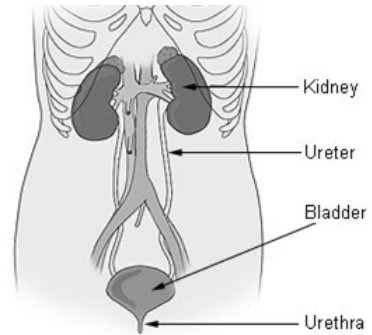
- Loose, watery stool.
- Causes include infections, irritating foods, parasites, etc.
- Need to replace fluids to prevent dehydration.
- Notify supervisor if client has more than two diarrhea episodes in a day.

G. KIDNEYS AND BLADDER

Function

The kidneys and bladder filter blood and produce urine. They aid in the removal of wastes and excess fluids from the body. The kidneys also play a major role in producing chemicals needed for other body functions.

The *kidneys* remove waste and excess fluid that naturally build up in your blood after your body breaks down food. The kidneys collect the waste and send it on to the bladder as urine. They also make hormones and red blood cells that keep your bones strong and your blood healthy.



The main function of the *bladder* is to store and release urine. The bladder is a hollow, muscular, balloon shaped organ that collects urine from the kidneys and stores it until it is full enough to empty. The bladder sends a signal to your brain to let you know it is full and that you need to go to the bathroom.

Changes as we age

- Decreased function of the kidneys, not as able to filter medication by-products.
- Decreased bladder capacity (can hold 2 cups at age 25, 1 cup for an older person).
- Decreased signal time for urge to urinate. The person may urinate as soon as the urge signal is received. This can lead to incontinence.
- Increase of stress incontinence (dribbling, especially for women, after coughing, sneezing, laughing or strenuous activity).
- Incomplete emptying of bladder can lead to increased bladder/kidney infections.
- Prostate gland in men increases in size. This can make urination difficult.

Implications for care

- Monitor for toxic medication reactions.
- Prevent incontinence with routine toileting every two hours. Use easy to remove clothing, and use a bedside commode as indicated.
- Monitor for signs of bladder/kidney infections (change in behavior, increased temperature, change in odor/color of urine, burning/painful urination, back or abdominal pain, etc.).
- Monitor for signs of skin breakdown.

Conditions involving the kidneys and bladder

- **Kidney Failure**

If the kidneys are damaged, they can't properly filter harmful wastes that build up in the body. Blood pressure may rise. The body may retain excess fluid and not make enough red blood cells. This is called kidney failure.

Symptoms of kidney failure include:

- decreased urine production
- body swelling (edema)
- problems concentrating
- fatigue
- confusion
- diarrhea
- extremely tired, sluggish
- nausea and vomiting
- abdominal pain

- **Urinary tract infections**

A *urinary tract infection* (UTI) usually refers to a bladder infection, but can affect other parts of the urinary tract.

Symptoms may include:

- Increased sleepiness or confusion (more common symptom in the elderly).
- Urine cloudy, foul smelling, with floating objects or bloody.
- Low grade fever.
- Burning sensation during urination.
- Feeling like you have to urinate often, maybe with only little amounts.

Tip: Prevent UTIs with increased fluid intake.

- **Urinary incontinence**

Incontinence is the loss of bladder control or the involuntary passage of urine.

This is most often due to loss of muscle strength with age, illness or injury. Treatments range from simple exercises to surgery. Women are affected more often than men. If individuals go to the toilet before they get the urge to void (every 2-3 hours), they can reduce the episodes of incontinence.

- **Benign prostatic hyperplasia**

Benign prostatic hyperplasia (BPH) is an enlarged prostate gland. The prostate enlarges as a man ages. Most of the time this enlargement is benign (non-cancerous), but it can become cancerous. Cancer of the prostate is the second leading cause of cancer related deaths in men (lung cancer is first). Men over 50 should have a prostate exam, especially if these symptoms are noted:

- Difficulty starting and keeping urine flowing.
- Dribbling of urine.
- Needing to urinate frequently, more bothersome at night.

- History of UTIs due to retained urine.

Treatment for an enlarged prostate gland may include a surgery in which pieces of the prostate are removed. Post-op care will include increased fluid intake and monitoring for increased bleeding into the urine.

H. IMMUNE SYSTEM

Function

The *immune system* is responsible for fighting diseases and foreign bodies. An immune system deficiency can leave the body open to infection. Causes include:

- Immune system's efficiency decreasing due to normal aging.
- Chemotherapy.
- Steroid treatments (for example, prednisone).
- Recent transplant surgery (medications are prescribed to reduce resistance to foreign bodies).
- HIV/AIDS.

The number of older people with HIV/AIDS is on the rise. About 75,000 Americans age 50 and older are diagnosed with AIDS. This is about 10% of all people diagnosed with AIDS in the United States.

Changes as we age

- Immune system does not work as efficiently.
- Decreased ability to fight infections.

Implications for care

- Watch for signs of infection: **change in behavior**, fever, decreased appetite, poor color.
- Encourage immunizations such as the yearly flu vaccine.
- The elderly should limit contact with people who are ill (including the DCW), as this may lead to an infection the person cannot fight.

I. VISION, HEARING, TASTE AND SMELL

Function

Vision, hearing, taste and smell are four of the five body senses (touch is covered in Section D of this chapter). Sensory cells produce signals and send them via the nervous system to and from the brain. Senses can alert a person to danger and allow individuals to enjoy and interact with their environment.

Changes as we age

- Decreased vision. It becomes difficult to read and judge distance.
- Increased sensitivity to glare.
- Decreased hearing.
 - High frequency sounds are distorted.
 - Difficulty with hearing if the person cannot see the speaker.
 - Person may withdraw or get depressed if not able to join in conversations.
 - Increased earwax buildup.
- Decreased sense of taste and smell. Food may not taste the same.

Implications for care

- Provide adequate lighting day and night.
- Reduce glare (mirrors, high gloss furniture, etc.).
- Use contrasting colors for floors, walls, steps.
- The person should use eyeglasses and keep them clean.
- The person should have annual eye exams and have ears checked for wax buildup.
- For someone who is hard of hearing:
 - Speak clearly but don't shout; reduce background noise (turn off TV and radio, etc.).
 - Face person when talking, remove anything from mouth (gum, food).
 - Encourage use of hearing aids or amplifiers (clean aids with soft brush; have extra batteries).
- Appetite may decrease. To encourage eating, add appropriate seasonings and have pleasant eating environment.
- Important to keep record of person's weight and appetite.

Conditions involving vision



- **Cataracts**
 - Cloudiness of the lens of the eye. This leads to decreased night vision, glare, and blurry vision.
 - Current treatment includes out-patient laser surgery.
 - Post-op care includes several eye medications and limits on lifting and bending over.
- **Glaucoma**
 - Fluid pressure builds up inside the eyeball. This causes pressure on the optic nerve, leading to blindness. Damage is irreversible.
 - Usually the person does not feel any pressure, so it can only be diagnosed with an eye exam.
 - Treatment includes eye drops and sometimes surgery.
 - People over age 40 should have annual eye exams.
- **Macular degeneration**
 - Leading cause of blindness in people over age 50.
 - The macula (an area of the retina) begins to deteriorate causing blurry or spotty central vision.
 - Certain vitamins with minerals may help.
 - Low vision aids will help. This includes well-lit rooms (but reduce glare), use of high contrasting colors, and use of large print books.

J. DIABETES

Diabetes is an imbalance of glucose and insulin in the blood. Insulin is produced by the pancreas and is responsible for transporting glucose molecules in the blood into the cells.

Normal range for fasting blood glucose is 90 to 110. There are two main types of diabetes:

Type I (Early onset/Insulin dependent)

- Pancreas no longer produces insulin (possibly caused by the body attacking itself).
- Individual must have insulin injections.

Type II (Late onset/diet controlled)

- Due to:
 - Deficiency in insulin production (not enough to meet needs).
 - Cells becoming resistant to insulin.
- Previously seen as affecting older adults, now being seen in children.
- Possible causes: heredity and diet high in fat and sugar.



Diabetic complications (control blood sugars to decrease risk)

- Blindness
- Increased risk for heart attacks, strokes, and circulatory problems
- Wounds, skin lesions, incisions, etc. heal slowly
- Amputations
- Kidney damage and failure
- Nerve damage in extremities (diabetic neuropathy)
- Impotency in men

Treatment

- **Diet** can also control borderline diabetes (when blood sugars are just slightly elevated). Currently, diet focuses more on amount of carbohydrates consumed at each meal rather than limiting concentrated sweets. This allows for more food choices.
- **Exercise** reduces blood sugar, so diabetics are encouraged to be as active as possible.
- **Oral medications** are aimed at increasing insulin production or decreasing the cell's resistance to insulin.
- **Insulin** administered by injection at least once per day. There are different types and lengths of action.

Diabetic foot care

Proper foot care is very important because the feet are areas most affected by decreased blood flow. Since people with diabetes are at risk for poor circulation, their feet need to be inspected regularly for cuts, sores and black spots (a sign of lack of blood supply). Untreated skin problems can lead to serious health risks, including amputation of the foot or leg. If you notice a change in the skin on the feet or anywhere else, you should notify your supervisor.

Refer to the Foot Care section in Chapter 4, Personal Care, in this course manual for more information.

Diabetic emergencies

Remember: Normal blood sugar levels are about 90 to 110 on a test.

- **High blood sugar** (*hyperglycemia*) – Range is anything above 125 to 500+. High blood sugar has a wide range of variance before a person's functions are impaired.
- **Low blood sugar** (*hypoglycemia*) – Symptoms occur with most people at about 70 (see symptoms list on following pages). This means the sugar level just needs to drop a little for the person to start having symptoms. The brain is more sensitive to a drop in blood sugar. It will not function correctly if the sugar level is too low.

Low blood sugar is much more of a danger than high blood sugar. If the person starts to show symptoms of low blood sugar, give the person ½ glass of orange juice or regular soda, followed by a high protein snack such as milk and crackers or half a meat sandwich. **If you think the person may not be able to swallow, DO NOT GIVE FLUIDS!** Instead put a concentrated sweet such as sugar or frosting (not hard candy) inside the mouth.

If you give sugar and the person's symptoms do not go away, you know that something else (such as a stroke) could be causing the symptoms. It will **not hurt** the person to be given the extra sugar if low blood sugar is not the cause of the symptoms. Extra sugar is fine since high blood sugar has a wider range of levels.

Also, **INSULIN AND FOOD MUST GO TOGETHER.** If the person has an insulin shot and no food, a diabetic emergency may happen!

See the following pages for information about hypoglycemia and hyperglycemia.



Hypoglycemia (Low Blood Glucose)

Some Symptoms:

Causes: Too little food or skipping a meal; too much insulin or diabetes pills; more active than usual.

Onset: Often sudden.



IF LOW BLOOD GLUCOSE IS LEFT UNTREATED, YOU MAY PASS OUT AND NEED MEDICAL HELP.

What Can You Do?



CHECK your blood glucose, right away. If you can't check, treat anyway.



TREAT by eating 3 to 4 glucose tablets or 3 to 5 hard candies you can chew quickly (such as peppermints), or by drinking 4-ounces of fruit juice, or 1/2 can of regular soda pop.



CHECK your blood glucose again after 15 minutes. If it is still low, treat again. If symptoms don't stop, call your healthcare provider.

For more information, call the Novo Nordisk Tip Line at 1-800-260-3730 or visit us online at ChangingDiabetes-us.com.

Novo Nordisk Inc. grants permission to reproduce this piece for non-profit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.
Concept developed by Rhonda Rogers, RN, BSN, CDE

© Novo Nordisk Inc. 126379R ChanainaDiabetes-us.com 6/2006





Hyperglycemia (High Blood Glucose)

Causes: Too much food, too little insulin or diabetes pills, illness, or stress.

Onset: Often starts slowly.

Some Symptoms:



EXTREME THIRST



NEED TO URINATE OFTEN



DRY SKIN



HUNGRY



BLURRY VISION



DROWSY



SLOW HEALING WOUNDS

HIGH BLOOD GLUCOSE MAY LEAD TO A MEDICAL EMERGENCY IF NOT TREATED.

What Can You Do?



CHECK BLOOD GLUCOSE

If your blood glucose levels are higher than your goal for three days and you don't know why,

CALL YOUR HEALTHCARE PROVIDER



For more information, call the Novo Nordisk Tip Line at 1-800-260-3730 or visit us online at ChangingDiabetes-us.com.

Novo Nordisk Inc. grants permission to reproduce this piece for non-profit educational purposes only on condition that the piece is maintained in its original format and that the copyright notice is displayed. Novo Nordisk Inc. reserves the right to revoke this permission at any time.
Concept developed by Rhonda Rogers, RN, BSN, CDE

© Novo Nordisk Inc.

126379R

ChangingDiabetes-us.com

6/2006

Printed in U.S.A.

