ADVANCED HEALTH AND MEDICATIONS

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Expected Outcomes

- **As a result of completing this section, you will:**
- **Know the body systems, functions, and be able to identify major signs and symptoms of physical illness related to each system**
- **Know the classifications of commonly prescribed medications, their actions, side effects and implications for care**

Introduction

Good health requires that each body system operate well in coordination with other body systems. When body systems function well, the person's overall health is at its best. This section discusses signs and symptoms of normal and abnormal body functions.

Learning Objectives:

- **As a result of reading this material, you will be able to:**

1) **Recognize major systems of the human body and functions of each system.**
2) **Recognize signs/symptoms that may indicate abnormal functioning of body systems.**
3) **Recognize the actions of commonly prescribed medications.**
4) **Identify possible side effects for commonly prescribed medications.**
5) **Identify implications for care of commonly prescribed medications.**

Recognizing, Recording, and Reporting Signs and Symptoms of Illness

Observing, reporting, and recording changes in a person's physical condition and behavior is an important responsibility as direct care staff. You have day-to-day contact with persons in a variety of activities, and are in the best position to notice when changes occur. Deciding the meaning of a sign or symptom is not your responsibility. Your responsibility is to consistently and accurately observe, report and record any change in physical conditions or behaviors and provide appropriate care. If there is an emergency, follow emergency procedures.

Remember to report what you observe, as well as any complaints of an individual. You should be particularly alert to pain, tenderness, swelling, redness, and heat, which are considered universal signs and symptoms of injury. These may occur in any part of the body. The following additional signs and symptoms will also help you in identifying health problems:

- Changes in dietary habits (i.e., increased or decreased intake of food or fluids)

- Changes in sleeping patterns, (i.e., excessive sleep, absence of sleep, interrupted sleep)

- Changes in skin:

    a) Color (i.e., pale, flushed, cyanotic [blue], blotchy [reddish spots], jaundiced [yellow])

    b) Condition (i.e., dry, clammy, cold, hot, increased perspiration, rash, itchy).

- Changes in vital signs (i.e., increased or decreased body temperature, pulse, respirations, or blood pressure)
- Changes in body odor (i.e., breath, perspiration, urine, stool)

- Changes in elimination (i.e., change in consistency, color, and odor of urine and stool, and increase/decrease/absence of urination or bowel movements)

- Changes in level of consciousness (i.e., confused, stuporous, dizziness, fainting, coma, convulsions)

- Changes in weight (i.e., significant decrease or increase)

- Changes in body or limb movement (i.e., shaking, tremors, jerking, stiffness, paralysis, unsteadiness, staggering)

- Changes in breathing (i.e., difficult, rapid, slow, painful breathing, wheezing, gasping, coughing, sneezing)

- Changes in the behavior (i.e., crying, restlessness, withdrawn, anxious)

- Changes in the digestive process (i.e., nausea, vomiting, diarrhea, or constipation)

- Injury to the body (i.e., bruises, cuts, punctures, abrasions, swelling, pain)

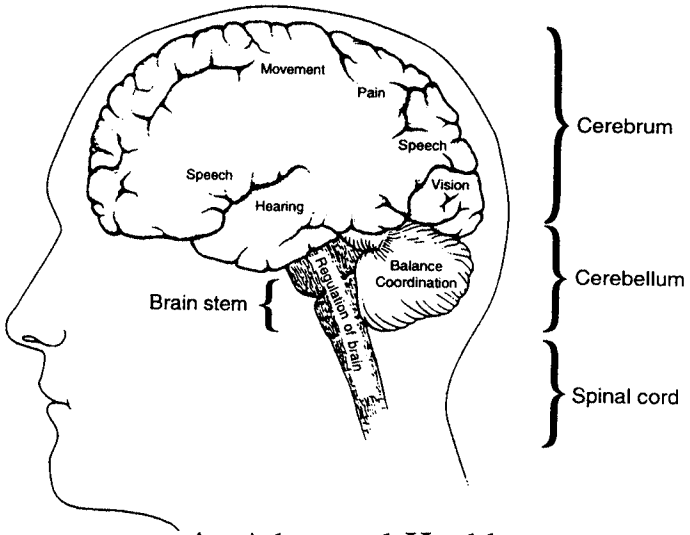
- Discharge (drainage) from a body opening or the skin

Nervous System

The nervous system is the most complex body system and consists of the brain, spinal cord, and nerves.

The nervous system coordinates all body functions, including respiration and circulation. The nervous system is directly or indirectly related to every other body system. It works closely with the sensory system (eyes, ears, nose, tongue and several other sense receptors). The sensory system allows you to see, hear, smell, taste and touch.

The nervous system has two parts: the central nervous system (CNS), brain and spinal cord, and the peripheral nervous system (nerves outside the brain and spinal cord). These two systems note changes in the body and outside environment. Nerves and sense organs send messages about the changes to the brain. The brain then interprets the messages and decides on a set of actions. Messages are sent by the brain to the nerves, which relay the messages to various parts of the body. These messages can involve voluntary actions (walking, talking, etc.); feelings (fear, anger, love, etc.); or automatic actions (heartbeat, respirations, contraction of blood vessels). Messages travel along the nerve pathways at all times, so the brain and body parts are in constant communication. The spinal cord is the primary pathway for messages traveling between peripheral areas of the body and the brain.



Abnormal Nervous System

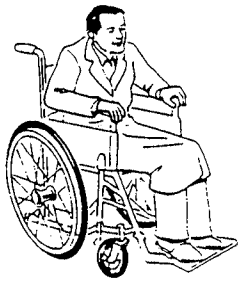
Almost any disease or body injury is liable to affect the nervous system in some way. There are many signs that show the nervous system is being affected. These signs do not always mean the nervous system is malfunctioning or diseased.

These signs can signal a drug overdose or side effects, a psychological disorder, or a problem elsewhere in the body. Some signs the nervous system is being affected by disease or drugs are:

Tremor

Vertigo

* trembling (**tremor**)
* dizziness or giddiness (**vertigo**)
* loss of muscle control
* dry mouth
* blurred vision
* inability to move (**paralysis**)
* unusual postures and body movements
* convulsions
* deep sleep from which a person cannot be roused (**coma**)
* being "in a daze" (**stupor**)
* irritability
* excitation, agitation, restlessness, and/or sleeplessness (**insomnia**)
* nausea
* headache
* speech difficulties
* changes in pulse, respiration and pupil size



Paralysis

Abnormal Nervous System (cont.)

Signs/Symptoms	Definition	Staff Action	Documentation
Seizures, convulsions. There are several kinds, from brief loss of consciousness to "grand mal" - during which the large muscles in the body tighten and twitch uncontrollably.	**Epilepsy**	Most persons with epilepsy must take medications regularly and on time to control seizures. If seizure occurs, keep the person safe and free of injury by laying them down with something under the head. Time the seizure and provide any first aid necessary after the seizure is over. Loosen constrictive clothing.	Record how long the seizure lasted. Describe what the person was doing during the seizure. For example: arms and legs were jerking, or eyes were turned to the left and did not move. Describe specifically which areas of the body were affected. Describe how the person acted after the seizure was over. Document first aid measures taken. Describe any significant events that may have triggered the seizure.

Abnormal Nervous System (cont.)

Signs/Symptoms	Definition	Staff Action	Documentation
Headache Personality change Disturbance in vision Disturbance in balance Seizures Sleeping too much or not being able to sleep enough Paralysis of a certain area of the body Pupils may be unequal (one big and one small)	**Possible brain tumor**	Take blood pressure, pulse and respiration. Report symptoms immediately to the doctor or nurse.	Record vital signs. Describe the symptoms observed and complaints from the person.

Abnormal Nervous System (cont.)

Signs/Symptoms	Definition	Staff Action	Documentation
Stiffness of arms and legs (rigidity) Shaking of hands, feet, arms and legs (tremors) Strange postures and movements Eyes rolling up so only the white of the eye is visible Drowsiness, dizziness, blurred vision Shuffling of feet when walking Drooling Side-to-side jaw movements Puckering, pouting, smacking of lips Continual movement of tongue in and out of the mouth Rocking, squirming and twisting	**Drug-induced movement disorder.**	Report symptoms to the doctor or nurse If person is having difficulty swallowing, or if eyes are rolled up and person cannot voluntarily bring them down, person should be taken for emergency treatment right away.	Describe all movements observed as well as any complaints verbalized by the person. Record who was notified and describe their instructions.

Nervous System Medications

Any disease or body injury is likely to affect the nervous system in some way. Signs that may signal the nervous system is being affected by disease or medications include: trembling; dizziness; loss of muscle control; dry mouth; blurred vision; inability to move; unusual postures and body movements; convulsions; loss of consciousness; irritability; agitation; sleeplessness; headaches; difficult speech; or changes in temperature, pulse, respiration, and pupil size. In the chart, medications used to treat conditions of the nervous system are listed by their therapeutic effect:

Classification	Purpose	Side Effects	Implications For Care
Analgesic/ Antipyretic (reduces fever) **- Aspirin** **- Tylenol** **- Motrin**	Relieves pain. Reduces fever.	Dizziness, rash, nausea, sweating, ringing in ears, and gastric irritation.	Administer with full glass of water to reduce gastric irritation. Aspirin thins the blood. Report prolonged bleeding to health professionals.
Antianxiety **- Xanax** **- Ativan** **- Valium**	Relieves moderate anxiety. Decreases muscle tension and spasm.	Drowsiness, lethargy, slurred speech, and muscle incoordination.	Abrupt stoppage of these medicines may produce withdrawal symptoms. Long-term use is not indicated because of physical dependence. Advise person not to drive or operate machinery if impaired.

Nervous System Medications (cont.)

Classification	Purpose	Side Effects	Implications for Care
Anticonvulsants **- Dilantin** **- Mysoline** **- Tegretol** **- Depakote/ Depakene**	Controls seizures and tremors.	Drowsiness, skin rashes, staggering gait, excessive growth of body hair, overgrowth of gum tissue, nausea, vomiting, constipation, blood disorders, and irritability	Good oral hygiene and gum massage are important. Blood levels for this group of medications must be done periodically to determine the amount of medication retained in the bloodstream. Liver function tests are routinely ordered.
Antidepressant **- Elavil** **- Sinequan** **- Tofranil** **- Prozac**	Relieves depression.	Drowsiness, dizziness, weakness, dry mouth, blurred vision, constipation, and rapid heart rate.	Increase fluid intake. Add bulk-forming foods to the diet and increase physical exercise to relieve constipation. Report irregular heartbeat or pulse above 100 to physician.

Nervous System Medications (cont.)

Classification	Purpose	Side Effects	Implications for Care
Antimanic **- Lithium**	Stabilizes mood swings	Mild: Nausea, diarrhea, thirst, frequent urination, fatigue, and fine hand tremors. Moderate: Vomiting, diarrhea, blurred vision, slurred speech, dry mouth, abdominal pain, weight loss, muscle spasms, drowsiness. Severe: Convulsions, infrequent urination, circulatory failure, coma, or death.	Blood lithium levels will need to be monitored frequently to determine therapeutic dosage. Blood should be drawn 8-12 hours after last dose of medication. Report symptoms to licensed health care provider. Salt and water intake should remain within normal limits. Thyroid and kidney function tests are required.

Nervous System Medications (cont.)

Classification	Purpose	Side Effects	Implications for Care
Antipsychotic **- Thorazine** **- Mellaril** **- Haldol** **- Navane** **- Prolixin** **- Clozaril**	- Treats agitation, psychotic behavior and delusional thinking.	Dry mouth, blurred vision, constipation, urinary retention, heat and sun intolerance, hypotension, blood disorders. **Movement Disorders: Tremors, muscle rigidity, drooling, mask-like facial expression, loss of coordination, fatigue, weakness, inability to sit still, lip smacking, tongue protrusion, upward rolling of the eyes.**	Relieve dry mouth by increasing water intake and following a good oral hygiene program. Monitor bowel and urinary output. Monitor blood pressure if symptoms of dizziness or fainting are present. Apply sunscreen if spending time outdoors. Report any sign of infection: i.e., sore throat or mouth, skin lesion, or bladder infection to health professional. Report symptoms of movement disorder to licensed health care provider. Watch skin for signs of bruising.

Nervous System Medications (cont.)

Classification	Purpose	Side Effects	Implications for Care
Antiparkinson - Artane - Cogentin - Symmetrel	Treatment of the symptoms of movement disorders caused by Parkinson's Disease and side effects of certain drugs.	Confusion, blurred vision, dry mouth, fatigue, dizziness, constipation, dry red skin, dilated pupils, and difficult urination.	Medication may make symptoms worse.
Sedative/Hypnotic A. Non-barbiturate - Restoril - Halcion B. Barbiturate - Sodium Amytal - Nembutal - Seconal	- Induces sleep and calm. - Central Nervous System depressant. - Note: The only difference between a hypnotic and a sedative is one of degree. As a hypnotic, the dosage is lower and a calming effect is the desired result.	Common side effects: Daytime sedation. Less common side effects: Nausea, vomiting, excitement, and hyperactivity.	May be habit-forming. Supportive measures to promote sleep and relaxation techniques (i.e. backrub, warm baths, soft music). Observe for signs of over-sedation, especially with elderly. Be alert for environmental hazards that may cause slips and falls.

Nervous System Medications (cont.)

Classification	Purpose	Side Effects	Implications for Care
Stimulant - Ritalin - Dexedrine	Increases attention span and reduces hyperactivity of attention deficit disorder.	Nervousness, dizziness, increased motor activity, blurred vision, dilated pupils, elevated blood pressure, irregular or rapid heart rate, increased pulse rate, decreased appetite, nausea, weight loss, and insomnia.	- Long-term use may result in psychological dependence. - Monitor pulse, blood pressure, and weight.

Circulatory System

The circulatory system, also called the cardiovascular system, carries food, oxygen and water to body cells and removes waste from the cells. The circulatory system is made up of the heart, blood vessels, and blood. The organs and functions of the system are:

Organ	Function
Heart	The heart is a hollow, muscular organ made up of four chambers or rooms. The heart lies under the ribs on the left side of the chest. When the heart muscle squeezes or contracts, this is called systole. After systole, the heart relaxes and this is called diastole.
Blood vessels:	Consists of three main parts - arteries, veins, and capillaries. Arteries are thick-walled vessels that carry blood from the heart to all parts of the body. Veins have thinner walls and carry blood back to the heart. Capillaries are thin-walled tubes that connect the smallest arteries with the smallest veins. When the blood is in the capillaries, the oxygen and food it carries pass through the thin walls to the cells. In turn, wastes from the cells pass through the walls back into the blood to be transported to other parts of the body for disposal.
Blood	Blood continuously circulates throughout the body in the blood vessels. It transports oxygen, O_2; carbon dioxide, CO_2, nutrients, hormones and enzymes to and from body cells. Blood is composed of plasma (a liquid that makes up more than half the blood); red blood cells which carry oxygen, carbon dioxide and water; white blood cells which help fight infection; and platelets which aid in blood clotting at wound sites.

Abnormal Circulatory System

Signs and Symptoms	Definition	Staff Action	Documentation
Pain - severe, steady. Lasts a few seconds to several minutes. Anxious, fearful, face pale, sweating, difficult breathing. Pulse varies, blood pressure is high.	**Angina Pectoris** - not enough blood flow to the heart muscle.	Have person in resting position. Take vital signs. Elevate head as needed. Follow emergency procedure. Stay with person.	Record temperature, pulse, respirations and blood pressure. Describe the location of the pain or describe the reaction of the person. Note color, sweating, difficult breathing. How long did pain last?
Sudden onset - chest pain. May travel to arm, jaw, neck, back and shoulders. May have persistent, severe pressure, with crushing, squeezing, heavy feeling. Nausea, vomiting, difficult breathing, fearful, sweating. Blood pressure may be high or low.	**Heart Attack (Myocardial Infarction - M.I.)** - Blocked blood vessel in the heart muscle that results in heart tissue death due to lack of oxygen.	Follow emergency procedure. Have person in resting position. Turn to side if person vomits. Stay with person. Take vital signs. Elevate head of bed as needed to help person breathe	Record temperature, pulse, respirations and blood pressure. Describe location of pain or describe reaction of person. Note color, sweating, difficult breathing, and how long pain lasted.

Abnormal Circulatory System (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
Difficult breathing Chronic cough Possible wheezing Weakness, tired Weight gain Sounds congested Pale or blue color Nausea, vomiting Refuses to eat Swelling in lower legs and feet Decrease in urine output High blood pressure	**Congestive Heart Failure (CHF)** - Unable to pump enough blood to supply body's needs.	Have head of bed up. Have person in resting position. Take blood pressure, respirations, pulse. Follow emergency procedures. Stay with person.	Record vital signs and exactly how person looked and acted.

Abnormal Circulatory System (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- Change in blood pressure or temperature. - Unable to move one side of body. One side of face droops. - Headache, dizzy, change in level of awareness or behavior. - Nausea and/or vomiting. - Slurred speech.	**Stroke (Cerebrovascular Accident)** - A stroke caused by blockage or rupturing of arteries in the brain.	- Have person in resting position. - Turn to side if vomits. - Take blood pressure, pulse, respirations, temperature. - Follow emergency procedures. - Stay with person.	Record vital signs and exactly how person looked and acted.
- Headache, blurred vision, dizziness. - Confusion, slurred speech.	**High blood pressure** - blood pressure over 150 (systolic) 90 (diastolic)	- Follow emergency procedures. - Stay with person. - Take blood pressure and pulse. - Keep person in comfortable position.	Record blood pressure, pulse.
- No pulse or breathing. - Blue - pale color.	**Cardiac Arrest** - Heart stops working.	- Begin CPR. - Call ambulance and follow emergency procedures. - Take pulse, respiration, blood pressure.	- Complete incident report. Describe exactly what happened. - Record pulse, respiration, and blood pressure.

Abnormal Circulatory System (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
Can have sudden onset of pain. Swelling, redness, fever, tenderness. Painful movement of an area; area can turn blue.	**Thrombophlebitis** - Inflammation of a vein that can lead to the formation of a blood clot in the vein.	Report to nurse/supervisor immediately. Have the person in a resting position, and protect the area (can use pillows). Take blood pressure, temperature, pulse and respirations.	Record - blood pressure, temperature, pulse, respiration. Describe what the area looks like and where the pain is.
Pale skin and fingernails. Weakness, dizzy, headache, sore tongue, sleepy, difficult breathing, rapid pulse. Feeling of being cold.	**Anemia** - A condition where there is a reduction in the number of red blood cells in the blood.	Take temperature, pulse, respiration, and blood pressure. Provide rest periods. Provide care of skin, mouth areas.	Record blood pressure, temperature, pulse, respirations. Describe how the person looks and acts.

Drugs For Cardiovascular and Blood Disorders

Classification	Purpose	Side Effects	Implications For Care
Antihypertensives Some common drugs: - Apresoline - Hygroton - Aldomet - Lopressor - Aldoril - Ser-Ap-Es - Dyazide - Minipress - Hydropres - Catapres - Capoten - Corgard - Nipride - Tenormin	These drugs are used on a daily basis to control high blood pressure.	Common Side Effects: - Appetite loss - Upset Stomach - Nausea - Vomiting - Cramps - Diarrhea - Constipation - Dizziness - Headache -Tingling in extremities - Restlessness - Chest Pains - Abnormal heart rhythms - Drowsiness - Skin rash	Check blood pressure as ordered. When the individual stands up quickly, low blood pressure may occur. Caution individual to rise slowly from a sitting or lying position to avoid dizziness or fainting. Hot showers and baths can also bring on orthostatic hypotension (low blood pressure). Use sunblock and/or keep protected from sun with hats and clothing. Consult with nurse/physician for guidelines on when to withhold a medication. Example: hold medication if blood pressure is lower than 100/60 or as directed by the health care provider.

Drugs For Cardiovascular and Blood Disorders (cont.)

Classification	Purpose	Side Effects	Implications For Care
Cardiac Stimulants Some common drugs: - Digitalis Leaf - Digitoxin - Digoxin - Lanoxin - Crystodigin	These drugs stimulate the heart to beat more slowly and more forcefully, so that the blood circulates better through the system.	Common side effects: - Irregular pulse - Pulse below 50 - Nausea - Vomiting - Anorexia (loss of appetite) Less common side effects: - Signs of toxicity - Diarrhea - Headache - Visual Disturbances - Weakness - Restlessness - Irritability	* Check person's pulse for one full minute. If below 50 beats per minute, do not give medication, notify nurse/physician. * Report any change in pulse rate or rhythm (sudden increase or decrease in rate or irregular rhythm) to health care provider.

Drugs for Cardiovascular and Blood Disorders (cont.)

Classification	Purpose	Side Effects	Implications for Care
Anticoagulants Some common drugs: Coumadin Dicumarol Heparin (given by injection only)	These drugs act to slow down the blood clotting process. This helps prevent or reduce the formation of clots in narrow or inflamed arteries or veins.	Common side effects: Bleeding (hemorrhage) Less common side effects Nausea Vomiting Diarrhea Blood in urine Anemia	Frequent lab work (prothrombin time) will be done during therapy. Blood in urine may be the first sign of hemorrhage. Also, bleeding from the gums and bruises on the skin may indicate a bleeding problem. Many other drugs, including over-the-counter drugs, such as aspirin, antihistamines, contraceptives and antacids, affect the action of anticoagulants.

Drugs for Cardiovascular and Blood Disorders (cont.)

Classification	Purpose	Side Effects	Implications For Care
Antianemics Some common drugs: Feosol (Fer-In-Sol) Ferrous Sulfate Folic Acid	These drugs replace iron needed in red blood cell production.	Common side effects: Black, tarry stools Constipation Less common side effects: Nausea Loss of appetite Diarrhea	Give between meals with ample fluids. If liquid medication is used, mix it with fruit juice or water according to package instructions. Use a straw to prevent staining of teeth. Avoid spilling on clothes.
Diuretics Some common drugs: Diuril Hydrodiuril Esidrix Aldactone Hygroton	These drugs help the body eliminate excess fluids from body tissue through the urine.	Common side effects: Dryness of mouth Irregular pulse Thirst Nausea Vomiting Mood changes Rash Leg cramps Muscle twitching Low blood pressure	Frequent urination is common. Therefore, diuretics should not be given at bedtime. Some diuretics remove essential body elements, such as potassium with body fluids. Foods high in potassium or potassium supplements should be taken daily if recommended. Should be taken with food to prevent gastric irritation.

Drugs for Cardiovascular and Drug Disorders (Cont.)

Classification	Purpose	Side Effects	Implications for Care
Antianginal (coronary vasodilators) Drugs: Nitroglycerin (Nitro-Bid, Nitrostat) Isordil	These drugs relax or dilate the coronary arteries so the heart receives more blood and oxygen. They are used especially in the control of angina pectoris.	Common side effects: Headache Dizziness Flushed skin Orthostatic hypotension (drop in blood pressure when getting up from sitting or lying position) Nausea Rapid pulse	Nitroglycerin tablets are placed under the tongue and allowed to dissolve there. Instruct person to allow tablet to dissolve naturally and to not swallow until drug is entirely dissolved. Advise person to relax for 15-20 minutes to prevent dizziness and faintness. Repeat medication as indicated. Remain with person until pain subsides. If pain does not subside, call 911.

Respiratory System

The respiratory system supplies oxygen which is vital to tissue cells and eliminates carbon dioxide wastes from the cells.

Oxygen enters the body through the mouth or nose. Oxygen then goes down the trachea (windpipe) into the lungs, where blood exchanges carbon dioxide for oxygen - "used" air for "new" air. The up and down movement of the diaphragm, which forms the floor of the chest cavity, causes air to move in (inhalation) and out (exhalation) of the lungs. The blood delivers oxygen to every part of the body, which enables one to continue living.

Parts and function of the respiratory system:

1. Nose, mouth - entry for air into the body; warms, cleans and moistens air.

2. Trachea (windpipe) - tube by which air travels to the lungs.

3. Epiglottis - flap in throat that acts as a safety door, which closes when food is swallowed.

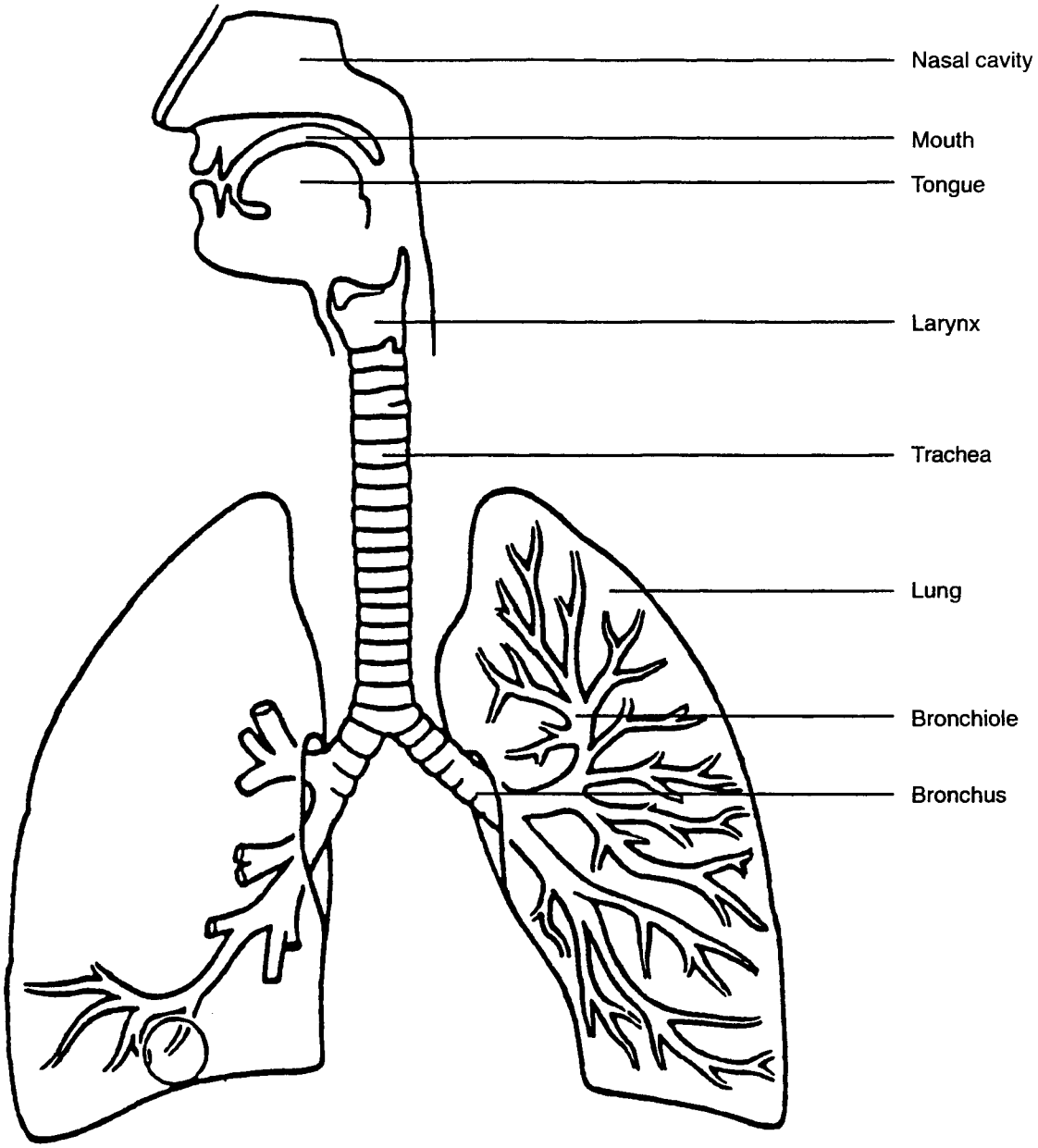
4. Lungs - organs where oxygen enters the bloodstream to be delivered to the whole body. It is important to keep the lungs healthy so air can easily enter the bloodstream.

5. Diaphragm - muscle that moves up and down, creating a change in air pressure, aiding in air entering and leaving the lungs.

6. Cilia - tiny hairs in the lungs and windpipe that "sweep" dirt, dust, and pollen into a sticky substance called mucus. Cilia sweeps it upward from the lungs, thus keeping the lungs clean.

7. Mucus - A thick liquid produced by the mucous membrane; the secretion moistens and protects the membrane.

8. Sputum - material coughed up from the lungs and ejected through the mouth.


Nasal cavity
Mouth
Tongue
Larynx
Trachea
Lung
Bronchiole
Bronchus

Respiratory System Problems

Some of the most common respiratory diseases are the common cold, flu, and pneumonia, bronchitis, asthma, chronic obstructive pulmonary disease (COPD), and emphysema. Smoking increases the symptoms and the discomfort of individuals with respiratory problems. Individuals with developmental disabilities have many respiratory problems due to limited mobility, swallowing difficulties which may result in aspiration, contracture (shortening of tendons or muscles), and scoliosis (curvature of the spine).

To minimize the risk of aspiration (when food or fluid is breathed into the windpipe), be sure individuals are in proper position for eating, drinking, and tube feedings.

Proper positioning includes:

a) Seated as upright as possible, but elevated a minimum of 45 degrees
b) Seated all the way back in the chair with hips stabilized with a seat belt when needed
c) Head in midline and slightly bent (flexed) forward
d) Feet supported

All individuals must remain upright or at a minimum 45 degrees of elevation for one hour after eating, taking fluids or receiving tube feedings.

Frequent handwashing, using the proper procedure, is the most important step to prevent the spread of many infectious respiratory diseases. Please refer to the handwashing procedure.

Persons with respiratory diseases should be in a smoke-free environment.

Respiratory System Conditions

SIGNS AND SYMPTOMS	DEFINITION OF CONDITION	STAFF ACTION	STAFF DOCUMENTATION
- cough - sneezing - scratchy sensation in throat - nasal drainage - feelings of illness, discomfort and weakness - headache - backache - nasal drainage - may thicken and become yellow or greenish	<u>Common Cold</u> is caused by one of over 100 different viruses with a usual incubation period of 1-4 days. A cold is communicable for 2-3 days after onset of symptoms. Colds are spread by aerosol droplets transmitted by sneezing, coughing, or wiping the nose and then touching other surfaces. To limit the spread of colds, use disposable cups and tissue, and wash hands frequently.	No sharing of towels, drinking glasses or eating utensils. Encourage individuals to rest and increase fluid intake unless this conflicts with physician's orders. Follow medication and treatment orders. Cold symptoms may be an indication of more serious problems. If cold lasts more than 7-10 days, notify the nurse/physician. Take vital signs (TPR and BP)	All signs and symptoms. Frequency of cough, duration and how individual is tolerating coughing. Amount and appearance of sputum coughed up. Color (clear, yellow, greenish, blood-streaked) and consistency (thick or watery) of the nasal discharge. Medications and treatment given. Fluid intake. Individual's response to treatment and medications. Vital signs (TPR and BP). Nurse/physician notified and instructions received.

The most effective means of decreasing the spread of infection is frequent handwashing using the proper handwashing procedure.

Respiratory System Conditions (cont.)

SIGNS AND SYMPTOMS	DEFINITION OF CONDITION	STAFF ACTION	STAFF DOCUMENTATION
- Chest pain - Chills - Fever - Cough - Headache - May have yellow, greenish or bloody sputum - Breathing may be more difficult	**Pneumonia** may be caused by viruses, bacteria, or aspiration (taking foreign matter into the lungs). Diagnosis is made by chest x-ray, sputum and blood testing. **Viral pneumonia** caused by viruses and treated by supportive measures. **Bacterial pneumonia** is caused by bacteria and treated with medication to kill or stop the growth of bacteria. **Aspiration pneumonia** is caused by aspiration of food, fluids or foreign bodies into the airways. Individuals at risk for aspiration are those with difficulty swallowing, gastroesophageal reflux (GER); degenerative diseases (Huntington's Disease, Muscular Dystrophy, Parkinson's disease); strokes (cardiovascular accidents); altered state of consciousness; epilepsy; and tracheostomy (surgical opening of trachea to allow air passage).	Measures to prevent risk of aspiration - proper positioning. Adequate fluid and food intake. Monitor vital signs (TPR and BP) every four hours. Give medication as ordered to lower temperature and stop growth of bacteria. Encourage individual to get proper rest. Give oxygen as ordered. Suction oral secretions as ordered. Postural drainage and percussion as ordered to help remove mucus from lungs and airways. Encourage individual to cough and take deep breaths to clear air passages. Encourage individual to move about and maintain positions for good lung expansion. Do not allow person to scoot down in bed and slouch. Keep licensed health professional informed of person's condition.	Signs and symptoms noted. Vital signs. Food and fluid intake. Medication and treatments given. Individual's response to medications and treatments. Frequency of cough and how cough interferes with normal routine. Amount and appearance of sputum (color and consistency - thick or watery). Description of breath sounds. Date and time nurse/physician was notified of person's condition and orders received. Preventive measures - positioning, coughing, deep breathing.

Respiratory System Conditions (cont.)

SIGNS AND SYMPTOMS	DEFINITION OF CONDITION	STAFF ACTION	STAFF DOCUMENTATION
- Increased airway secretions - Hard coughing - Feeling of discomfort or pain	**Bronchitis** is an inflammation of the airway caused by irritation or infection. Cigarette smoking, environmental pollutants, bacterial and viral infections all cause increased secretions. These secretions may pool and intensify signs and symptoms. Medications are prescribed to fight infection, suppress cough, decrease pain, and dilate the airway to keep air passages open. Air passages can become plugged with the increased secretions. Increased fluid intake helps keep secretions thin. Chronic bronchitis can lead to more serious diseases.	Give individuals more fluids to help keep secretions thin. Encourage rest. Provide a smoke-free environment. Give medication and treatments as ordered. Monitor vital signs (TPR and BP). Keep licensed health professional informed of person's condition.	Signs and symptoms noted. Vital signs. Food and fluid intake. Medication and treatments given. Individual's response to medication and treatments. When licensed health professional was notified and instructions received.

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- Shortness of breath - Difficulty in breathing - Wheezing when breathing out - Coughing	**Asthma** is a reaction to some irritating substance in the environment, to infection, to vigorous exercise, or to emotional stress. The airways narrow and inhaled air cannot be exhaled properly. Tiny air sacs in the lungs become plugged with thick mucus which is hard to cough up. There is wheezing, shortness of breath and coughing. Treatment - medication to dilate airways, fluid, and oxygen if ordered. Some individuals are given allergy treatments to make them less sensitive to asthma-causing conditions.	Give medications and treatments as ordered. Help individual eliminate asthma trigger (irritant, emotional stress, exertion). Encourage adequate diet and fluid intake. Provide an environment that is smoke-free and as free of other pollutants as possible.	Note signs and symptoms. Medications and treatments given. Individual's response to medications and treatments. Time licensed health professional was notified and any orders received.

IF ASTHMA ATTACK DOES NOT RESPOND TO TREATMENT, IT CAN BE LIFE-THREATENING.

NOTIFY NURSE/PHYSICIAN IMMEDIATELY!

Respiratory System Conditions (cont.)

SIGNS AND SYMPTOMS	DEFINITION OF CONDITION	STAFF ACTION	STAFF DOCUMENTATION
- Shortness of breath - Difficulty in breathing - Bluish color - "Barrel chest" appearance - Rapid breathing - Rapid heart rate - Elevated temperature - Foul smelling sputum	**Emphysema** is the result of air spaces at the far end of the airway which no longer function well. This occurs due to disease or repeated bronchial infections and exposure to irritants. "Old air" gets trapped and new air can't get into the respiratory system on the next breath. The individual gets a "barrel chest." There is no specific cure for emphysema. Breathing exercises may help. Medications may be ordered for infections, to thin the mucus, to expand the airway, and to promote coughing up of sputum. Oxygen may be ordered. **Persons with emphysema should live in a smoke-free environment.**	Have individual assume position which makes it easier to breathe (head of bed up.) Give medications and treatments as ordered. Take vital signs as ordered. Encourage deep breathing and coughing. Encourage fluids and a proper diet. Protect individuals from persons who are sick. Protect individuals from known irritants, such as smoke. Keep licensed health professional informed on person's condition.	Amount, odor and color of sputum. Signs and symptoms noted. Vital signs (TPR and BP). Medications and treatments given. Individual's responses to medications and treatments. Food and fluid intake of individual. Licensed health professional notified and any orders received.

NO SMOKING ALLOWED WHEN OXYGEN IS IN USE

SIGNS AND SYMPTOMS	DEFINITION OF CONDITION	STAFF ACTION	STAFF DOCUMENTATION
- Difficulty in breathing - Chronic cough	**Chronic Obstructive Pulmonary Disease (COPD)** is an irreversible condition with loss of lung capacity. The person does not receive enough oxygen. The heart must work harder to deliver more blood to the lungs. COPD is a group of diseases that include: asthma, bronchitis, emphysema, and bronchiectasis. COPD is aggravated by cigarette smoke and air pollution. Treatment includes oxygen therapy; medications to dilate the airway and stop the cough; postural drainage to move secretions; breathing exercises; adequate diet and fluid intake; and a smoke-free environment. Persons with COPD should avoid contact with persons with respiratory infections.	Give medications and treatments as ordered. Take vital signs (TPR and BP). Provide a smoke-free environment. Eliminate as much air pollution as possible. Encourage fluids and adequate diet. Keep nurse/physician informed of person's condition.	Signs and symptoms noted. Medications and treatments given. Person's response to medications and treatments. Vital signs (TPR and BP). Food and fluid intake. Nurse/physician notified and any orders received.

Respiratory Medications

The following chart lists common medications used to treat respiratory tract disorders. Respiratory medications are often given in combination with each other to relieve a variety of symptoms. For example: a medicine might contain a bronchodilator to open the airways and an expectorant to loosen sputum so that it can be coughed up. Many over-the-counter cold and allergy remedies are combinations of antihistamines, decongestants, expectorants and antitussives. Some examples of combination medications include: Actifed, Benylin, Oranade, and Phenergan expectorant. The administration of respiratory medications often requires the caregiver to be familiar with the applications of nose or atomized mist sprays and nose drops.

Respiratory Medications

Classification	Action	Side Effects	Implications For Care
Analgesics/antipyretics Examples: - Aspirin - Tylenol	Relieve pain, and reduce inflammation.	Common side effects: Dizziness Rash Nausea Sweating Ringing in ears Less common side effects: Vomiting Insomnia Elevated blood pressure	Administer oral medication with one full glass of water to reduce gastric irritation. Store aspirin away from moisture, leaving cotton in the bottle. If medication has strong odor of vinegar, destroy it.
Antihistamines Examples: - Benadryl - Seldane	Control allergic responses. Shrink swollen and irritated blood vessels in upper respiratory tract.	Dizziness Drowsiness Visual disturbances Nervousness Dry mouth Fast pulse Constipation May interact with other medicines.	When taking medication, avoid activities requiring good motor coordination (i.e., use of power tools or driving car). Monitor blood pressure and pulse rate. Avoid use of alcohol.

Respiratory Medications (cont.)

Classification	Action	Side Effects	Implications for Care
Anti-Infectives Antibiotics Examples: - Erythromycin - Ampicillin - Keflex - Tetracycline	Inhibit growth of bacteria.	Common side effects: - Allergic reaction - Dizziness - Skin rash - Nausea - Vomiting - Hives - Itching Less common side effects: - Ringing in ears - Kidney damage - Deafness - Nerve injury - Diarrhea - Anemia - Vaginal infection	Take on time and as ordered. If an allergic reaction occurs, hold medication and notify health professionals.
Antitussives Examples: - Benylin - Robitussin D.M.	Cough suppressant.	- Drowsiness - Respiratory depression - Sedation - Sleeplessness - Dizziness - Constipation - Constriction of pupils	If in syrup form, no fluids should be given following dose. Monitor vital signs and document episodes of coughing.
Bronchodilator Examples: - Theophylline - Albuterol	Allows bronchioles to expand and relax by relaxing respiratory muscles that have gone into spasm.	- Heart stimulant - Anxiety - Restlessness - Dizziness - Weakness - Pale skin - May interact with other medications	- Monitor pulse. - Describe respirations. - Describe color of face, lips and nailbeds.

Respiratory Medications (cont.)

Classification	Action	Side Effects	Implications for Care
Decongestant Examples: - Afrin - Sudafed	Reduces swelling of irritated membranes. Has drying effect on mucous membranes.	Topical application may cause irritation of nasal mucosa. Anxiety Nervousness Shakiness	Describe nasal secretions (type, color and amount).
Demulcent Examples: - Cough drops - Throat lozenges	Coats and soothes irritated mucous membranes.	May increase thirst	Avoid lying flat on back to prevent choking on cough drops.
Expectorant Examples: - Robitussin - Terpin Hydrate	Loosens phlegm and relieves congestion. Increases output of respiratory tract fluids.	Gastrointestinal upset Vomiting	Do not drink fluids immediately following dose. Describe type of cough (i.e., loose or dry) and encourage individual to "spit out" loosened secretions.

Normal Digestive System

The digestive system, also called the gastrointestinal or G.I. system, takes in food, prepares it for use by the body, absorbs the food and excretes the waste. The organs of digestion are:

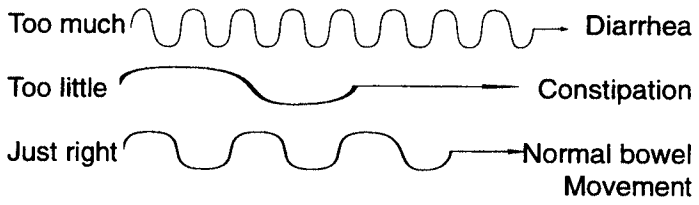
Organ	Function
Mouth	Before chewing begins, the salivary glands start to produce a fluid called saliva. Saliva helps dissolve food and coats the food so it can be easily swallowed.
Esophagus	Foods passes into the esophagus, which links the mouth to the stomach.
Stomach	The stomach is a gourd-shaped pouch that can expand to hold up to two quarts of food and liquid. Valves at the entrance and exit of the stomach control intake and outlet of food. Gastric juice and digestive enzymes aid in digestion. Food remains in the stomach for 3-4 hours.
Small intestine	The small intestine is a long, coiled tube about 20 feet long. By the time food has passed through all 20 feet of the small intestine, most of the nutrients have been absorbed. All that is left is undigestible material mixed with water.
Large intestine	The large intestine is 4-5 feet long. Excess water is absorbed into the bloodstream, leaving undigested wastes called feces, or stools. The feces leave the body by way of the rectum, and its opening, the anus.

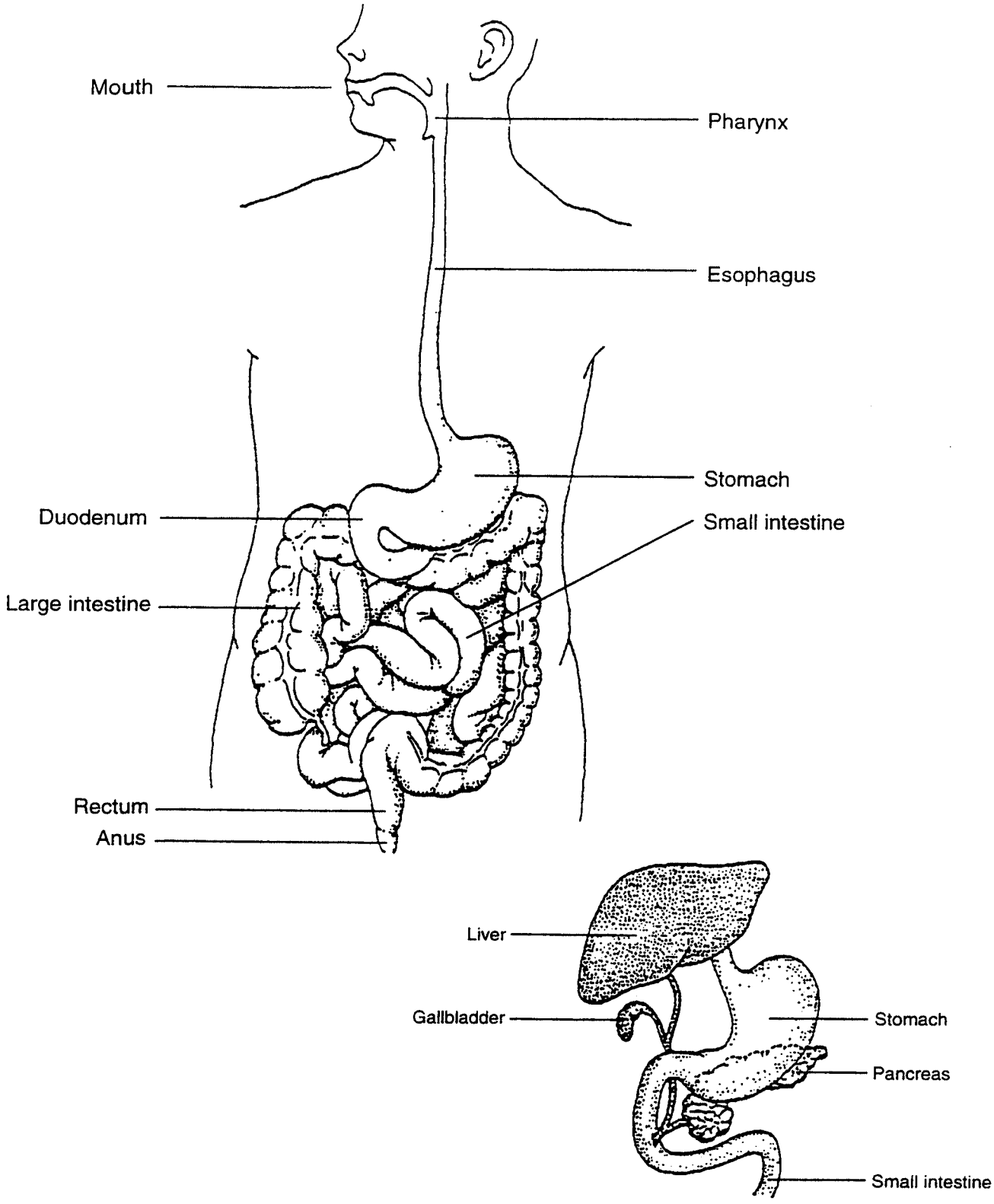
Liver and gallbladder — The liver secretes bile, a fluid that aids in digestion. The bile is collected in a storage pouch called the gallbladder until it is needed for digestion. The liver also removes certain waste products from the blood. The liver is a very important organ - so important that the body cannot survive without it.

Pancreas — The pancreas produces digestive juices. The pancreas also secretes insulin, a hormone that regulates the amount of sugar used by the cells.

Peristalsis is the rhythmic contractions of the smooth muscles lining the gastrointestinal tract, designed to move food and waste materials through the system.

INTESTINAL MOTILITY = PERISTALSIS




Mouth
Pharynx
Esophagus
Stomach
Duodenum
Small intestine
Large intestine
Rectum
Anus
Liver
Gallbladder
Stomach
Pancreas
Small intestine

Gastrointestinal (GI) Abnormalities

There are many abnormalities which occur in the G.I. system. These include difficulty in swallowing, aspiration, gastroesophageal reflux, hiatal hernia (pouching of the stomach up into the chest cavity), constipation, diarrhea, ulcers, gastritis (inflammation of the stomach's mucous membrane), intestinal obstruction, irritable bowel syndrome (spastic colon, spastic colitis), black tarry stools, stools streaked with blood, and gall bladder problems. Refer to the accompanying chart for definitions, signs and symptoms of condition, staff actions, and staff documentation.

To prevent or minimize many problems in the G.I. system, an individual's position during eating or tube feedings must be addressed constantly. Before individuals eat, drink fluids, or receive tube feedings, they must be in proper position. Proper position includes:

a) as near upright as possible, but not less than 45 degrees elevation
b) seated all the way back in the chair with hips stabilized and a seat belt when needed
c) head in midline, slightly flexed (bent) forward
d) feet supported

A person's position affects breathing, eating, digestion, cognitive skills and general health. As a caregiver, it is your responsibility to make sure individuals are in proper position to eat, drink, and receive tube feedings. This is the most important measure to minimize choking and aspiration. All persons should remain elevated a minimum of 45 degrees for an hour after eating and/or receiving tube feedings. Supine position (lying on back) should be avoided for eating. Do not attempt to assist any individual to eat while his/her head is tilted backward as this presents an increased risk for aspiration.

Therapists (OT, PT, Speech) will evaluate the person and consult with other interdisciplinary team members to prescribe elevated sidelying and prone positions when appropriate.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- gagging - coughing - drooling - sticking fingers into back of throat - food pooling in mouth	**Impaired swallowing** occurs when there is a problem in the swallowing mechanism due to a neurological condition, obstruction, fatigue, or limited awareness.	An individual with impaired swallowing should always be positioned so that his/her head is elevated at least 45 degrees, as there are oral secretions which are present and pose a risk for aspiration. Follow positioning instructions. Follow eating program which has been developed by the professionals. Assist and/or encourage the individual to eat small amounts slowly. Be sure the mouth is empty prior to giving additional food or fluids. Do not continue to offer food or fluids when individual is coughing or choking. Follow first aid and basic life support procedures. Notify licensed professional of problem for instructions on how to proceed.	Any problems noted when individual eats or takes fluids. Position of individual when impaired swallowing was noted. Which foods or fluids seemed to cause problems. When you notified the nurse/physician and what instructions were given to you and what you did. Individual's response to treatment.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- gagging - coughing - choking - cyanosis	**Aspiration** occurs when gastic secretions, saliva, food, fluids, or objects enter the respiratory system by way of the tracheo-bronchial passages because of improper function of normal protective mechanism. Aspiration may occur when a person is in an altered state of consciousness due to seizure activity, drugs, alcohol, anesthesia, acute infection or shock. Various disease states which affect the normal swallowing mechanism may also contribute to aspiration.	Always follow positioning instructions for eating, drinking and tube feedings. Give small amounts of food and fluids slowly. Suction when necessary to clear airway. If person is confused, remind him/her to chew and swallow. Perform abdominal thrust (clearing airway of food) when appropriate. Perform first aid and basic life support procedures. Monitor vital signs and color. Notify nurse/physician as soon as possible. Call EMS if necessary. Continue to observe for signs and symptoms of possible developing pneumonia.	Signs and symptoms. Person's position when problem noted. What you did - first aid measures and monitoring. Person's responses to your action. When and whom you notified and instruction received. Time EMS was notified and when they arrived.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- Nausea - Vomiting - Gastric bleeding as evidenced by black tarry stool, paleness, and weakness	**Gastritis** is an inflammation of the stomach, which may be a symptom of an underlying disease.	Note signs and symptoms and report to nurse/physician. Follow orders for medications and treatments.	Note signs and symptoms. Describe appearance of emesis (vomitus) and/or stool. Report to nurse/physician and instructions received. Medications and treatments given. Response to treatment and medication.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- Pain - Burning feeling - Nausea - Vomiting - Individual may stick his/her finger back into the throat due to discomfort	**Gastroesophogeal Reflux (GER)** is a backward flow of stomach contents into the esophagus. This may burn (heartburn) and be very painful. The lining of the esophagus may become scarred or narrowed (stricture), or an esophageal ulcer may develop and bleed. The contents of the stomach which flow back up into the esophagus may wash up into the throat and be aspirated into the respiratory system. If a stricture develops, an individual will usually have trouble getting food beyond this narrowed area. May be surgically corrected, but GER can develop again.	Follow positioning instructions for eating, drinking and receiving tube feedings. If symptoms develop, discontinue oral and tube feeding and notify nurse/physician as soon as possible. Suction as ordered. Report to nurse/physician signs and symptoms noted. Follow first aid and basic life support measures.	Signs and symptoms noted. Appearance and amount of emesis. Report to the nurse/physician and instructions received. Medications and treatments. Responses to treatments and medications.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff action	Staff Documentation
- dry hard stool - complaint of pain - poor appetite - stomach ache - irregular bowel movements - blood in or on the stool, which may occur from an anal skin tear developed with the passage of a large stool - difficulty in expelling stool - frequent soiling due to seepage of loose stool around the larger mass of stool	**Constipation** is the passage of dry hard stools. This may lead to an impaction - that is, when dry, hard stool blocks the passage from the rectum to the anus. There may be seepage of loose stool around the impaction. **Causes of constipation:** - Lack of bulk in diet - Inadequate fluid intake - Lack of exercise - Lack of reflexes to stimulate a bowel movement - Ignoring the impulse to have a bowel movement - Oral or dental problems which make it difficult to consume an adequate diet - Travel and changes in living conditions	Adequate fluid intake. Encourage 8-10 glasses of fluid per day. Adequate diet. A diet high in fiber must be taken with adequate fluids. Good oral hygiene. Follow up on dental needs. Provide opportunities for exercise and frequent position changes. Provide an opportunity for going to the bathroom. Report status of individual to nurse/physician and follow orders given to treat constipation. Review bowel record. An impaction may be manually removed. Follow the directions of physician or nurse.	Signs and symptoms. Amount of fluids taken and food eaten. Reporting problem to nurse/physician with instructions received. Medication and treatments given. Response to treatment and medications.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- frequent loose, watery stools - abdominal cramping - generalized weakness	**Diarrhea** is an excessive elimination of watery stools. It is a symptom of an underlying disorder and may lead to dehydration and electrolyte imbalance. Diarrhea may lead to serious outcomes.	Report to the nurse/physician the number, amount, color, and consistency of stools. Give medications as ordered. Review bowel record. Keep nurse/physician informed of progress of diarrhea.	Signs and symptoms noted. Reporting to nurse/physician with instructions received. Medications and treatment given. Individual's response to treatment and medications.
- pain - nausea - vomiting - black tarry stool or blood-streaked stool depending on location of ulcer	**Ulcers** are crater-like lesions of the mucous membrane and may be found in the mouth, esophagus, stomach, or intestines. Treatment, signs, and symptoms vary depending on the location of the ulcer.	Notify nurse/physician when signs and symptoms are noted. Follow medical and nursing orders.	Signs and symptoms noted. When you notified the nurse/physician, along with the instructions and orders received. Medications and treatments given. Response to treatment and medications.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of Condition	Staff action	Staff Documentation
- Abdominal pain - Vomiting fecal material - Failure to have a bowel movement - Distention (swelling) of abdomen - Seepage of loose stool - Drop in blood pressure - Elevated temperature	**Intestinal obstruction** is a blockage of the intestines. The contents of the intestines fail to pass through the bowels.	Notify the nurse/physician of signs and symptoms noted. Follow orders given by the nurse/physician. Monitor vital signs (TPR and BP).	Signs and symptoms noted. Amount and appearance of stools. Nurse/physician notified and instructions received. Medication and treatment given. Response to treatment and medications.
- pain - burning feeling - feeling of pressure - belching	**Hiatal hernia** is the pouching of the stomach up into the chest cavity. A surgical procedure is used to correct hernia.	Follow positioning instructions at mealtime and for tube feedings. Follow individual eating programs. Report any signs or symptoms to the nurse/physician. Follow medical and nursing orders.	Signs and symptoms noted. Current orders carried out. Reporting to nurse/physician and instructions received. Medications and treatments given. Response to treatment and medications.

Gastrointestinal Abnormalities (cont.)

Signs and Symptoms	Definition of condition	Staff Action	Staff Documentation
- Diarrhea alternating with constipation - Abdominal pain - Abdominal cramping - Abdominal distention	**Irritable bowel syndrome** (also called spastic colon or spastic colitis) is a condition with bowel movements alternating between constipation and diarrhea. Causes are: - Emotional stress - Certain foods - Lactose intolerance - Abuse of laxatives - Food poisoning - Colon cancer	Ensure that individuals avoid known dietary irritants Give medications as ordered Report problems to nurse/physician	Signs and symptoms noted Foods eaten by individual Evidence of stress or tension noted in individual. Reporting to the nurse/physician and instructions received Medications and treatments given Response to medication and treatment
- Elevated temperature - Nausea, vomiting - Jaundice - Pain in right upper portion of abdomen	**Gallbladder infection and gall stones** are common in individuals over 40 years of age. Treatment consists of medications, special diet, and surgery when necessary.	Follow medication and treatment orders. Monitor diet. Report problems to nurse/physician.	Signs and symptoms noted. Food eaten by individual. Reporting to the nurse/physician along with orders obtained. Medications and treatments. Individual's response to medication and treatments.

Gastrointestinal Medications

In most gastrointestinal (G.I.) disorders, medications are given as an added support to other measures. For instance: People with ulcers or gastritis must also change their diet and give up irritating substances such as tobacco, coffee and alcohol in order to ease disturbing symptoms. As a health care worker, you will be assisting individuals to understand how good health practices and prescribed medications can help them feel better. Here are three general principles to remember when giving G.I. medications.

1. Time of administration is important. Medications that aid digestion must be given before, during or after meals as ordered; otherwise, they may not be effective.

2. Give the recommended amount of liquids with each medication as directed. Gastrointestinal medications must be properly diluted to be effective and avoid further irritation of the G.I. tract.

3. If an individual requires medication for abdominal pain, check with your supervisor or health professional before administering a prn analgesic. Abdominal pain may be a signal of other undiagnosed problems.

In the following charts, medications used for the G.I. system are categorized into the following classifications: antacids, antidiahrreals, antiemetics, antispasmodics, antiulcer, cathartics, emetics, stool softeners, minerals, and vitamins. These categories are not all-inclusive, but represent examples of the most commonly-used medications.

Gastrointestinal Medications

Classification	Action	Side Effects	Implications For Care
Antacid Examples: - Gelusil - Maalox	Neutralizes stomach acid. Soothes and coats stomach lining.	Antacids containing magnesium cause diarrhea. Antacids containing aluminum or calcium cause constipation.	Do not give with meals or other medicines unless instructed to do so by physician. Overuse can lead to excess acid production.
Antidiarrheal Examples: - Imodium - Kaopectate - Paregoric	Stops diarrhea by reducing motility (movement) of the intestine.	Constipation Nausea Vomiting Abdominal cramping Drowsiness Dizziness Skin rash Blurred vision Dry mouth	Observe frequency of bowel movements. Describe stool (amount, color, and consistency).
Antiemetic Examples: - Dramamine - Compazine	Suppresses nausea and vomiting by acting on the brain control center.	Drowsiness	Observe frequency of vomiting. Describe vomitus.
Antispasmodic Examples: - Bentyl - Donnatol	Relieves smooth muscle spasms and reduces intestinal motility.	Constipation Bloated feeling Dizziness	Give 30-60 minutes before meals.
Antiulcer Examples: - Carafate - Zantac - Reglan	Forms protective coating over ulcer. Reduces gastric secretions.	Nausea Constipation Diarrhea Dry mouth	Stop smoking. Avoid use of alcohol.

Gastrointestinal Medications (cont.)

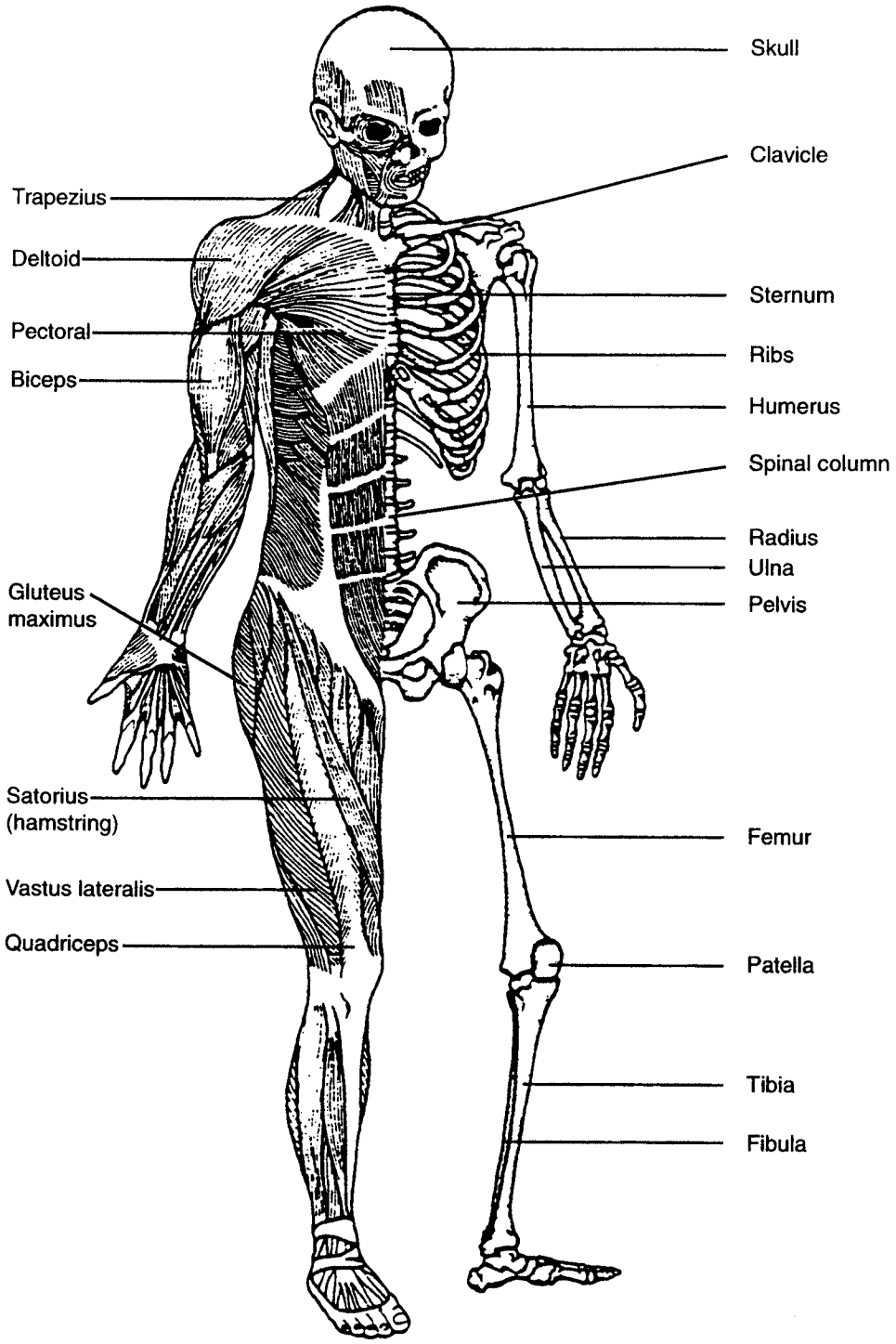
Classification	Action	Side Effects	Implications For Care
Emetic Example: - Ipecac Syrup	Induces vomiting by stimulating the brain center that controls vomiting. Used in cases of acute poisoning.		Do not give on own. Call Poison Control Center for instructions.
Laxative/Stool Softener Examples: - Milk of Magnesia - Metamucil - Colace - Dulcolax Suppository	Relieves constipation by drawing water into the intestine, increasing bulk of intestinal content, softening feces, or irritating the bowel wall causing evacuation of feces.	May cause distention with gas and diarrhea.	The need for laxatives and stool softeners can be avoided by eating a diet adequate in bulk and fluids, exercising regularly, and avoiding a rushed, hurried schedule.
Neutralizer Example: - Activated Charcoal	Neutralizes and absorbs stomach content. Used to treat ingestion of toxic substances.	Nausea.	Do not give on own. Call Poison Control Center for instructions.

Normal Musculoskeletal System

The musculoskeletal system consists of the bones, muscles, ligaments and tendons. This system provides the body's framework, protects internal organs and other underlying structures. It also allows body movement, produces heat, and manufactures blood components. Muscles and bones provide protection to organs and structures of other body systems. Muscle action is controlled by the nervous system.

The organs of the musculoskeletal system are:

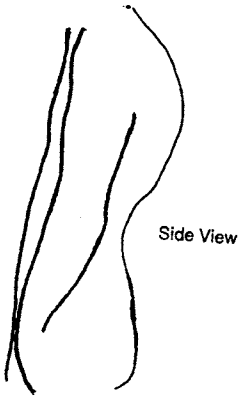
Organ	Description
Bones, Ligaments and Joints	The body has over 200 bones. Bone is a hard, dense tissue that forms the skeleton. Bones vary in size and shape. Where two or more bones join, they form a joint. Bones are usually held together at joints by fibrous bands called ligaments. Bones also store minerals and help produce blood cells.
Muscles and Tendons	Muscles are made of special tissue that can lengthen and shorten, resulting in movement. Tendons are tissues that attach muscles to bones. Muscle groups work together to produce movement. Muscles also protect underlying structures such as bones, nerves and blood vessels. Muscle actions may be involuntary or voluntary. Involuntary muscles, such as the heart, diaphragm, and intestines, are automatically controlled by the brain. You don't have to think about making them work.


Skull
Clavicle
Trapezius
Deltoid
Sternum
Pectoral
Ribs
Biceps
Humerus
Spinal column
Radius
Ulna
Gluteus maximus
Pelvis
Satorius (hamstring)
Femur
Vastus lateralis
Quadriceps
Patella
Tibia
Fibula

Abnormalities of Musculoskeletal System

Signs and Symptoms	Description of Condition	Staff Action	Staff Documentation
Backache or neck ache with radiation to arms and legs Fractures may occur after a fall or when an extremity is moved with too much force or pressure. Deformities Loss of height	**Osteoporosis** - bones are weak and brittle and easily fractured. Can be caused by poor nutrition, lack of exercise and weight-bearing, deficiency of estrogen in women past menopause, from use of certain drugs, and from immobility. Various conditions (alcoholism, chronic renal failure, diabetes, liver disease, hyperthyroidism) contribute to osteoporosis. Alcohol, tobacco, and soft drinks containing excess phosphate lower serum calcium level.	Follow PT program as written. Avoid twisting extremities when transferring and positioning person. Therapist should provide inservice to staff for program. Notify RN and/or physician of any complaint of pain on movement, snapping sound on movement or swelling not previously noted. Move person gently and carefully at all times. Avoid twisting movements. Encourage person to eat all of the prescribed diet. Diet may be supplemented with vitamins C and D. If person receives supplements of calcium encourage adequate fluid intake to prevent formation of kidney stones. Administer medications as ordered.	Any pain noted on movement or swelling. Exercise, range of motion (ROM), and positioning program carried out. Diet intake. Fluid intake, especially when receiving calcium supplement.

Abnormalities of Musculoskeletal System (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- Unable to move joint - Pain if attempt is made to straighten out contracture - Loss of function - Impaired mobility - Pain from muscle spasms	**Contracture** - an abnormal condition of a joint which is fixed in a flexed position and is usually permanent. Joint is deformed with loss of function.	Frequent position change following therapeutic positioning program developed by PT and/or OT. Range of motion (ROM) after inservice by therapist. Carry out exercise program as developed by PT and/or OT. Give muscle relaxants if ordered. Care when handling contracted joint to prevent pain and fractures. Protect from injury - avoid twisting and quick movements.	Document when positioning, ROM and exercises are carried out and any complaint or pain. Document medication when administered and effectiveness.
- Excessive curvature - Rounded shoulders - May have pain and tire easily	**Curvature of the Spinal Column: Kyphosis** - a curvature of the thoracic vertebrae.  	Follow program in plan which may include a Milwaukee brace, back corset, and exercise program. Encourage person to stand and sit as erect as possible. Staff should receive inservice for carrying out exercise program and for use of braces or back corsets. Assess skin under brace and back corset for pressure areas. Notify RN or physician if pressure areas noted.	Document when program was carried out and when brace or back corset was in use. Any complaint of pain. Any pressure areas noted.

Abnormalities of the Musculoskeletal System (cont.)

Signs and Symptoms	Definition of Condition	Staff Action	Staff Documentation
- Ribs may protrude on one side if severe - Pelvic bone may actually move up under rib cage on one side when scoliosis is severe. This will affect respirations, digestive system and other body systems. - Discomfort in various locations	**Scoliosis** - a lateral curvature of the vertebral column. Condition can be treated with body braces, surgery, exercises, and use of gravity in therapeutic positioning program.	Follow therapeutic positioning program and exercise programs after inservice from PT and/or OT. This includes proper positioning in wheelchair with correct use of supports. Use body brace as ordered. Watch carefully for pressure areas and skin breakdown from brace.	Document positioning and exercise program carried out. Document use of brace. Document any pressure areas noted on skin. Document any noted respiratory problems or discomfort.
- Enlarged joints with swelling, stiffness and deformity - Limited movements of joints - Pain usually relieved by rest - A limp - Aching which may change with the weather - "Grating" of the joint during motion	**Osteoarthritis** - A degenerative condition primarily in the major weight-bearing joints (spine, hip and knee).	Follow program for rest and modified weight-bearing. Encourage person to use cane, crutches, walker, back brace or support when ordered.	Location and degree of pain. Degree of limited movements and swelling. Use of braces and supports when ordered. Rest periods. Actual use of cane, crutches and walker.
- Pain - Discoloration and swelling - Altered mobility	**Injury: Strains and sprains** - injury which causes loss of function. Severity of injury varies widely.	Notify RN and/or physician of injury and symptoms as soon as noted. Follow orders as prescribed (i.e, elevation, immobility device, pain medication, weight-bearing, ice application.) Assess for pain, swelling and discoloration.	Document time of injury, who was informed, and time informed. Document instructions you were given and by whom. Document care provided and effectiveness.

Abnormalities of the Musculoskeletal System (cont.)

Signs and Symptoms	Description of Condition	Staff Action	Staff Documentation
- There may be local deformity - Swelling - Limitation of use or movement of part - Pain or tenderness - Tingling, numbness, weakness, or loss of movement - Color changes	**Fracture** - A break in a bone which may or may not require surgery to repair. Traction or immobilization may be part of prescribed treatment.	After a fall or injury, be alert for appearance of any signs or symptoms. When symptoms are noted, notify the RN and/or physician. Give pain medications as ordered. Monitor skin carefully for redness and open areas. Monitor for swelling around casts and wraps. Keep cast clean and dry. Use splints and slings when ordered. Handle area of injury carefully. If immobile, reposition at least every two hours unless otherwise ordered. Encourage person to eat all of diet prescribed by physician and to drink adequate fluids. Follow PT and OT programs after receiving inservice (range of motion exercise, transfer techniques and positioning).	Document when you notified the RN or physician of the injury and care provided. Signs and symptoms noted. Time pain medication given and effectiveness. Document when specific orders were carried out.

Musculoskeletal Medications

Classification	Action	Side Effects	Implications For Care
Muscle Relaxants: - Dantrium - Flexeril - Lioresal - Paraflex - Robaxin - Soma	Decrease frequency, severity and pain of muscle spasms.	- Dizziness - Weakness - Fatigue - Drowsiness - Urinary frequency - Nausea - Lower blood pressure - Visual disturbances - Higher heart rate - Rash	Give with meals; no alcohol; do not discontinue medication quickly; do not mix medication with: cough preparations, antihistamines, or drugs that affect the central nervous system. Give with caution to persons with seizure disorders.
Calcium Supplements: - Calcium Carbonate - Caltrate	Increases calcium intake.	- Constipation - Anorexia - Intestinal obstruction - Nausea - Vomiting - Diarrhea - Kidney stones	Increase fluids, exercise, and fiber. Give on an empty stomach.

Musculoskeletal Medications (cont.)

Classification	Action	Side Effects	Implications for Care
Anti-Inflammatory Analgesics: - Clinoril - Indocin - Ibuprofen	Decreases swelling, pain and stiffness in joints.	- Nausea - Anorexia - Vomiting - Diarrhea - Constipation - Dizziness - Fatigue - Higher heart rate - Swelling - Rash - Ringing in ears - Blurred vision - Jaundice - Tremors	Give with food. Avoid alcohol and aspirin products.

Urinary System

The urinary system consists of two kidneys, two ureters, one bladder, and a urethra. The functions of the urinary system are:

1. To rid the body of waste products.
2. To help regulate water in the body by eliminating excess water through the urine.
3. To help maintain proper chemical balance.

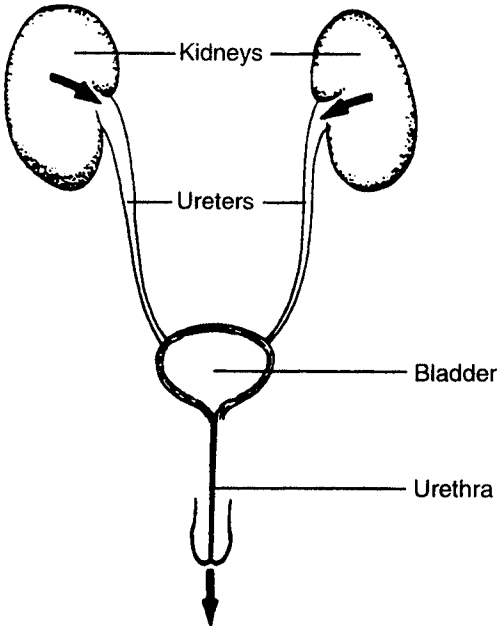
These functions are performed by the kidneys, which serve as pressure filters. Blood is filtered by the kidneys and then returned to the circulatory system. Liquid waste obtained from this filtration is called urine.

The kidneys are located at the back of the abdominal cavity, high up under the diaphragm. One kidney is located on the left side and one on the right side.

The two ureters are about 10 to 13 inches long. Each leads from one kidney to the bladder, which is a storage bag for urine. The bladder walls stretch and are able to hold about one pint of urine. When the bladder is full, the nerve endings in the bladder walls signal the nervous system and create the urge to urinate. The urine then leaves the bladder and the body through the urethra.

The urethra is about 1 1/2 inches long in the female and about 8 inches long in the male. In the female, the urethra opens to the outside between the labia in the genital area above the vaginal opening. The urethra is shared with the reproductive system in the male and opens to the outside at the end of the penis.

During a 24-hour period, 1500 - 2000 cc of urine is produced. Tests on the urine can determine how well the kidneys are functioning.



Abnormal Urinary Tract

Urinary tract infections, or UTIs, can occur in any part of the urinary tract. An infection may occur in the urethra, the bladder, or the kidneys.

Urinary tract infections are more common in females. This may be due to the shorter length of the urethra and its exposure to bacteria from the vagina and rectum. In men over 50, recurrent UTIs may be due to an enlarged prostate gland that blocks the flow of urine from the bladder.

Signs and Symptoms	Condition	Staff Action	Documentation
Urinary Frequency Urinating in small amounts Burning on urination Low abdominal discomfort Low back pain Fever/chills Cloudy urine Foul-smelling urine Blood in urine Tiredness	Urinary Tract Infection (UTI)	Contact nurse or physician. Follow physician's orders. Obtain urine specimen as directed. Encourage fluids. Encourage fruit juice, especially cranberry juice. Discourage alcohol consumption, caffeine and carbonated beverages. Check temperature as directed. Encourage frequent urination (at least every 3-4 hours). Teach females to wipe front to back. Warm baths for comfort. Take medication as directed.	Signs and symptoms. Who was contacted. Instructions given. Specimen obtained. Fluids accepted. Medication given. Changes in signs or symptoms. Temperature.

Abnormal Urinary Tract (cont.)

Urinary incontinence, or involuntary urination, can have many causes and may be mild or severe. Some causes are: constipation, immobilization, stones in the urinary tract, strong diuretics (water pills), acute infections, illnesses that damage the nervous system, or injuries to the spinal cord or sphincter muscles.

Medications are sometimes used to help the bladder muscles function better. Exercises are helpful in some cases to strengthen the muscles. A 5-10 percent weight loss can significantly reduce the abdominal pressure that contributes to bladder control problems. Eating a diet high in carbohydrates and fiber and drinking plenty of fluids helps eliminate the constipation that also can contribute to incontinence. Bladder retraining techniques are sometimes used. Surgical techniques are available for correcting some of the causes of incontinence.

Signs and Symptoms	Definitions	Staff Action	Documentation
Partial to complete loss of bladder control	**Incontinence or Involuntary Urination**	Avoid caffeine. Encourage high fiber diet. Encourage fluids - at least 6 to 8 cups per day. Limit fluids after 8 p.m. Avoid alcohol. Toilet on a schedule (watch for a pattern and formulate a schedule accordingly). Keep weight at lower end of ideal weight range. Wash genital area after each incidence of incontinence.	Weight. Fluid intake. Frequency of BMs. Toileting record, including time of day: 1) Appropriate use of toilet. 2) Incontinence.

Urinary Medications

Medications given for the urinary system fall into three categories: urinary analgesics, anti-infectives, and diuretics. Urinary anti-infectives are especially suited for urinary infections because they remain inactive in the body until they pass through the kidneys and collect in the urine. Since drug sensitivity can be a problem with anti-infective medications, the health care worker should watch closely for signs and symptoms of allergic reaction.

Administration of diuretics must be timed carefully to avoid keeping the individual up all night. Assure close bathroom facilities for 3 to 4 hours after taking diuretic.

Medications for the Urinary System

Classification	Action	Side Effects	Implications for Care
Urinary Analgesic: Example: - Pyridium	Relieves pain as well as frequency and urgency of urination.	Colors urine reddish-orange	Alert the individual to expected change in color of urine. Document color, frequency and presence/absence of pain upon urination.
Anti-Infective Examples: - Gantanol - Macrodantin - Furodantin - Mandelamine - Bactrim	Kills or stops growth of bacteria in the urinary tract.	Anorexia Nausea Rash Diarrhea Colors urine yellow-brown	Give with food or milk to avoid gastric irritation. Monitor TPR. Works in acid urine. Avoid milk and dairy products, which neutralize urine. Eat foods which will yield acid urine (cranberries, plums, prunes and a protein-rich diet).
Diuretic Examples: - Aldactazide - Diuril - Lasix	Increases urine output. Lowers blood pressure. Decreases body edema.	Rash Gastric irritation Leg cramps, muscle twitching Hypotension (low blood pressure) Dizziness Dehydration	Monitor blood pressure, weight, and fluid intake and output. Provide toilet facilities within easy access.

Normal Endocrine System

The endocrine system regulates the function of the entire body. It consists of eight glands which produce hormones. Hormones are powerful chemicals that affect growth and development, physical appearance, body functions, and emotions.

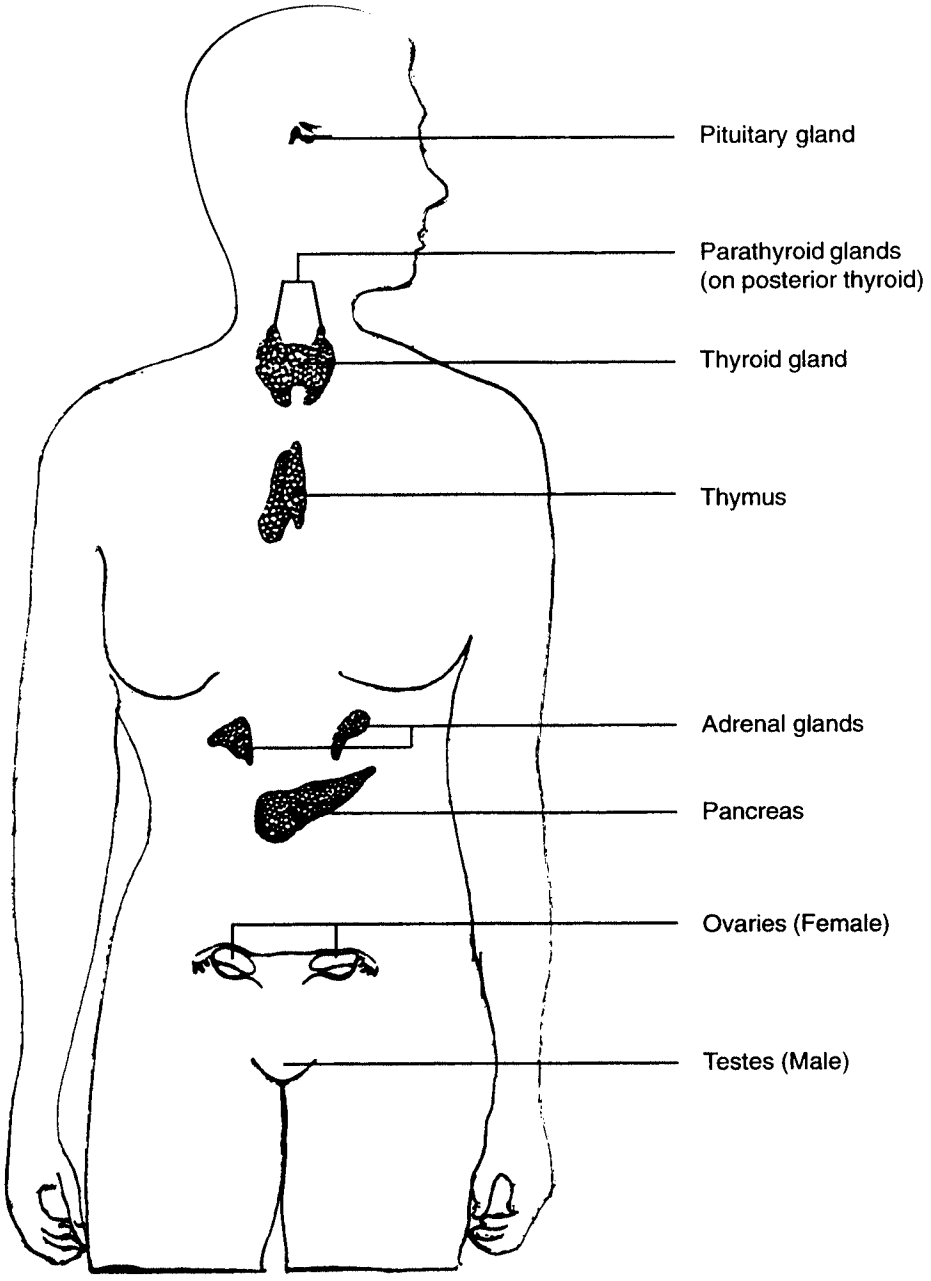
If a person's endocrine system is not working the way it should, it may affect his/her physical and emotional well-being.

The endocrine glands are one of two groups of glands in the body. The prefix "endo" means "within". The glands of the endocrine system release their hormones into, or "within", the bloodstream.

The endocrine system is made up of the following eight glands: (see diagram)

1. Pituitary
2. Thyroid
3. Parathyroid
4. Adrenal
5. Thymus
6. Pineal
7. Pancreas - Beta Cells
8. Gonads (ovaries or testes)

The Endocrine System



Glands of the Endocrine System

Name	What Body Parts Are Affected	Function
1. Pituitary Gland ("Master Gland")	Some organs Other endocrine glands	Affects growth, blood pressure, smooth muscle, ovaries, testes, and other body functions.
2. Thyroid Gland	All tissues Bone Renal tubules	Regulates speed at which the body burns food. Regulates calcium in the blood.
3. Parathyroid	Gastrointestinal tract Bone Renal tubules	Regulates amount of calcium and phosphorus in the blood.
4. Adrenal	Tissues Renal tubules	Burns carbohydrates, fats, and proteins. Anti-inflammatory. Balances sodium, potassium, and water.
5. Thymus	Possible immune system	Unknown
6. Pineal	Unknown	Unknown
7. Pancreas - Beta Cells	Liver Cells Muscle Tissue	Regulates burning of carbohydrates, and influences burning of fat and protein.
8. Gonads (ovaries and testes)	Reproductive organs	Develops male or female sex characteristics.

Abnormal Endocrine System

Diabetes is a disease in which the body is unable to convert certain foods into the energy needed for normal activity.

The incidence of diabetes is higher in people with a family history of the disease. Persons are also at risk for diabetes who are overweight and over 40. The cause of diabetes is unknown.

Normally, carbohydrates in our food are processed into a form of sugar called glucose, which circulates in our blood. Glucose is what our body uses for energy or stores for future use.

In order for the body to use glucose, it needs insulin. Insulin is produced in the pancreas by Beta Cells. In people who are diabetic, either the pancreas doesn't produce enough insulin or the available insulin is unable to be used. Therefore, glucose accumulates in the bloodstream, and instead of being used by the cells to produce energy, it spills out into the urine.

There are two forms of diabetes:

Type I: Insulin dependent: previously called juvenile diabetes. There is a total or very substantial lack of insulin. Type I diabetes usually begins before the age of 40, but often begins in infancy through young adulthood. Insulin injections are almost always necessary for survival. Insulin must be taken by injection, as the digestive juices in the stomach would destroy it if taken by mouth. The most common symptoms of insulin-dependent diabetes are: frequent urination, increased thirst, increased hunger, rapid weight loss, irritability, weakness and fatigue, nausea and vomiting. These symptoms may appear rather suddenly.

Type II: Non-insulin dependent: previously called adult-onset diabetes, usually occurs in later years. Some insulin is usually present, but is either in insufficient quantities or cannot be used properly by the body. This form of diabetes is much more common and accounts for

85% to 90% of all cases. If the non-insulin dependent diabetic cannot be controlled by diet, exercise, and weight loss, medications taken by mouth are used. These medications are not insulin and can be used effectively only by those persons who are able to produce some of their own insulin. Most Type II diabetics do not need to take insulin injections. Symptoms of non-insulin dependent diabetes are more vague and may include: changes in or blurred vision; excessive weight; numbness or tingling in the hands or feet; skin infections; slow healing of cuts and scratches; itching of the genitals and skin. These symptoms may come on gradually and be recurring.

People with diabetes must take good care of themselves. They should bathe daily and check their skin for any open areas. They should use lotions to keep their skin soft and smooth, and use sunscreen to avoid sunburn. They must eat a certain number of calories, usually divided into three meals and two or three snacks, and they must eat at regular times of the day. Diabetics should be seen by the dentist every six months and by an ophthalmologist at least annually. They must exercise regularly and test their blood sugars at specified times of the day. Medications must be taken as prescribed.

When medication is taken for diabetes, it starts to act within the body according to its own time schedule and continues at its own speed, regardless of how much insulin might actually be needed. Therefore, if the diabetic exercises excessively, he/she will burn up more sugar because of the exercise, and will be left with too little sugar and too much insulin. This imbalance between sugar and insulin can trigger an insulin reaction which results in hypoglycemia (low blood sugar.) This can come on quickly and must be treated immediately. This imbalance can also occur if the diabetic does not eat all of his prescribed diet, delays a meal, or takes too much insulin. Illness, infection, periods of growth, excitement, anxiety, fatigue, and stress can all upset a diabetic's sugar/insulin balance.

If a person with diabetes doesn't take his/her medication, or takes too little, eats excessively, is under stress, or is ill, he/she may risk causing hyperglycemia or diabetic coma. This occurs

when there is too much sugar in the blood over a period of time and not enough insulin. Because the body cannot use the sugar due to insufficient insulin, it burns fat for energy. When fats are broken down, acids called ketones are formed. When the level of ketones increases in the blood, some of them spill over into the urine. If the body continues without insulin, these acids build up in the blood and the person develops diabetic Keto-acidosis, or diabetic coma.

If a person's breath smells sweet or fruity, or if the person's skin is hot and dry, think of diabetic coma. If the skin is pale, cold, damp, and perspiring, think of insulin reaction. If in doubt, treat a conscious diabetic with sugar. This won't be harmful.

There are also long-term complications of diabetes. The nerves, the small blood vessels, the kidneys, and eyes can be affected. Keeping blood sugars as close to normal as possible may be the best way to minimize complications.

Disorders of the Thyroid

There are two common disorders of the thyroid. **Hyperthyroidism** is a condition which results from an over-production of the thyroid hormone. The most common form of hyperthyroidism is **Graves Disease**. Most people affected are between 30 and 40 years of age, and have a family history of thyroid abnormalities. These people can lead normal lives with treatment.

Hypothyroidism is due to an under-production of the thyroid hormone. It occurs most commonly in women between the ages of 40 and 50. It is treated effectively with additional thyroid hormone.

Abnormal Endocrine System

Diabetic Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- comes on slowly - increased thirst - increased urination - elevated blood sugar - ketones in urine - weakness, abdominal pains, generalized aches - heavy, labored breathing - loss of appetite, nausea and vomiting - dry, hot skin - lethargic and drowsy - fruity smelling breath	**Hyperglycemia** (also called Keto-acidosis and diabetic coma)	Check blood sugar. Check urine for ketones. Contact RN or physician. Give medications as ordered. Encourage fluid intake.	Signs and symptoms observed. Blood sugars. Urine ketones. Nurse's or doctor's instructions. Medications given. Person's response to treatment.

Abnormal Endocrine System

Diabetic Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- comes on quickly - low blood sugars - excessive sweating, faintness - headache - pounding of heart - trembling - impaired vision - hunger - irritability - personality change and/or confusion - strange behavior - crying - numbness of lips or tongue - pale - dizziness - shallow breathing - fast, weak pulse - nausea - weakness - slurred speech - convulsions and/or unable to awaken	**Hypoglycemia** (insulin reaction or insulin shock).	If individual is conscious: Give quick-acting sugar, such as juice or non-diet pop. Check blood sugar. Recheck blood sugar in 15 minutes. Follow medical care plan, contact health provider. If individual is unconscious Either give instant glucose as directed or glucagon by injection, as trained. Check blood sugar. Notify nurse or physician. Follow specific instructions given. Recheck blood sugar in 15 minutes. Continue to monitor blood sugar.	Cause of reaction if known. Signs and symptoms observed. Food or drink given. How person responded to treatment. Blood sugar.

Abnormal Endocrine System

Diabetic Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
nausea and vomiting temperature elevated verbal complaints	**Illness** in persons with diabetes.	Notify RN or physician. Continue medications as ordered. Test blood sugar more frequently. Encourage fluid intake. Replace carbohydrates if individual is unable to eat regular meals and/or snacks.	Signs and symptoms. Blood sugar. RN or physician instructions. Diet acceptance. Supplements given. Any changes in medications or additional medications given.
tissue injuries, break in the skin	**Abrasion**	Check daily. Wash cuts with soap and water. Cover with sterile bandage.	Size of abrasion. Location. How occurred. Treatment given.
break in the skin with warmth, redness, swelling, pain and drainage	**Infection**	Wash area with soap and water. Cover with sterile bandage. Call RN or physician.	Size. Description. Location. How occurred. Drainage present. Instructions from RN or physician for treatment. Treatments given.

Abnormal Endocrine System

Diabetic Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- change in color - change in temperature (cold) - pain with walking especially in the calf, relief when activity stops - pain lying down (relieved by dangling) - shiny appearance of skin - hair loss on foot or toes - feeling like pins and needles - burning, numbness - shooting pains	**Neuropathy** - Degeneration and inflammation of peripheral nerves with loss of feeling.	Check feet daily. Avoid crossing legs. Test water temperature before bathing individual. No hot water bottles or heating pads to extremities. Keep feet warm and dry. No tight knee-highs, garters, or socks. Do not allow individual to go barefoot. Leather, well-fitted shoes. No sandals, toeless shoes, or thongs. Check insoles of shoes daily. Have individual change shoes two times daily. Always have individual wear cotton socks, with no wrinkles or holes. Discourage individual from smoking.	Any signs or symptoms observed. Who was notified. Instructions given.

Abnormal Endocrine System

Diabetic Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- slow healing of cuts or scratches, blisters, sores, and cracks in the skin - ingrown toenail - callouses or corns - athlete's foot - thick nails and/or fungus infections	**Peripheral artery disease** - blockage, particularly in the small blood vessels below the knee	- Wash area daily with lukewarm water and mild soap. - Dry well, especially between the toes by patting dry. - Check lower extremities daily. - Cut toenails straight across. - Do not treat corns or callouses. - Refer to podiatrist or doctor. - No tape. - Do not walk on injured foot. - Notify nurse or physician. - Use lotions/medications as prescribed by physician.	- Signs and symptoms. - Who was notified. - Instructions given. - Treatment given.

Abnormal Endocrine System - Thyroid Conditions

Signs and Symptoms	Definition	Staff Action	Documentation
- enlarged thyroid - increased body temperature - increased respirations - increased pulse - restlessness - irritability - diarrhea - weakness - tremor - sweating - memory loss - weight loss - staring gaze	**Hyperthyroidism** (too much thyroid hormone).	- Avoid caffeine. - Obtain dietary consultation. - Rest. - Intake and output. - Vital signs every 4-6 hours. - Weigh daily.	- Intake and output. - Vital signs. - Weight. - Medications given.

Abnormal Endocrine System - Thyroid Conditions (cont.)

Signs and Symptoms	Definition	Staff Action	Documentation
- cool, pale, dry, rough, scaly skin - forgetfulness - puffy mask-like face - decreased body temperature - low blood pressure - low pulse - decreased respirations - hoarseness - decreased appetite - constipation - fatigue, weakness - lethargy - inattentiveness - weight gain	**Hypothyroidism** (not enough thyroid hormone).	- Vital signs every 4-6 hours. - Obtain dietary consultation. - Encourage fluid intake. - Provide warm clothing and bedding. - Intake and output of fluids.	- Vital signs. - Intake and output of fluids. - Medications given.

The Endocrine System Medications

Classification	Action	Side Effects	Implications for Care
Diabetic agents (oral) Diabinese Glucotrol Micronase Tolinase	Stimulates insulin release from pancreas.	nausea heartburn vomiting constipation rash hypoglycemia (too low blood sugar)	Report to health professional if any side effects occur. Blood sugar levels checked to see if medication is effective. Proper diet and exercise are important. If diet not eaten, refer to plan for food replacement. Give medication on time and watch for side effects. Special attention to keep feet clean and dry. Do not cut toenails.
Diabetic Agents (subcutaneous injection) 1. **Regular insulin** (fast-acting) 2. **NPH and Lente** insulin (intermediate-acting) 3. **Protamine zinc and ultra-lente** (slow-acting)	Insulin replacement.	**Insulin shock - Hypoglycemia** (too low blood sugar or too much insulin). Watch for skin reaction at injection site (i.e., itching, swelling, redness, stinging and warmth). Hives.	Same as oral diabetic agents. Report signs and symptoms of hyperglycemia and hypoglycemia. Rotate injection sites and watch for any skin breakdown. Check blood sugar as ordered by physician before giving insulin. DOUBLE CHECK DOSE.

The Endocrine System Medications (cont.)

Classification	Action	Side Effects	Implications for Care
Thyroid Hormones Synthroid Proloid	Replaces thyroid hormone in hypothyroidism. Stimulates the metabolism of all body tissue.	hyper-irritability nervousness insomnia tremors headache diarrhea vomiting weight loss	Report to health professional if any side effects occur. Lab test to see if medication is effective.

Integumentary System (Skin)

The integumentary system consists of the skin, nails, hair, and glands. The skin is the largest organ of the body because its surface area is so large. It forms a protective covering for the entire body and helps regulate body temperature. The skin consists of three layers:

1. The epidermis, or outermost layer consists of cells that are constantly being shed and replaced. These cells contain pigments that gives skin its color. This layer forms a barrier against bacteria and moisture. It also holds water in to keep body tissues from drying out.

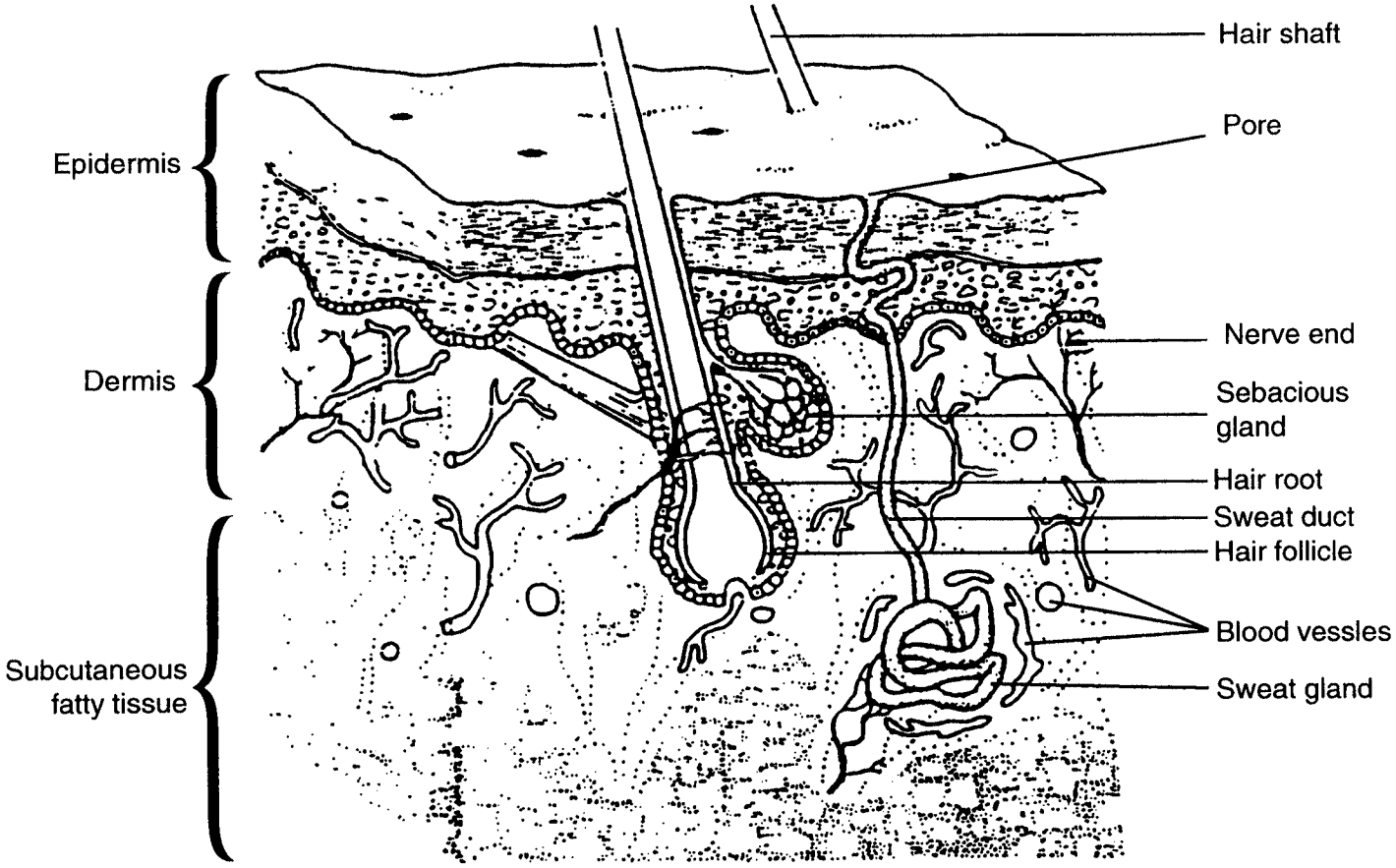
2. The second skin layer is the dermis. It contains hair follicles, sebaceous or oil glands, sweat glands to help regulate body temperature, and sensory receptors or nerve endings that feel pain, pressure, and heat.

3. The third, or subcutaneous layer is a combination of fibrous and fatty tissue that helps to hold in body heat and insulates against cold.

Signs of normal skin are:

- No unusual discolorations.
- Moist and intact.
- No raised or indented areas.
- Body hair evenly distributed in areas normal for age and sex.

THE LAYERS OF THE SKIN



Abnormal Integumentary System

Signs and Symptoms	Description of Condition	Staff Action	Documentation
Skin over a bone is red and shiny	**Pressure sore, early signs**	Observe skin frequently for changes in color, swelling, temperature, or feeling. Change position of person often to relieve pressure. Keep skin clean and dry. Encourage adequate intake of food and fluids. Notify health professional and follow prescribed treatment.	Record location of the irritation or sore. Chart size, color, and any breaks in the skin. If drainage is present, note color, consistency and odor.
Small blisters on the surface of the skin and some loss of the top layer of skin	**Second stage, pressure sore**	Same as above.	Same as above.
The outer layer of skin is gone, leaving a hole. Skin around the hole may be red, white or black in color	**Third stage, pressure sore (decubitis ulcer)**	Same as above.	Same as above.
Flaky, itchy areas.	Dry skin may be due to cold, dry weather, medication, contact dermatitis, or materials in clothes.	Increase fluids. Correct air humidity. Use less soap. Apply skin moistener. Notify nurse or physician of rash. Keep skin dry.	Record affected areas, treatment, and results.

Abnormal Integumentary System (cont.)

Signs and Symptoms	Description of Condition	Staff Action	Documentation
Red patches on skin. May be raised or flat, dry and scaly, and may itch.	**Rash** - May be caused by an allergy, infectious disease such as measles or scabies, or a problem with the circulatory system.	Report to supervisor, nurse, or physician. Wear gloves when touching the rash until the rash is diagnosed.	Where did the rash start? What does it look like? Does it itch? Does it burn or hurt? Are there any other signs of illness? Has the individual been exposed to an allergen? Is the size of the rash changing?
Patches of silver scales. Scales may become dry, itchy, crusted and cracked.	**Psoriasis** is often found on head, chest, elbows, knees, back, and buttocks.	Apply ointments as prescribed to soften scales and relieve itching.	Record appearance and response to treatment.
Discoloration, pain, and swelling.	**Bruise** usually due to an injury.	Observe area for changes in size or color. Notify nurse if pain or swelling is present.	Record size, location, and color. Have any injuries occurred? Is there any pain or swelling?
Red raised tender areas, often on more oily skin surfaces such as face.	**Pimples** are infections of the skin pores. More severe, persistent infections are considered acne.	Wash infected areas well at least twice a day with soap, water and washcloth. Apply ointments only if prescribed.	Record location and appearance.
Redden area Pain Drainage	**Abrasion** - a scraping away of a surface. It may be the result of trauma, as a skinned knee.	Clean area with a mild soap and water.	Record size, location and injury which caused abrasion.

Abnormal Integumentary System (cont.)

Signs and Symptoms	Description of Condition	Staff Action	Documentation
Red, scaly, itchy patches of skin often found in dark moist areas such as between the toes	**Fungal Infection**	Keep area clean and dry. Apply medications as prescribed. Mildly contagious. Practice universal precautions.	Record location, appearance, and response to treatment.
Fine, red, blotchy areas	**Contact Dermatitis** from contact with an allergen. May be due to a change in laundry products or a different fabric.	Try to determine what has been in contact with the affected area recently. Prevent further contact with possible irritant(s).	Record observations and response.

Topical Medications

Skin disorders are readily visible and often make people very self-conscious about how they look. Symptoms of skin disorders can be extremely uncomfortable, causing severe itching and pain.

Topical medications, or drugs for the skin, are prepared in the form of powders, lotions, gels, creams, ointments, pastes, plasters, soaps and shampoos. Side effects of topical medications include: rashes, dryness, redness, tiny purplish-red spots, ruptures of surface blood vessels, and itching in the area.

Never apply skin medications to the mucous membranes, as the medications will be absorbed and the person may be over-medicated.

Oral medications such as sedatives, antihistamines, and analgesics are sometimes ordered to make persons with skin diseases more comfortable.

Topical Medications (cont.)

Classification	Purpose	Side Effects	Implications For Care
Anti-Infectives (Antibacterials and Antifungals) - Bacitracin - Neosporin - Cortisporin - Silvadene - Sulfamylon - Fungizone - Mycostatin - Lotrimin - Desinex - Tinactin	Treat skin infection, burns and fungal infections.	- pain - burning - stinging - allergic reactions - fungal superinfection - redness - irritation	Cleanse area before application. Apply with tongue blade or gloved hand.
Anti-Inflammatory (Corticosteroids) - Valisone - Diprosone - Aristocort - Kenalog - Lidex - Synalar	Reduce itching, irritation, and swelling.	- irritation - burning - itching - blistering - peeling - superinfection	Apply sparingly and gently massage into affected area. Do not apply near eyes. If using spray do not inhale.
Topical Anesthetics - Dermoplast - Solarcaine - Nupercainal	Relieve pain and itching on the skin surface or mucous membranes by numbing the area.	- irritation - redness - eczema - convulsions	Do not apply to face. Avoid contact with eyes.
Antipruritic - Calamine lotion	Relieves itching and helps prevent further infection that could be caused by scratching.	- rash	Apply a thin layer.

Topical Medications (cont.)

Classification	Purpose	Side Effects	Implications For Care
Antiseptics - Merthiolate - Betadine	Destroy or inhibit growth of germs on skin surfaces and prevent the development of infections.	- irritation - redness - swelling	Avoid contact with the eyes.
Astringents and Protectives - Zinc oxide - Coal tar - A & D ointment	Cover, cool, dry, or sooth inflamed skin by forming a long lasting film.	- rash	Apply as directed.
Keratolytics - Salicylic acid - Resorcinol - Sulfur - Urea	Soften and destroy the outer layer of skin so that it is shed (i.e., remove warts and corns; promote shedding of crusts in eczema and psoriasis).	- irritation - burning	Apply as directed.
Parasiticide - Kwell	Kill insect parasites, such as scabies and lice.	- irritation - redness - eczema - convulsions	Caution: Use as directed, may cause seizures. Do not apply to face. Avoid contact with eyes.

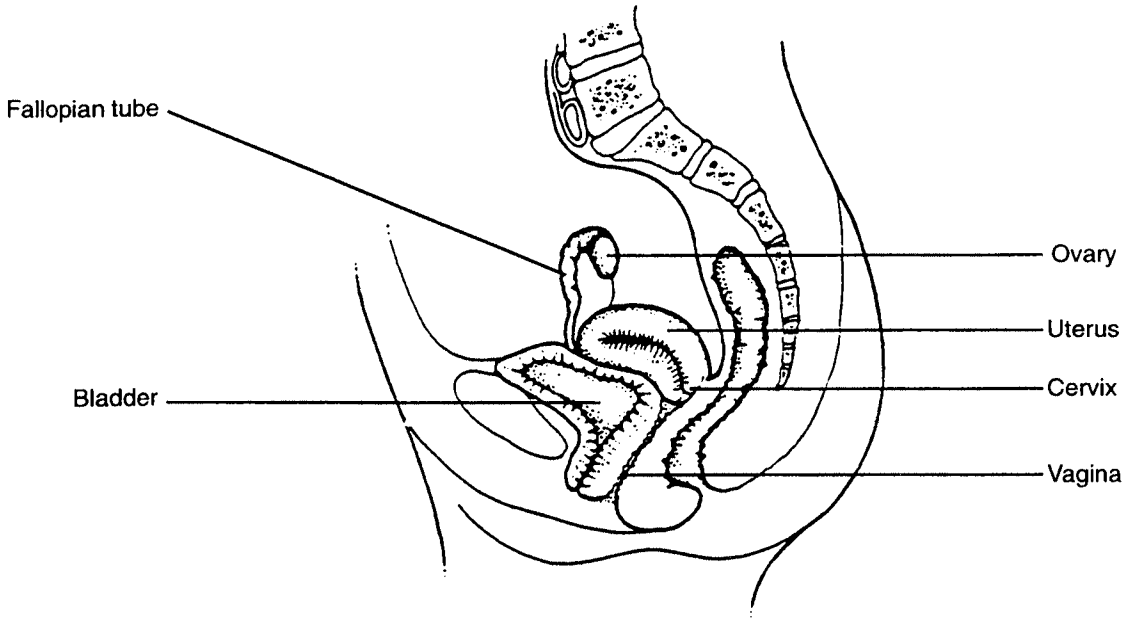
Normal Reproductive System

Female:

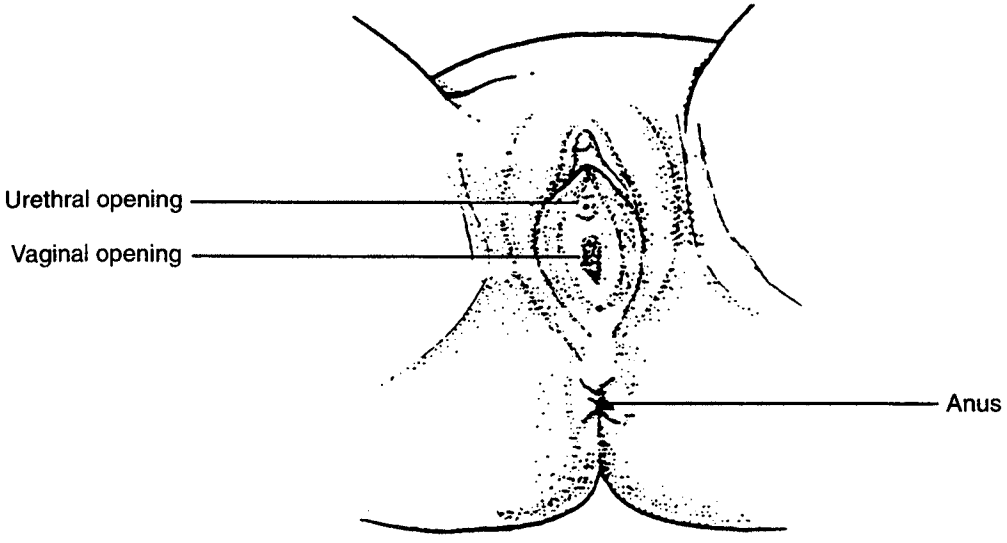
The female reproductive organs include: ovaries, fallopian tubes, uterus, vagina, mammary glands, and external genitalia.

Organ	Function
Ovaries	These are essentially reproductive glands. There is an ovary located on either side of the uterus. The ovaries release eggs and secrete hormones.
Uterus	The uterus (sometimes called the womb) is important in the process of menstruation, pregnancy and labor.
Fallopian tubes	These two slender tubes are about 10 cm in length. The fallopian tubes form a passageway through which the ova (egg) travels from the ovary to the uterus.
Vagina	The vagina is a canal made of muscle and mucous membranes. It extends from the lower tip of the uterus to the external genitalia. It is the passageway for menstrual flow (menses or monthly period) and the fetus (baby) during delivery.
External genitalia	Structures located on the outside of the body.
Mammary glands (in breasts)	These glands produce milk. After the onset of menstruation, or age 12 (whichever occurs first), females should practice monthly breast self-examinations.

The menses (monthly period) involves a regular shedding of uterine lining that occurs approximately every 28 days. This process varies some in individual women. Menopause is the cessation of the female reproductive function. Menopause is complete when a woman has experienced no menstrual periods for one year.



Female Genitals



Female reproductive system

AMERICAN CANCER SOCIETY®

THERE'S NOTHING MIGHTIER THAN THE SWORD

FOR WOMEN ONLY

How to do BSE (a self-exam)

Breast cancer may be cured if you find it early.

The *best* cancer check is a mammogram. When your doctor checks your breasts, ask about this.

Use the shower check.

1. Check your breasts about one week after your period.

2. Press firmly with the pads of your fingers. Move your *left* hand over your *right* breast in a circle, like this:

3. Now check your *left* breast with your *right* hand in the same way.

If there are any lumps, knots, or changes, tell your doctor right away.

Breast cancer may be cured if you find it early.

FOR MORE INFORMATION CALL THE AMERICAN CANCER SOCIETY TOLL FREE: 1-800-ACS-2345

91-500M-No. 2028

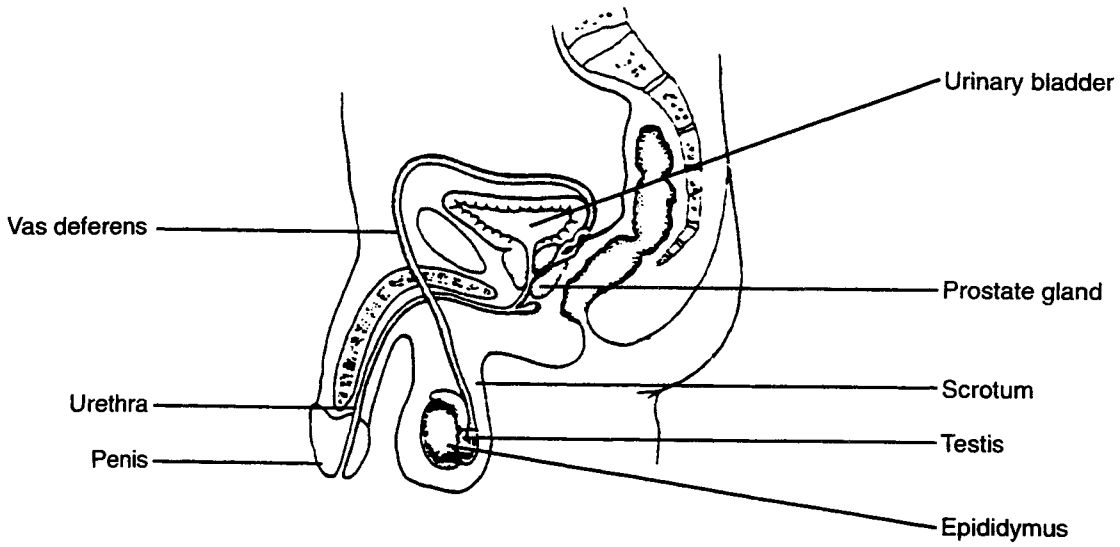
Male Reproductive System

The male reproductive organs include the testes, prostate gland, penis, and urethra.

Organ	Function
Testes	Two oval shaped glands suspended in the scrotum. The testes consist of many lobules and they produce sperm as well as male hormones.
Prostate Gland	The prostate is a walnut-sized gland located just below the bladder. The primary function of the prostate is to secrete a thin, milky fluid that helps neutralize the fluids of the male urethra and the female vagina.
Urethra	The urethra is the passageway through the penis that carries the sperm and semen from the testes to the outside. This is also the same tube that carries urine from the bladder.
Penis	External male organ through which urine or semen pass to get outside the body. During sexual excitement, the spongy tissue of the penis fills up with blood. This makes the penis lengthen and become rigid in preparation for sexual intercourse.

The male reproductive system serves the following primary functions: (1) production of sperm; (2) performance of the sex act; and (3) hormone regulation of male sexual function.

It is important for all men over the age of 40 to have a prostate exam annually. All men between the ages of 15 and 40 should practice monthly a self-testicular exam.



AMERICAN CANCER SOCIETY®

THERE'S NOTHING MIGHTIER THAN THE SWORD

FOR MEN ONLY

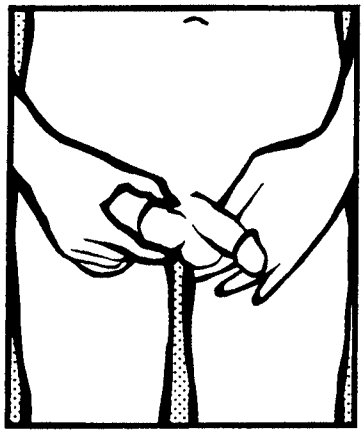
How to do TSE (a self-exam)

Cancer of the testicle can be cured if you find it early.

Use the shower check.

1. Check your testicles once a month.

2. Roll each testicle between your thumb and finger, like this:



Feel for hard lumps or bumps.

3. If you notice a change or have aches or lumps, tell your doctor right away so something can be done about it.

Testicular cancer can be cured.

You should also know that prostate cancer is the most common cancer in men. Men over age 50 should have an annual health check-up that includes a prostate examination.

FOR MORE INFORMATION CALL THE AMERICAN CANCER SOCIETY TOLL FREE: 1-800-ACS-2345

Abnormal Reproductive System

Problems in the male reproductive system frequently include problems in urinating, discharge from the penis, lumps or pain in the scrotum or abdomen, and difficulty having an erection.

Problems in the female reproductive system include pain in the lower abdomen, discharge from the vagina or breasts, lumps in the breasts, unusual bleeding from the vagina, and itching.

<u>Any abnormal symptom should be reported to your supervisor, nurse, or physician.</u>

Abnormal Reproductive System

Signs and Symptoms	Description of Condition	Staff Action	Documentation
Pain or tenderness in abdomen or genitals	**Infection, tumor or hernia**	Check TPR Notify health professional	- Record TPR - Describe the pain. Is it steady or does it come and go?
Discharge from penis/vagina/nipples	**Infection or tumor**	Encourage person to drink plenty of fluids and to keep genital area clean. Teach females to wipe from front to back. Have uncircumcised males pull back foreskin and wash while bathing. Give antibiotics as ordered. Wear gloves while providing care. Notify health professional	Note color, amount, consistency, obvious odor of discharge
Lumps or swelling	**Infection or tumor**	Breast exams, testicular exams Notify health professional.	Note size, location, any tenderness
Itching/sores in genital area	**Infection**	Apply topicals as ordered Wear gloves Notify health professional	Note color, amount, consistency, obvious odor of any drainage

Abnormal Reproductive System (cont.)

Signs and Symptoms	Description of Condition	Staff Action	Documentation
Water retention, irritability, mood swings, abdominal cramping	**Pre-menstrual syndrome (PMS)**	Give PRN medication, if ordered.	Note effectiveness of medication.
Change in menstruation cycle	**Stress, illness, infection, pregnancy, menopause**	Report changes in menstrual cycle to supervisor or nurse. Encourage person to: - Change sanitary napkins at least 3-4 times each day, and more often if needed. - Bathe at least every day, or more often as needed.	- Keep a record of days when menstruation occurs. - Record changes in menstrual flow, missed periods, changes from usual pattern. - Record number of sanitary napkins used each day.
- Pain and burning when urinating - Frequent urination - Cloudy, dark, or bloody urine - Low back pain - Fever	**Urinary tract infection**	- Encourage person to drink plenty of fluids - Medications given as ordered - Contact nurse or physician - Take vital signs - Encourage person to keep genital area clean	- Note each time person urinates or feels like he/she has to urinate. - Vital signs - Record color, unusual odor, any pain or burning with urination.
- Difficulty urinating - Dribbling of urine - Urinary incontinence - Urinary retention	**Enlarged prostate**	Same as above	Same as above

Reproductive System Medications

Classification (Hormonal Agents)	Action	Side Effects	Implications for Care
Testosterone	- Hormone that increases male characteristics. - Treatment of female breast cancer.	Edema, nausea, vomiting, constipation, diarrhea, and change in appetite.	- Monitor weight routinely. - Monitor bowel habits.
Estrogen	- Used in oral contraceptives. - Treatment of post-menopausal breast cancer, prostrate cancer, and ovarian disease. - Relieves discomfort of menopause. - Treatment of osteoporosis.	- Blood clots, edema and weight gain. Increased calcium. - May restore menstruation after menopause.	- Watch for and report any signs or symptoms of blood clots. - Weigh regularly. - Report any unusual vaginal bleeding.
Progesterone	- Contraception and treatment of some menstrual problems. - Suppresses ovulation.	Dizziness, migraine headaches, depression, hypertension, blood clots, nausea and vomiting. Possible weight gain.	- Weigh regularly. - Check blood pressure. - Watch for and report any signs or symptoms of irritation or sensitivity.

Reproductive System Medications (cont.)

Classification	Action	Side Effects	Implications for Care
Anti-fungal Agents Example: - Monistat cream or suppositories	Controls of destroys vaginal fungus.	Vaginal burning or irritation.	Watch for and report any signs or symptoms of irritation or sensitivity.
PMS medications Examples: - Anaprox - Tylenol - Motrin - Aspirin	Helps control some PMS symptoms.	Drowsiness, dizziness, vision disturbances, nausea, rash.	Watch for and report any signs or symptoms of side effects. Give with food.

CURRICULUM FOR "IMPLEMENTATION OF EATING AND FEEDING TECHNIQUES TO MEET INDIVIDUAL'S CLINICAL NEEDS"

DAY 1 - EXPECTED OUTCOMES:

As a result of completing this section you will:

- **Know and understand the swallowing process;**
- **Know techniques to promote normal swallowing;**
- **Recognize proper body alignment**
- **Be able to use adaptive equipment properly**
- **Become familiar with special techniques to enhance eating\feeding**

DESCRIPTION

It is important that caregivers working with individuals who are mentally ill and/or developmentally disabled are knowledgeable in proper eating and feeding techniques. Caregivers providing direct care and services to individuals must recognize problems and situations which complicate swallowing, and the importance of preventing choking and aspiration. The individuals we serve, both persons with mental illness and with developmental disabilities, are often at risk for choking and aspiration. Because of the aging process, individuals who are older experience additional risk for choking and aspiration.

ASSESSMENT

This section will be assessed based on the successful completion of two factors:

- A minimum score of 70% on a written test.
- Satisfactory completion of the return demonstrations outlined in this section in alignment and basic eating/feeding skills. Demonstrations will include, but will not be limited to: positioning of the individual who is eating and the caregiver, timing and method of presenting food, and providing a variety of food.

GLOSSARY

Abduct:	movement of a limb away from the body
Adaptive:	changed for a special use or situation
Agile:	ability to move in a quick and easy fashion
Align:	position in a straight line
Aspiration:	sucking fluids or foreign bodies into the airways
Aspiration pneumonia:	the disease process within the lung that has resulted as a complication of aspiration.
Bolus:	a soft mass of chewed food

Bruxism:	grinding of the teeth
Choking:	acute blockage of airway
Cognitive:	mental process - knowing, thinking, learning, judging
Disease:	an abnormal condition of an organ or body part that impairs normal physiological functioning.
Dysphagia:	difficulty in swallowing
Enteral nutrition:	the introduction of fluid or pureed food by a feeding tube directly into the stomach or small intestine
Epiglottis:	lid-like structure that prevents food from entering the larynx (voice box) or the trachea (air pipe) while swallowing
Esophagus:	the tube or pipe which carries food from the throat to the stomach
Esophageal stricture:	a narrowing of the esophagus
Esophageal ulcer:	a lesion in the esophagus with the loss of the mucous membrane lining
Excoriation:	injury to skin caused by scratch or abrasion
Extend:	stretched or pulled out

Flexion:	bent - bending a joint
Functional:	the activity or duty for which something is particularly fitted
Gastroesophageal reflux:	a backflow of contents of the stomach into the esophagus
Hypertonic:	high tone, tight, stiff, rigid
Hypotonic:	low tone, floppy
Jejunum:	one of three portions of the small intestines
Lateralize:	moving from side to side
Neutral position:	not favoring either side
Pharynx:	throat
Prone position:	face downward
Protrusion:	push outward
Purse:	pucker
Retraction:	pull in, draw back

Saliva:	clear fluid secreted in the mouth which aids in chewing, swallowing and digestion
Soft palate:	back portion of the roof of the mouth
Sphincter:	a ring-like muscle which closes an opening and relaxes to open
Supine position:	lying on back, face up
Symmetrical:	perfect balance (same of both sides)
Velopharyngeal:	soft palate and pharynx (throat)

I. ALIGNMENT

Learning Objectives:

As a result of reading this material and practicing these skills, you will be able to:

- **Describe the proper positioning for eating and drinking**

- **Position individuals in as near an ideal position as possible to eat and drink**

PROPER ALIGNMENT

Before individuals eat or drink, they should be in proper alignment (position) for swallowing to be as effective and safe as possible. **As a caregiver, it is your responsibility to be sure individuals are in proper alignment to eat and drink.** This is the most important measure you can take to prevent choking and aspiration.

Proper alignment for eating and drinking includes:

A. Head and neck in neutral position
B. Head in midline
C. Stabilize shoulders
D. Symmetrical upper and lower trunk
E. Neutral and stable pelvis
F. 90 degrees flexion for hips, knees, ankles, with hips slightly abducted
G. Supported and aligned feet

The individual should be seated in an upright position of not less than a 45 degree angle. Under no circumstances should anyone eat or receive a tube feeding while lying flat on his/her back. The individual should be seated all the way back in the chair with hips stabilized with a seatbelt when needed. He/she should avoid sitting on the lower back or coccyx. Feet should be supported. The shoulders and head should be positioned as near to midline and as level as possible. The head should be bent forward slightly while eating. DO NOT attempt to assist anyone to eat while his/her head is tilted backward, as this presents an increased risk of aspiration.

II. SWALLOWING

Learning Objectives:

As a result of reading this material and classroom demonstrations, you will be able to:

- **Describe the three stages of a normal swallow**
- **Identify characteristics of oral structures (lips, teeth, tongue, jaw) which may contribute to swallowing problems**
- **Describe characteristics of the following positions which will promote or facilitate a normal swallow: seated, prone, and sidelying**

The following information outlines the steps of a normal swallow, describing how therapists assess the oral structures involved in swallowing, and how to promote a normal swallow. There is also a drawing of structures and areas involved in the swallowing process.

A. **Three stages of the normal swallow**

1. **Oral Stage** (a voluntary preparatory stage to actual swallow)

   a. Food is chewed
   b. Food is formed into a bolus with addition of salivary secretions
   c. Bolus of food is moved to back of tongue

2. **Velopharyngeal Stage** (an involuntary stage)

   a. Vocal chords closed
   b. Epiglottis covers top of larynx
   c. Bolus is thrust into pharynx toward esophagus
   d. Breathing temporarily stops as bolus enters pharynx

3. **Pharyngeal Phase**

   a. Bolus moves from pharynx to esophagus
   b. Sphincter action moves food down esophagus to stomach

B. Assessment of oral structures involved in swallowing (these will be demonstrated by the instructor).

1. Look at typical body positioning at mealtime

    a. Is normal pathway distorted?
    b. Can eating and breathing be achieved in a coordinate manner?
    c. Will a change of position facilitate movement of food from mouth to stomach?

2. Lips

    a. What is typical posture?
    b. How much flexibility, agility?
    c. Tone - hyper, hypo
    d. Closure
    e. Ability to purse and actually move food into the mouth

3. Teeth

    a. Alignment
    b. Sensitivity: Bruxism (grinding of teeth); hyperplasia (abnormal increase in tissue cells of gums)

4. Tongue

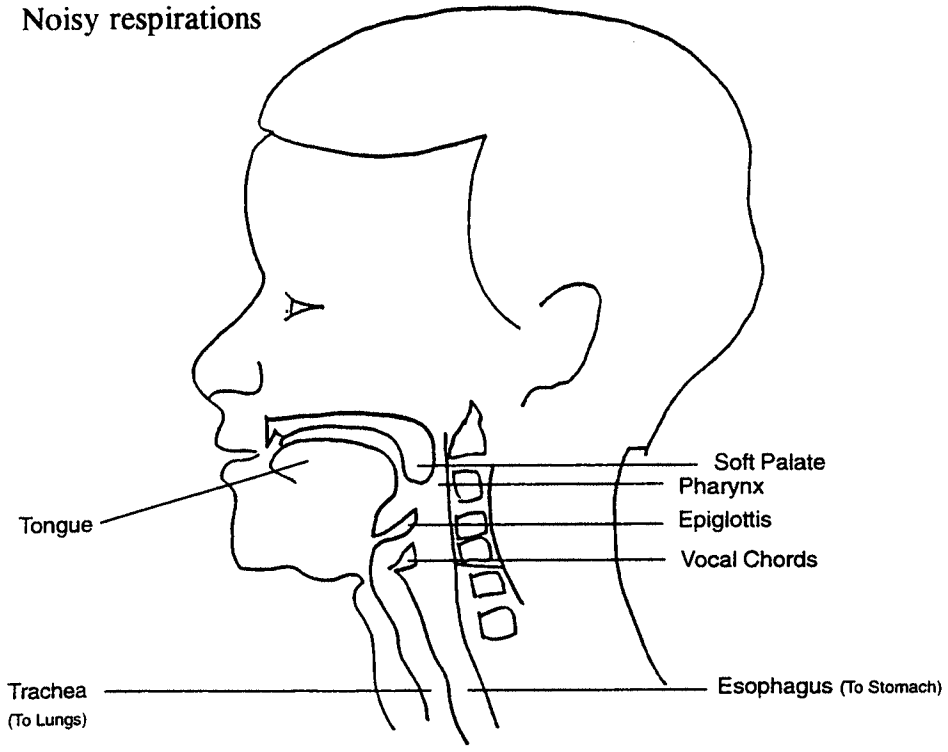
    a. Ability to elevate
    b. Ability to lateralize (move tongue to side)
    c. Protrusion/retraction (ability to stick tongue out; retract tongue)

5. Jaw

    a. Bite reflex
    b. Ability to close voluntarily
    c. Rotary movement for chewing

6. Swallow

    a. Controls own saliva
    b. Coughing
    c. Gagging
    d. Audible swallow
    e. Noisy respirations



Structures Involved in Swallowing

C. Promoting normal swallow

1. Proper positioning affects vital areas in individual's life.
   a. Eating
   b. Cognitive skills
   c. Breathing
   d. Digestion
   e. General health

2. Options - The following positions can be used when eating.
   a. Seated
      - Weight bearing on lower pelvis
      - Trunk upright
      - Head flexed forward
      - Feet adequately supported

   b. Prone - Supported
      - Hips extended and the spine straight
      - Knees and ankles positioned to provide support
      - Elbows bent and forearms resting on supporting surface
      - Head control to maintain position
      - Head should not be resting on shoulders or back
      - Head slightly flexed and jaw not thrust forward

c. Sidelying - This position may be used for eating or tube feedings.
   - Head at midline with slight forward flexion and jaw retracted
   - Both shoulders aligned comfortably so that hands can come together in the middle
   - Thigh supported; knee and ankle bent
   - Support provided so position can be maintained while weight-bearing remains on hips, side, and lower shoulder

d. **Supine position should be avoided for eating/feeding. If used, the supine position must be assessed by the appropriate therapist and directly ordered by the physician**.

3. Once the most functional, therapeutic position has been determined, problems specifically related to eating must be identified.

4. Mealtime should be a pleasant social experience.

5. Presentation of food:
   a. Head midline and sightly flexed
   b. Food presented with pressure on lower lip
   c. Proper consistency of food and beverage should be evaluated to determine what individual is best able to manage -
      -cutup
      - chopped
      - ground
      - pureed (blended)
      - thickened liquids

III. ADAPTIVE EQUIPMENT

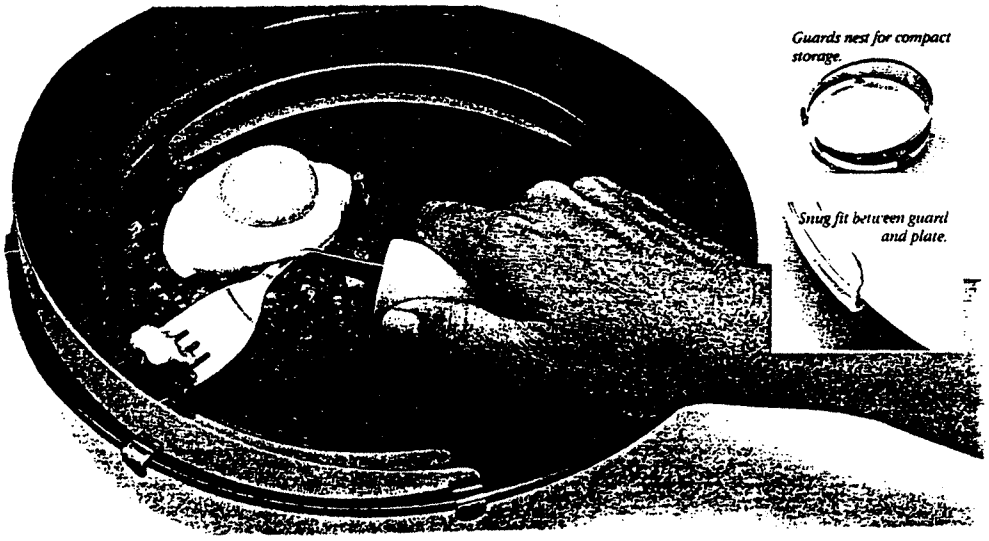
Learning Objectives:

As a result of reading this material, you will be able to:

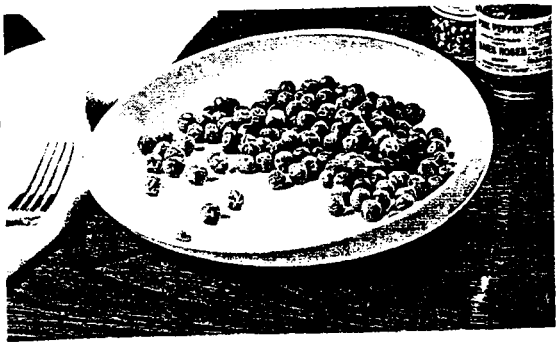
- **Identify various adaptive equipment used for eating and drinking**
- **Demonstrate the proper use of this adaptive equipment**

A. Adaptive equipment is frequently provided to improve an individual's ability to eat with the least amount of assistance necessary. There is a wide variety of adaptive eating equipment available. Appropriate equipment is selected based on the individual's strengths and needs. Some of the most commonly-used pieces of adaptive equipment are described and shown below:

1. Plate guard - made of clear plastic or stainless steel; snaps on to the rim of the plate. Generally used to help an individual get food onto a utensil by pushing food against guard.



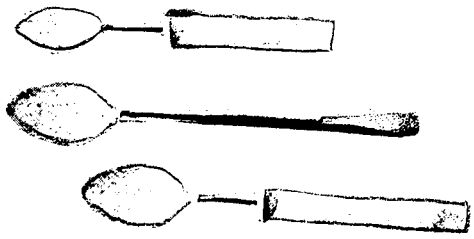
2. Scoop dish and high sided dish - usually made of melamine plastic. Also used to aid individual in scooping food from plate onto a utensil by pushing food against the high side.



3. Dycem mat - made of non-skid plastic in mat form for use under dinnerware or utensils to prevent slippage.

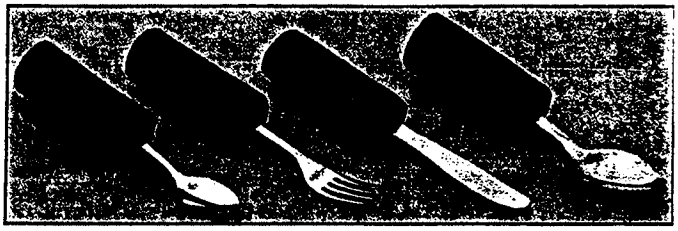
4. Utensils - some of the most commonly-used include:

   a. Rubber or nylon-coated spoon - bowl of spoon is coated. It is used especially by individuals with a bite reflex or increased sensitivity to temperature in the mouth.



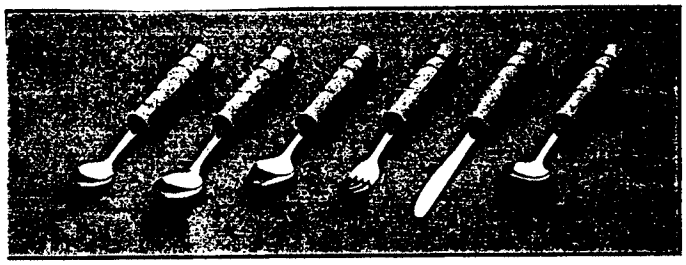
Adaptive Equipment (cont.):

b. Built up handle utensils may have cylinder of soft foam or plastic up to one inch in diameter on the handle. These are used by individuals who have difficulty grasping handles on standard utensils.



Soft Built-Up Handle Utensils

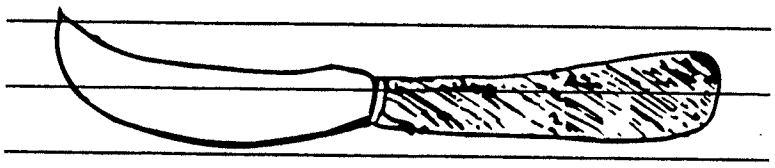
c. Weighted utensils have built up handles with weight added. These are used by individuals with hand tremors to help minimize excessive movements.



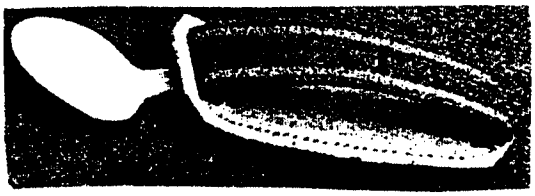
Weighted Utensils

Adaptive Equipment (cont.):

d. Rocker knife has a curved blade to cut food, using a rocking motion. These are used by individuals who need to cut food using only one hand.

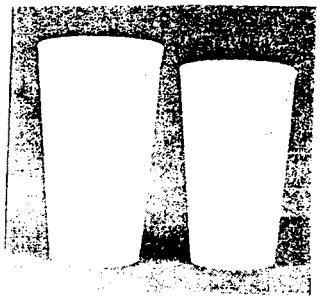


5. Universal cuff is a utensil holder which loops around the individual's hand, usually made with straps and velcro. These hold utensils, toothbrush and other implements in a pocket on the cuff for individuals with little or no hand strength.



Adaptive Equipment (cont.):

6. "Nosey," or cut-out cup, is a plastic tumbler with cut-out for the nose. This provides room for the nose so that an individual can drink without tipping the head back. This also enables caregiver to observe rate of fluid intake, while assisting individual to drink.



7. Spout cup - top on cup has a spout through which fluid is poured into the mouth. This type cup is not recommended for most individuals, as it further reinforces primitive suck patterns. A qualified therapist should evaluate and approve use of a spout cup for an individual.

*****CAUTION - SYRINGES AND ATHLETIC SQUEEZE BOTTLES ARE NOT APPROPRIATE ADAPTIVE EQUIPMENT FOR PERSONS LIVING IN COMMUNITY RESIDENTIAL SETTINGS. THERE ARE NO PROFESSIONALS AND NO EMERGENCY EQUIPMENT ON SITE TO DEAL WITH THE RISKS THAT SYRINGES AND SQUEEZE BOTTLES POSE.**

IV. DIETARY CONSIDERATIONS

Learning Objectives

As a result of reading this material and classroom demonstrations, you will be able to:

- **Understand the importance of a thorough individualized evaluation, and what information is needed for the evaluation**
- **Understand the different consistencies and textures of foods, and how these impact on an individual's eating/feeding program**
- **Understand and be aware of tips a caregiver can use in assisting an individual to eat**

EVALUATION PERFORMED ONLY BY QUALIFIED PROFESSIONAL

Evaluation requires extensive individualization and manipulation of food textures, consistencies, and temperatures. Examples of food that can be used for evaluation of swallowing disorders include:

To evaluate:	Food to use:
Taste sensation	Honey, salt, cocoa, lemon
Tongue control	**Peanut butter, honey
Sucking	Popsicle, pickles
Chewing	Cheerios, crackers, cheese, marshmallows

Remember - the ideal food triggers an individual's receptors for taste, temperature, and texture.

***Peanut butter should only be used in evaluations by trained therapists.*

Other information needed for a food evaluation includes:

1. The specific type and amount of food and liquid consumed.
2. The food lost from utensils or from the mouth.
3. The physical effort required for eating.
4. The time needed to finish a meal or snack.
5. The time of day and the location where the meals are served.

CONSISTENCY/TEXTURES

The consistency of food is very important in an individual's eating program. Thicker foods and liquids provide increased sensory input to the tongue and oral structures. Semi-solid foods of medium consistency are easiest to swallow, as they are moist enough not to crumble, yet dry enough to form a bolus (soft mass of chewed food). Examples of medium-consistency foods are: casseroles, mashed potatoes, pudding, and yogurt. Providing the right texture is important to vary the sensory input to the lips, cheeks, and tongue.

Gradually increased texture will prepare an individual for transition to a higher level diet, and stimulate the jaw and tongue toward more advanced chewing movements. Remember, foods with combination textures are the most difficult to swallow safely and should be initiated last.

FOOD CATEGORIES FOR INDIVIDUALS WITH SWALLOWING PROBLEMS (DYSPHAGIA DIET - not food progressions)

Thin liquids: Broth, coffee, tea, water, popsicle, gelatin, or any food having the same or nearly the same viscosity (fluid-like qualities) as water at room temperature.

Thick liquids: Malts, shakes, nectars, sherbet, ice cream, cream soups, or any food having the same or nearly the same viscosity of nectar at room temperature.

Smooth solids: Pureed foods and foods having the consistency of pudding

Soft solids: Canned fruits and vegetables, ground meats; bread is usually offered at this point

Semisoft solids: Slightly more texture than soft solids. Begin addition of fresh cooked vegetables and fruits, except those requiring a great deal of chewing. Meats are bite-size.

Regular: Includes all food textures including sticky, chewy, crisp, and combination foods.

TIPS FOR EATING/FEEDING THERAPY

1. Allow the individual to concentrate on eating. Avoid inappropriate conversation or detraction during mealtime.

2. Encourage the individual to eat slowly. The smell, taste, feel, and appearance of food help stimulate the swallowing reflex.

3. Generally serve food at room temperature; however, caregivers might try hot and/or cold foods for an individual to see if the swallowing reflex is triggered.

4. Sweet, sour, and salty foods stimulate salivation and trigger the swallowing reflex.

5. For individuals with reduced sensation, small pieces of food should be avoided. These can become lost in the mouth and can increase the chance of choking.

6. If the individual has muscle weakness, avoid sticky foods, (i.e., peanut butter, honey). These can adhere to the roof of the mouth, and can cause the individual's oral muscles to become tired during eating. Because these foods form a solid bolus, it is more difficult to swallow and increases the risk of aspiration. If peanut butter is aspirated, it cannot be removed from the lungs and there is no treatment for the type of pneumonia which would develop.

7. If the individual has excess mucus, avoid sweet foods, milk products, and citrus juice, as they increase or thicken the saliva.

8. To compensate for decreased saliva production, moisten foods with small amounts of liquid.

9. Caregivers should change food items as often as possible to reduce boredom and possible reliance on particular foods.

10. Caregivers should observe individuals eating a variety of different food at mealtimes and report to the health professional any observed difficulty the person was noted to have with the food.

11. When caregivers notice oral intake and supplements fail to meet an individual's caloric and protein needs, they should notify the nurse and dietitian.

12. Do not tuck the bib under the tray or plate, as it pulls an individual's head down.

DAY 2 - EXPECTED OUTCOMES

As a result of completion of this section, you will:

- **Know possible causes of eating and swallowing problems**
- **Know conditions which contribute to eating and swallowing problems**
- **Know techniques to prevent eating/feeding problems**
- **Recognize alternate methods of receiving nourishment**

DESCRIPTION

It is imperative that caregivers are knowledgeable about conditions which may contribute to eating and swallowing difficulties and in applying techniques to avoid choking and aspiration.

ASSESSMENT

This module will be assessed based on the successful completion of three factors:

- A minimum score of 70% on a written test.

- Participation in a classroom session that includes practice in various techniques to prevent eating/feeding problems.

- Satisfactory completion of an out-of-classroom assignment identifying special eating/feeding problems for individuals in the staff's respective programs.

GLOSSARY

Allergy:	a hypersensitive reaction to a substance
Asthma:	a respiratory disorder which causes wheezing, coughing, labored breathing
Cerebral Palsy:	a motor function disorder caused by a permanent, non-progressive brain defect or lesion present at birth, or shortly thereafter
Cerebrovascular accident (CVA):	an injury to the brain due to a decreased blood supply to the brain
Chronic Obstructive Pulmonary Disease (COPD):	a progressive disease with decreasing lung capacity - also called Chronic Obstructive Lung Disease.
Congestive Heart Failure (CHF):	an abnormal condition characterized by circulatory congestion caused by cardiac disorders
Convulsion:	a sudden involuntary contraction of a group of muscles
Debilitated:	being feeble, weak, or having loss of strength
Diaphragm:	a partition which separates the chest and the abdominal cavities
Distention:	swelling out or expanding from internal pressure
Emphysema:	an abnormal condition of the respiratory system which causes difficulty in breathing
Esophageal:	pertains to the tube/pipe which carries food from mouth to stomach
Hiatal hernia:	a defect in the diaphragm that permits a portion of the stomach to pass into the chest cavity
Huntington's Disease:	an inherited, progressively degenerative brain disorder which results in a loss of both mental capability and physical control

Misaligned:	not in correct position
Multiple sclerosis:	a progressive disease of muscle weakness, vertigo, and visual disturbances
Muscular Dystrophy:	a group of heredity diseases in which there is a loss of strength with increasing disability and deformity
Neurological:	dealing with the nervous system
Obstruction:	something that blocks or prevents passage
Palate:	structure which forms roof of the mouth, hard and soft palate
Parkinson's disease:	a slowly progressive, degenerative, neurological disorder (resting tremors, shuffling walk, bent forward at waist, stiff muscles and weakness)
Pica:	eating things which are not food (i.e., dirt, hair, cloth, pins)
Scoliosis:	lateral (sideways) curvature of the spine
Seizure:	the sudden involuntary contractions of a group of muscles due to a disturbance in the electrical activity of the brain; usually referred to as an epileptic attack or convulsion
Tracheostomy:	an opening through the neck into the trachea (wind pipe) with an indwelling tube inserted
Trauma:	wound or injury
Tumor:	swelling or growth
Vertigo:	a sensation of movement in which the individual feels himself revolving in space

I. POSSIBLE CAUSES/CONDITIONS WHICH CONTRIBUTE TO SWALLOWING PROBLEMS

Learning Objectives

As a result of reading this material, you will be able to:

- **Recognize various mouth conditions which contribute to swallowing problems**
- **Recognize various neurological conditions which contribute to swallowing problems**
- **Become aware of physical illnesses and conditions which contribute to problems in swallowing**
- **Become aware of how gastroesophageal reflux and esophageal stricture contribute to problems associated with swallowing and choking**
- **Recognize behaviors that contribute to problems in swallowing**
- **Become aware of the possible effect of medication on the swallowing process**

There are various conditions and illnesses which contribute to problems in swallowing, and may lead to choking and aspiration during eating/feeding. All caregivers need to recognize these conditions, illnesses and behaviors in order to make eating and tube feedings a safe experience for individuals.

A. Mouth problems include:

1. Poorly fitting dentures
2. No teeth/misaligned teeth
3. Gum disease
4. Increased or decreased saliva
5. Illness
6. Soreness/pain in mouth or throat
7. Malformed palate

B. Neurologic deficits (brain damage/impairment) and degenerative diseases including:

1. Cerebral palsy
2. Muscular dystrophy
3. Multiple sclerosis
4. Stroke (CVA)
5. Parkinson's disease
6. Trauma/injury
7. Tumors
8. Nerve damage
9. Huntington's Disease

All of the preceding can, but do not always result in a chewing/swallowing problem. The most common symptom would be muscle weakness. Drooling may be present and is a sign of oral weakness or lack of control.

C. Conditions which may interfere with the normal swallowing process as a result of impact on respiratory function:

1. COPD (chronic obstructive pulmonary disease)
2. Asthma/allergies
3. Scoliosis (lateral/sideways curvature of the spine)
4. CHF (congestive heart failure)
5. Emphysema (abnormal condition of the respiratory system)
6. Upper respiratory insufficiency
7. Excessive mucus
8. Tracheostomy

D. Digestive system conditions which may lead to problems in choking and/or aspiration include gastroesophageal reflux and esophageal stricture.

Gastroesophageal reflux occurs when the contents of the stomach flow backwards into the esophagus. The esophagus is a pipe/tube which carries food from the mouth to the stomach. At the bottom of the esophagus is a muscle, called the lower esophageal sphincter, which normally prevents the flow backwards. When this muscle is not working properly, the contents of the stomach flow backwards into the esophagus. When this happens, individuals have what most of us refer to as "heartburn." Heartburn is a burning or sour feeling in the throat and chest. If this happens often enough, the lining of the esophagus becomes scarred due to the acid content. Areas in the esophagus may become more narrow (stricture), an esophageal ulcer may develop, and bleeding may occur.

When contents of the stomach flow back into the esophagus, they may wash back up into the throat and mouth. If an individual has poor swallowing abilities, he/she may choke and aspirate this content into the respiratory system. This usually causes aspiration pneumonia and may lead to death.

If an esophageal stricture develops from the acid, individuals usually have difficulty getting food beyond this narrow area in the esophagus. When this happens, the individual will also have "heartburn" and the contents may again return upward into the mouth and throat. When swallowing abilities are poor, choking and aspiration may occur.

E. Behavioral considerations may affect swallowing and lead to problems with choking and aspiration. The following behaviors may affect swallowing:

1. Agitation or any hyperactivity, including mania
2. Depression or any activity that slows responses (i.e., withdrawn, listless, apathetic)
3. Rapid consumption of large amounts of food
4. Self-induced vomiting
5. Pica (eating non-food substances)

F. Medication

Many medications affect the gastrointestinal (G.I.) system, either intentionally or indirectly (side effects). An important part of designing a functional eating/feeding program is understanding how medications affect this process.

The following pages describe G.I. effects of specific groups of medications. This information should be incorporated into the treatment plan. For example, a medication that causes a dry mouth will interfere with the beginning phase of digestion, or chewing and mixing food with saliva. Therefore, if an individual is experiencing this problem, frequent fluids should be offered during the meal. In addition, frequent sips of fluids, hard candies to suck on, or mouth care with lemon-glycerin swabs may be offered between meals.

Further information on medications can be obtained from a licensed health care professional or current medication reference.

Adverse side effects (e.g., vomiting, diarrhea) should be reported to a licensed health care provider.

G. Illness and conditions which reduce protective airway reflexes will cause problems in swallowing and may lead to choking and/or aspiration. Examples of these include:

1. Altered states of consciousness (i.e., coma, stroke, head injury, convulsions)
2. Debilitated individuals (feeble, weak, loss of strength)
3. Esophageal and motility (movement of food and gastric acid) diseases
4. Delayed emptying time of stomach (intestinal obstruction, abdominal distention)
5. Hiatal hernia

II. TECHNIQUES TO PREVENT EATING/FEEDING PROBLEMS

LEARNING OBJECTIVES

As a result of reading the material and classroom demonstrations, you will be able to:

- **Describe and demonstrate various eating and feeding techniques which may be used to deal with problems in swallowing, leading to choking and aspiration**
- **Describe and demonstrate proper positioning for eating/feeding**
- **Describe and demonstrate proper body positioning for the caregiver**
- **Identify the three key areas of the tube feeding process**
- **Demonstrate care of the mouth and tube insertion sites**

The descriptions of feeding techniques which follow are general guidelines. A qualified therapist should be consulted about the most effective feeding techniques for each individual needing eating assistance.

1. Head control: It is often necessary to support an individual's head in a slightly forward position while eating. This may be accomplished by using a headrest, or by supporting the head with an arm placed behind the head. The caregiver "hooks" an arm around the head, placing support where the neck and skull

Side

meet. This supports the individual's head in a slightly forward position, while preventing a "birdfeeding" position in which the head tilts backward.

2. Manual jaw control: This technique is used when an individual has difficulty closing the jaw to control the food in his/her mouth. Manual jaw control can be applied from the front or side of the individual who is eating, and involves a firm, but gentle closure of the individual's mouth by moving the lower jaw upward as soon as food is placed in the mouth. The lower jaw is supported in this closed position until the food is swallowed. Manual jaw control is not used to simulate chewing by moving the jaw up and down. Please refer to the illustrations for proper hand placement for side and front jaw control. Note that manual jaw control from the side is usually combined with head control by wrapping the caregiver's arm around behind the head and placing the hand under the chin.


Front

3. Lip closure: This technique involves gently squeezing the lips together after food is placed in the mouth. It is used primarily with individuals who have some difficulty controlling the muscles which close the mouth. The most commonly used lip closure method is done by placing the index finger above the upper lip and the middle finger below the lower lip, moving the lips together with a scissor motion by the fingers.

4. Downward pressure on the tongue: When an individual has a tongue thrust, this technique may be used in conjunction with jaw control techniques to help the individual keep his/her tongue in the mouth while eating. It involves placing gentle, but firm downward pressure on the front 2/3 of the tongue with the bowl of the spoon, while putting the food in the mouth. The jaw is then supported using manual jaw control techniques to minimize tongue thrusting and food loss.

5. Release of a bite reflex: When an individual has a bite reflex, he/she may bite down on the utensil involuntarily. It is important to remember that he/she is not doing it on purpose. A rubber-coated utensil should always be used when assisting an individual with a bite reflex in eating. Usually the individual will release the bite reflex within a few seconds with no intervention. It is occasionally necessary to put pressure under the chin to help release the bite; however, this technique should only be done upon recommendation by a qualified professional. A utensil should never be pried from between the individual's teeth during a bite reflex.

6. Oral stimulation techniques: There are a wide variety of stimulation activities available. However, consult with professionals and others who are very familiar with the individual before any oral stimulation activities are begun. Examples of oral stimulation techniques include: rubbing the gums and stroking the cheek and lip muscles.

7. Food placement: Although not commonly referred to as a feeding "technique," the place in the mouth where food is placed can help develop more mature eating skills. For example, placing food on the back molars encourages sideways (lateral) tongue movements to retrieve food and improve chewing skills.

B. Proper Positioning

The descriptions of proper positioning which follow are general guidelines. Each individual has different needs regarding positioning; therefore, a professional should be consulted for specific recommendations on positioning.

1. Positioning for the individual who will be eating: The individual should be seated in an upright position of not less than a 45-degree angle. Under no circumstances should an individual eat or receive tube feedings while lying flat on his/her back. The individual should be seated all the way back in the chair, with hips stabilized with a seatbelt when needed. He/she should avoid sitting on the lower back or coccyx. Feet should be supported. The shoulders and head should be positioned as near to midline and as level as possible. The head should be bent forward slightly while eating. DO NOT attempt to assist anyone to eat while his/her head is tilted backward as this presents an increased risk of aspiration.

2. The caregiver should always follow principles of good body mechanics to avoid fatigue during the meal. When possible, the caregiver should sit near the individual who is eating in order to be at eye level with him/her, and within his/her field of vision. Food should be presented at midline. The caregiver should be positioned at midline, or slightly off to one side of the individual who is eating. If the caregiver must stand throughout the meal, it is often helpful to elevate one leg on a small stool or box to minimize strain on the lower back.

C. Tube feedings

Individuals who are unable to receive adequate nourishment by mouth, or who have difficulty swallowing may be fed through a tube inserted through the nose or abdomen into the stomach or intestines. Before attempting a tube feeding, caregivers should be familiar with the feeding care plan and receive instructions from a licensed health care provider.

1. Preparation

   Check diet order with individual's record

   Remember that the formula should be given at room temperature

   Check individual's care plan for rate of flow for feedings

2. Feeding Process

   Monitor individual during the entire feeding process.

   Feeding should be given in the dining room.

   If vomiting occurs stop the feeding immediately.

   A pleasant atmosphere should be established so the individual accepts feedings as a needed and desired meal, rather than treatment.

Have the individual remain at least 45 degrees elevated or sitting for one hour after a meal or tube feeding to reduce risk of gastroesophageal reflux and/or aspiration. (An individual should eat or receive a tube feeding in as near an upright position as possible.)

3. General Care

Give good mouth care. Brush teeth and use swabs and mouthwash with special attention to the tongue and mucous membranes.

Individuals receiving tube feedings breathe through the mouth, resulting in drying and cracking of the lips. Care may be needed as frequently as every two hours.

When an individual has a nasogastric tube inserted through the nose, the nose needs to be cleaned gently with warm water and the nostrils frequently lubricated with K-Y jelly. Change the tape on the nose daily or more frequently to prevent skin irritation.

Clean the skin around the insertion site of the gastrostomy or jejunostomy tube gently with warm water to prevent skin from becoming excoriated by gastrointestinal secretions. Apply paste or ointment as prescribed, and cover with a dressing. Then anchor the tube.

If the feeding tube comes out, or you feel the tube is not in the correct position, DO NOT attempt to feed the individual. Contact the nurse or a licensed health care provider.

In order to prevent infection, you must use the proper hand washing technique, before and after administering a tube feeding and providing tube care.

D. Other reminders for caregivers:

Do not use syringes or athletic squeeze bottles for giving fluids to an individual. This may lead to choking and aspiration. There is no involvement by the individual with this method, as the oral stage is by-passed. Community residential settings do not have the emergency equipment and professionals on site to deal with the risks syringes and squirt bottles pose.

Have the individual remain elevated at least 45 degrees for one hour after a meal or tube feeding to reduce risk of gastroesophogeal reflux and aspiration. An individual should eat or receive a tube feeding in as near an upright position as possible. Do not allow a person to eat and then lie down to rest or sleep. This will promote GE reflux. It is also difficult to handle secretions when lying flat.

All caregivers must be alert for the appearance of signs and symptoms of aspiration pneumonia, which results from the inhalation of fluid or foreign body. Individuals at risk for aspiration are those with gastroesophageal reflux, esophageal stricture, seizure activity, and individuals with illness and conditions which result in poor swallowing abilities. Signs and symptoms include: increased rate of respiration, noisy breathing, coughing, shortness of breath, fever, bluish color of the skin, low blood pressure, rapid heartbeat, and pink frothy sputum. Caregivers should notify the licensed health care professional at once if any of these signs or symptoms are observed.

References:

Administering Medications: A Competency-Based Program for Health Occupations. Phyllis Theiss Bayt, R.N., B.S., Wendy W. Ford. Mission Hills, CA: Glencoe Publishing Company, 1982.

Community Direct Care Staff Curriculum, DMH, 1984.

Drugs for the Nervous and Sensory Systems, Unit 10.

"The Hazards of Immobility," pp. 43-48, American Journal of Nursing, March 1990.

Illustrated Manual of Nursing Practice, Springhouse, PA: Springhouse Corporation, 1991.

Information from recent curriculum developed for *"Implementation of Eating and Feeding Techniques to Meet Individual's Clinical Needs."*

Mosby's Manual of Clinical Nursing, Second Edition, C.V. Mosby Company, 1989.

Nurses' Reference Library-Assessment, Nursing 82 Books, Intermed Communications, Inc., Springhouse, Pa. 19477.

Nurses' Reference Library (Diseases, Definitions, Assessments, Signs and Symptoms and Patient Teaching). Nursing 87 Books, Springhouse Corporation, Springhouse, Pennsylvania.

Nurses' Reference Library Series. Nursing 81 Books, Springhouse Corporation, Springhouse, Pennsylvania.

Nurse Review: A Clinical Update System, Vol. 1, "Neurologic Problems," Springhouse Corporation, Springhouse, Pennsylvania. 19477.

Nurse Review, "Musculoskeletal Problems," Springhouse Corporation, Springhouse, Pennsylvania, 1991.

The Way Your Body Works, Stonehouse, Bonanza Books, 1985.

GLOSSARY

Adaptive-modified for a special use or situation.

Adrenal-endocrine gland which produces epinephrine (adrenaline), norepinephrine and steroidal hormones needed to maintain fluid balance and metabolism of carbohydrates and proteins.

Align-to position in a straight line.

Allergy-abnormal sensitivity to a specific substance, e.g., food, dust, pollen, etc.

Analgesic-medication which prevents or relieves pain, fever and inflammation.

Anemia-condition in which the blood is abnormally low in red cells or hemoglobin, resulting in a decreased capacity of the blood to carry oxygen.

Angina pectoris-cardiac condition caused by insufficient blood flow to the heart and marked by severe chest pain and intense feelings of anxiety and apprehension.

Anorexia-abnormal lack of appetite for food.

Antacid-substance which counteracts or neutralizes stomach acid.

Antianemic-medication used to replace iron to aid in the production of red blood cells.

Antianginal-medication used to relax or enlarge the coronary arteries to allow the heart to receive more blood and oxygen.

Antianxiety-medication used to prevent or relieve feelings of apprehension or emotional tension and to decrease muscle tension or spasm; also referred to as minor tranquilizers.

Antibiotic-medication used to treat infection, also referred to as anti-infective.

Anticoagulant-medication which prevents or slows the clotting of blood.

Anticonvulsant-medication which prevents or relieves seizures or epilepsy.

Antidepressant-medication which prevents or relieves extreme sadness.

Antidiarrheal-medication which reduces or prevents abnormal frequency and liquidity of bowel movements.

Antiemetic-medication which prevents or relieves nausea or vomiting.

Antifungal-medication which kills fungi or reduces the growth of fungal infections.

Antihistamine-medication which prevents or reduces mucous secretions and other symptoms commonly associated with colds and allergies.

Antihypertensive-medication which reduces high blood pressure.

Anti-infective-medication which reduces or kills the germs which cause infection; also referred to as antibiotic or antibacterial.

Anti-inflammatory-medication reduces inflammation often indicated by pain, heat, redness, swelling or tumor, and/or the loss of function.

Antimanic-medication which prevents or reduces the occurrence and intensity of hyperactive behavior and mood swings.

Antiparkinson-medication used to relieve symptoms of drug induced movement disorders, e.g., involuntary repetitive movements which affect the mouth, face, limbs and respiratory muscles.

Antipruritic-medication used to relieve itching and to prevent further infection which could be caused by scratching.

Antipsychotic-medication used to relieve or prevent agitation, psychotic behavior and delusional thinking.

Antipyretic-medication which reduces fever.

Antiseptic-agent which destroys germs on skin surfaces and prevents the development of infection.

Antispasmodic-medication which relieves spasm, usually of smooth involuntary muscles.

Antitussive-medication which relieves or prevents coughing.

Antiulcer-medication which reduces digestive juices and forms a protective covering for sores in the mucous membrane lining of the stomach.

Arteriosclerosis-chronic disease in which thickening and hardening of the walls of the arteries interfere with circulation; also referred to as "hardening of the arteries."

Artery-thickly lined tube which carries blood from the heart to all parts of the body.

Aspiration-condition when food, fluid, or foreign object is breathed or sucked into the windpipe or airway.

Aspiration pneumonia-severe inflammation of the lungs caused by the entrance of food particles or other foreign substance into the respiratory passages (bronchi).

Asthma-abnormal respiratory reaction to an irritating substance in the environment, infection, vigorous exercise or emotional stress in which the airway narrows and inhaled air cannot be exhaled properly.

Barbiturate-class of medication belonging to the sedatives and hypnotics which is used to aid relaxation or sleep.

Bile-fluid produced by the liver which aids digestion.

Bite reflex-involuntary biting.

Bladder-hollow organ which holds urine or bile.

Bolus-a soft mass of chewed food.

Bronchi-air passages of the lungs.

Bronchiectasis-chronic condition, characterized by enlargement and destruction of the walls of the bronchi resulting from obstruction and infection and is usually accompanied by cough and a mucous and pus discharge.

Bronchitis-inflammation of one or more bronchi, characterized by coughing, a mucous discharge and changes in lung tissue.

Bronchodilator-medication which enlarges respiratory air passages and improves breathing.

Bruxism-grinding of the teeth.

Capillaries-thinly lined tubes which connect the smallest arteries to the smallest veins.

Cardiac arrest-state in which the heart stops pumping blood.

Cardiac arrhythmia-any variation in the normal rhythm of the heart, e.g., vibration (fibrillation), skipped contractions, rapid or slowed beats. This condition can be problematic because it affects the ability of the heart to pump blood.

Cardiac stimulant-medication used to stimulate cells within the heart which control the force of the heartbeat.

Cardiovascular system-body system, consisting of the heart, blood vessels and blood, which carries food, oxygen and water to cells and removes waste; also referred to as the circulatory system.

Cathartic-agent which causes evacuation of the bowels by increasing bulk or stimulating contractions in the intestines which aid elimination. Laxatives are the least potent type of cathartic.

Cerebral palsy-nonprogressive disorder of motor function caused by damage to the central nervous system prior to, during or immediately following birth; may be characterized by involuntary contractions of skeletal muscles, seizures, impaired speech or vision or mental retardation.

Cerebrovascular accident (CVA)-sudden injury to the brain caused by blockage or rupturing of arteries in the brain; because oxygen supply is interrupted or diminished, damage to brain tissue may result in the failure to speak or move limbs; also referred to as "stroke."

Choking-blocking of the airway by food or other foreign substance.

Chronic obstructive pulmonary disease (COPD)-an irreversible condition marked by decreased lung capacity; refers to a group of diseases which include asthma, bronchitis, emphysema, and bronchiectasis; also referred to as chronic obstructive lung disease.

Cilia-tiny hairs in the lungs and trachea (windpipe) which "sweep" dirt, dust and pollen into a sticky substance called mucus.

Circulatory system-body system, consisting of the heart, blood vessels and blood, which carries food, oxygen and water to cells and removes waste; also referred to as the cardiovascular system.

Cognitive-related to mental processes, e.g., thinking, learning, reasoning.

Congestive heart failure (CHF)-chronic condition in which the heart is unable to pump enough blood to supply the needs of the body; condition is characterized by congestion, difficulty breathing, persistent cough, swelling of the lower legs and feet, high blood pressure, weakness and fatigue.

Contact dermatitis-sensitivity of the skin to an irritant which is marked by swelling, redness or rash.

Contracture-abnormal condition of the joints in which the formation of thick fibrous tissue results in deformity and limited movement.

Convulsion-a sudden involuntary contraction of a group of muscles.

Cyanotic-bluish coloring of the skin resulting from inadequate oxygen in the blood.

Cystitis-inflammation of the bladder.

Debilitated-lacking strength, weak; especially frail.

Decongestant-medication which reduces swelling and promotes drying of mucous membranes.

Decubitus ulcer-open sore on the skin due to prolonged pressure in the area of a bone; also referred to as bedsore.

Degenerative disease-disease characterized by continual impairment of the function of one or more organs which cannot be attributed to causes such as infection or metabolic defect, e.g., Huntington's chorea, Parkinson's disease.

Demulcent-soothing substance which relieves irritation of the mucous membranes, e.g., cough drops, throat lozenges.

Dermis-middle layer of skin which contains hair follicles, oil and sweat glands to help regulate body temperature and the nerves which sense pain, pressure and heat.

Diabetes-condition in which the body is unable to convert certain foods into the energy needed for normal activity.

Diabetic agent-medication which stimulates insulin release from the pancreas or serves as a source of insulin replacement.

Diaphragm-muscular partition, separating the chest and abdominal cavities, which aids air entering and leaving the lungs by creating a change in air pressure when the muscle moves up and down.

Diastole-when the heart muscle relaxes.

Dilate-to expand.

Disease-failure of adaptive mental and/or physical processes resulting in a disturbance in function or structure of any part, organ or system of the body.

Distention-swelling out or expansion from internal pressure.

Diuretic-medication used to eliminate excess fluids through urine which, in effect, reduces the amount of blood the heart has to pump.

Drug induced movement disorder-neurological disorder caused by the long term use of anti-psychotic medication which is characterized by tremor, muscle rigidity, a slow, shuffling gait, and difficulty in chewing, swallowing and speaking; it resembles the signs and symptoms of Parkinson's disease and is also referred to as Parkinsonism.

Dycem mat-non-skid plastic mat used under dinnerware or utensils to prevent slippage.

Dysphagia-difficulty in swallowing.

Eczema-noncontagious itching, inflammatory skin disease of unknown cause, usually characterized by red, swollen, crusty, sometimes pus-filled lesions.

Edema-abnormal accumulation of fluid in body tissues or cavities.

Embolus-Blood clot, air bubble or other particle carried by the blood from a larger to a smaller vessel, thus obstructing circulation.

Emetic-a substance which causes vomiting.

Emphysema-respiratory condition marked by labored breathing and increased susceptibility to infection.

Endocrine system-body system which consists of eight glands (pituitary, thyroid, parathyroid, adrenal, thymus, pineal, pancreas and gonads) which produce hormones carried by the blood stream to regulate functions throughout the body.

Enteral nutrition-the placement of fluid or pureed food by a feeding tube into the stomach or small intestine.

Epidermis-outermost layer of skin which consists of cells which are constantly shed or replaced; it forms a barrier against bacteria and drying out of the skin.

Epiglottis-lid-like structure which prevents food or liquid from entering the larynx (voice box) or the trachea (windpipe) while swallowing.

Epilepsy-disorder of the brain characterized recurring episodes of motor, sensory or psychic dysfunction which may be accompanied by convulsive movements.

Esophageal sphincter-muscle at the bottom of the esophagus which normally prevents the backward flow of food.

Esophageal stricture-a narrowing of the esophagus resulting from repeated backward flow of food and digestive acids. Because of the narrowing, individuals are more prone to "heartburn," and susceptible to choking or aspiration.

Esophageal ulcer-sore caused by the loss or inflammation of the mucous membrane in the esophagus.

Esophagus-the tube which links the mouth and stomach.

Estrogen-hormone produced by the ovaries which is responsible for the development of female secondary sex characteristics and used in oral contraceptives and the treatment of osteoporosis, post-menopausal breast cancer, prostate cancer and ovarian disease.

Excoriation-injury to skin caused by scratching or rubbing.

Expectorant-agent which promotes the expulsion of mucus or other fluids from the lungs and trachea.

Extend-stretched or pulled out.

External genitalia-reproductive or sexual organs located outside the body, e.g., vulva (opening of urethra and vagina) in females and the penis and scrotum in males.

Fallopian tubes-passageway through which the ova (eggs) travel to the uterus in females.

Flexion-the bending of a joint.

Fracture-a break in a bone which may or may not require surgery to repair.

Functional-designed or adapted for a particular purpose.

Gallbladder-small muscular sac located under the right lobe of the liver which holds bile produced by the liver.

Gallstone-small, hard formation of cholesterol crystals formed in the gallbladder or bile duct of the liver. When these cannot pass into the small intestine, they may cause jaundice and pain.

Gastritis-inflammation of the stomach lining caused by the ingestion of medications or a virus, bacteria or chemical toxins; when chronic, is usually a sign of underlying disease.

Gastroesophageal(GE) reflux-a backward flow of stomach contents into the esophagus.

Gastrointestinal (GI) system-body system composed of the mouth, esophagus, stomach, intestines, liver, gall bladder and pancreas which aids in digestion and the elimination of waste.

Gland-organ which forms and discharges substances to be used elsewhere in the body or eliminated.

Glucose-form of sugar produced by carbohydrates which is used by the body for energy or storage for future use.

Gonad-endocrine gland which produces reproductive cells of ovaries in females and testes in males.

Graves disease-most common form of hyperthyroidism or over-production of the thyroid hormone.

Heart attack-condition when the heart stops pumping blood; also referred to as myocardial infarction (MI).

Hemorrhage-bleeding.

Hiatal hernia-a defect in the diaphragm which permits a portion of the stomach to pass into the chest cavity.

High blood pressure-when systolic pressure is 139 or above and/or diastolic pressure is 89 or above.

Hormone-chemical substance produced by glands which regulates growth and development, physical appearance, body function and emotions.

Huntington's disease-an inherited, progressively degenerative brain disorder resulting in the eventual loss of mental and physical abilities. It is characterized by uncontrollable and irregular movements of the arms, legs and face; also referred to as Huntington's chorea.

Hyperglycemia-too much sugar in blood

Hypertension-chronic condition of abnormally high blood pressure.

Hyperthyroidism-condition resulting from an over-production of the thyroid hormone.

Hypertonic-above normal in tone or tension.

Hypnotic-medication used to aid sleep.

Hypoglycemia-low blood sugar.

Hypotension-low blood pressure.

Hypothyroidism-deficiency in thyroid production.

Hypotonic-below normal in strength or tension.

Impaction-condition in which dry hard stool will not pass from the rectum to the anus.

Incontinence-partial or complete loss of bladder or bowel control.

Insomnia-disturbed or prolonged inability to sleep.

Insulin reaction-condition arising suddenly when a diabetic has too little sugar in the blood in relation to the amount of insulin.

Insulin-hormone produced by the pancreas which regulates the amount of sugar or glucose used by the cells.

Insulin shock-diabetic condition caused by too low sugar or too much insulin; also referred to as hypoglycemia.

Insulin-dependent (Type I) diabetes-condition marked by a total or substantial lack of insulin, also referred to as juvenile diabetes.

Integumentary system-body system consisting of the skin and the glands embedded in it, hair and nails.

Irritable bowel syndrome-condition in which bowel movements alternate between constipation and diarrhea; may be caused by emotional stress, certain foods, abuse of laxatives, food poisoning, colon cancer, etc.

Jaundice-yellowness of the skin.

Jejunostomy-surgical creation of an opening though the abdominal wall into a part of the small intestine (jejunum).

Jejunum-one of three portions of the small intestine.

Keratolytic-agent which softens or promotes shedding of the outer layer of skin, e.g., warts, corns, eczema, psoriasis.

Ketoacidosis-condition resulting from an abnormal increase of acids (ketones) in the blood because of too much sugar and too little insulin; also referred to as hyperglycemia or diabetic coma.

Kidney-one of a pair of glandular organs which separates waste from the blood and discharges it through the urine.

Kyphosis-abnormal curvature of the thoracic spine as viewed from the side.

Larynx-structure at the upper end of the trachea which contains the vocal cords or voice box.

Lateralize-moving from side to side.

Ligament-a band of tissue which holds bones or organs in place.

Liver-largest glandular organ in the body, it produces bile needed for the formation of blood and the metabolism of carbohydrates, fats, proteins, vitamins and minerals.

Mammary gland-gland which produces milk; breast.

Menopause-end of menstruation, which marks the final phase of female reproductive function; also referred to as menses or period.

Menstruation-monthly pattern (usually every 28 days) of blood loss from the mucous membrane of the uterus.

Misaligned-not in the correct position.

Motility-capable of spontaneous or involuntary movement.

Mucus-thick liquid produced by mucous membranes for moistening and protection.

Multiple sclerosis (MS)-a progressive disease marked by increasing muscle weakness, incoordination, vertigo, speech disturbances and visual complaints.

Muscle relaxant-medication used to decrease the frequency and severity of the pain of muscle spasms.

Muscular dystrophy-a group of heredity diseases marked by painless, degenerative weakness and atrophy of muscles without involvement of the nervous system.

Musculoskeletal system-body system consisting of the bones, muscles, ligaments and tendons which provide the framework for the body and protection for internal organs and other underlying structures, e.g., nerves and blood vessels.

Myocardial infarction (MI)-condition caused by a blocked blood vessel in the heart which results in the death of heart tissue due to a lack of oxygen; also referred to as heart attack.

Nervous system-most complex body system, comprised of the brain, brain stem, spinal cord, and cranial and peripheral nerves.

Neurological-relating to the nervous system.

Neuropathy-loss of feeling/sensation in the peripheral nervous system.

Neutral position-not favoring either side.

Noninsulin-dependent (Type II) diabetes-most common type of diabetic condition, usually occurring gradually in later years, in which insulin is not properly used by the body or is not present in sufficient quantities; referred to as adult-onset diabetes.

Obstruction-something which blocks or prevents passage.

Organ-a body part composed of specialized tissues which is adapted for the performance of a specific function.

Orthostatic hypotension-the fall of blood pressure which occurs when an individual rises from a sitting or lying position.

Osteoarthritis-degenerative disease of weight bearing joints, e.g., knees, usually accompanied by pain and stiffness.

Osteoporosis-condition seen most frequently in the elderly in which the bones are weak, brittle and easily fractured.

Ovaries-two female reproductive glands which contain and release the ova or eggs.

Palate-the roof of the mouth; serves as a partial separation between the nasal and oral cavities. The palate consists of a bony front or **hard palate** and is backed by the fleshy **soft palate**.

Pancreas-glands which release digestive juices into the small intestine and produce insulin; regulate burning of carbohydrates, fats and proteins.

Paralysis-partial or complete loss of voluntary motion or sensation in part or all of the body.

Parasiticide-medication which destroys parasites, e.g., scabies, lice.

Parathyroid-endocrine gland which regulates calcium and phosphorus metabolism.

Parkinson's disease-chronic, progressive, degenerative, neurological disorder of unknown cause, characterized by an expressionless face, infrequency of blinking, poverty and slowness of voluntary movement, rigidity of muscles, rhythmic tremors, stooped posture, and a shuffling gait.

Peripheral artery disease-blockage particularly in blood vessels below the knee.

Peristalsis-rhythmic contractions of the smooth muscles lining the gastrointestinal tract which move food and waste materials through the system.

Pharynx-throat.

Pica-eating non-food substances, e.g., dirt, hair, pins, etc.

Pineal-small cone-shaped gland whose function is unknown.

Pituitary-referred to as the "master" gland, located at the base of the brain, the secretions of which control the other endocrine glands and influence growth, metabolism, and maturation.

Plasma-the liquid which makes up more than half of blood.

Postural drainage-positioning of the body to drain secretions from the affected parts of the bronchi and lungs into the trachea for expulsion.

Pre-menstrual syndrome (PMS)-condition prior to menstruation characterized by water retention, tension, stomach cramps, etc.

Pressure sore-skin over a bone which is red and shiny; early stage of decubitus ulcer or bedsore.

Progesterone-hormone produced by the ovaries which regulates menstruation and prepares the uterus for reception and development of the fertilized egg; also used in oral contraceptives and the treatment of ovarian disorders.

Prone-lying face downward.

Prostate-gland located below the bladder which produces a thin, milky fluid which neutralizes the fluids of the male urethra and female vagina.

Protrusion-pushed outward.

Psoriasis-chronic skin disease characterized by scaly, reddish patches.

Purse-to pucker the lips.

Reproductive system-body system, consisting of testes, prostate gland, urethra and penis in males and mammary glands, the uterus, fallopian tube and vagina in females, which regulates the development of secondary sex characteristics and the production of offspring.

Respiration-process of inhaling or exhaling. Rate may vary depending on the age and condition of an individual.

Respiratory system-body system, consisting of the nasal cavity, mouth, larynx, trachea, diaphragm and lungs, which supplies oxygen to tissue cells in all parts of the body and eliminates carbon dioxide wastes.

Retraction-pulled in or drawn back.

Saliva-clear fluid produced in the mouth which aids in chewing, swallowing and digestion.

Salivary glands-glands which produce fluid which coats and aids swallowing and the digestion of food.

Scoliosis-lateral or sideways curvature of the spine.

Scrotum-the pouch which contains the testes and their accessory organs.

Sedative-medication which produces a calming effect.

Seizure-sudden involuntary contraction of a group of muscles due to a disturbance in the electrical activity of the brain; usually referred to as an epileptic attack or convulsion.

Side effects-intentional or unintentional effects of medication.

Soft palate-fleshy back portion of the roof of the mouth.

Spastic colitis-gastrointestinal condition in which bowel movements alternate between diarrhea and constipation; also referred to as irritable bowel syndrome or spastic colon.

Sphincter-muscle which surrounds and serves to close an opening.

Sputum-material from the surface of the air passages, throat or mouth, consisting of mucus, pus and/or saliva, which is discharged through the mouth.

Stimulant-medication which increases brain and nervous system activity.

Stroke-condition resulting from injury to the brain caused by the blockage or rupturing of arteries; interruption of or lack of oxygen in the brain may result in paralysis, inability to speak, etc.; also referred to as cerebrovascular accident.

Stupor-state of lethargy and unresponsiveness in which person seems unaware of surroundings.

Subcutaneous-beneath the skin.

Supine position-lying on back, face up.

Symmetrical-perfect balance, same on both sides.

Systole-when the heart muscle squeezes or contracts.

Tendons-bands of tissue which attach muscles to bones.

Testes-two male reproductive glands located in the scrotum; source of sperm and male hormones.

Testosterone-hormone produced by the testes which causes the development of secondary sex characteristics in males; used in the treatment of breast cancer in females.

Thrombophlebitis-inflammation of a vein which may lead to a blood clot.

Thrombosis-condition when blood clots form within a blood vessel as a result of injury, inflammation or narrowed vessels.

Thymus-endocrine gland which aids the body in building resistance to disease.

Thyroid-gland secretes thyroid hormone which regulates calcium in the blood and the speed at which the body burns food.

Trachea-tube through which air travels to the lungs; also referred to as the windpipe.

Tracheostomy-surgical creation of an opening through the neck into the trachea (windpipe) and the insertion of an indwelling tube, i.e., tube designed to stay in place for a long period.

Traction-the act of drawing or pulling to align, prevent movement or relieve pressure as in cases of fracture.

Trauma-wound or injury.

Tremor-involuntary quivering movement of the hands, arms, legs or feet.

Tumor-swelling or growth.

Ulcer-crater-like sores of the mucous membrane found in the mouth, esophagus, stomach, or intestines.

Ureter-fibromuscular tube through which urine travels from the kidney to the bladder.

Urethra-tube through which urine is carried from the bladder; in males, it is also the passageway in the penis through which sperm and semen are carried.

Urethritis-inflammation of the urethra.

Urinary system-body system, consisting of the kidneys, ureters, bladder and urethra. The function is to rid the body of waste, and maintain proper water and chemical balance.

Urinary tract infection (UTI)-infections which may occur in any part of the urinary tract. When infection occurs in the urethra, it is called urethritis; when in the bladder, it is called cystitis; and when in the kidneys, it is called a kidney infection.

Uterus-muscular organ located in the pelvic cavity of females which is important in the processes of menstruation, pregnancy and labor; also referred to as the womb.

Vein-thinly lined tube through which blood passes from various organs back to the heart.

Velopharyngeal-pertaining to the soft palate and pharynx (throat).

Vertigo-sensation of movement in which an individual experiences the outer world as revolving around him/herself or that s/he is moving in space.

Vital signs-the measurements of pulse rate, respiration rate, body temperature and blood pressure. Abnormalities of vital signs are frequently considered clues to disease.

Windpipe-trachea or passage which carries air from the larynx to the bronchi.