

# UNIT 3: BODY SYSTEMS

## Table of Contents

<b>OVERVIEW</b> .....	<b>1</b>
<b>OBJECTIVES</b> .....	<b>1</b>
<b>NOTES</b> .....	<b>2</b>
<b>SYSTEMS OF THE HUMAN BODY</b> .....	<b>3</b>
<b>THE SKIN (INTEGUMENTARY SYSTEM)</b> .....	<b>5</b>
<b>MEDICATIONS USED TO TREAT DISORDERS OF THE SKIN</b> .....	<b>7</b>
<b>TOPICAL MEDICATION ADMINISTRATION</b> .....	<b>9</b>
<b>NITROGLYCERIN OINTMENT GUIDELINES</b> .....	<b>10</b>
<b>TRANSDERMAL MEDICATION ADMINISTRATION</b> .....	<b>11</b>
<b>THE MUSCULO-SKELETAL SYSTEM</b> .....	<b>13</b>
<b>MEDICATIONS USED IN TREATING MUSCULAR AND SKELETAL SYSTEM DISORDERS</b> ...	<b>17</b>
<b>THE RESPIRATORY SYSTEM</b> .....	<b>24</b>
<b>MEDICATIONS USED IN TREATING RESPIRATORY DISORDERS</b> .....	<b>26</b>
<b>ADMINISTRATION OF NOSE DROPS/SPRAYS</b> .....	<b>31</b>
<b>ADMINISTRATION OF INHALANT MEDICATIONS</b> .....	<b>32</b>
<b>NEBULIZERS</b> .....	<b>33</b>
<b>THE CARDIOVASCULAR SYSTEM</b> .....	<b>36</b>
<b>CARDIAC BLOOD FLOW</b> .....	<b>37</b>
<b>CIRCULATORY VESSELS</b> .....	<b>37</b>
<b>MEDICATIONS USED IN TREATING CARDIOVASCULAR DISORDERS</b> .....	<b>41</b>
<b>LYMPHATIC SYSTEM</b> .....	<b>51</b>
<b>MEDICATIONS USED IN TREATING INFECTIOUS DISORDERS</b> .....	<b>52</b>

**Table of Contents Continued**

**THE DIGESTIVE SYSTEM..... 59**

**MEDICATIONS USED IN TREATING GASTROINTESTINAL (DIGESTIVE) DISORDERS..... 60**

**ADMINISTRATION OF ORAL MEDICATIONS ..... 65**

**ADMINISTRATION OF RECTAL MEDICATIONS ..... 66**

**ENDOCRINE SYSTEM..... 69**

**MEDICATION USED IN TREATING ENDOCRINE DISORDERS..... 72**

**GENITOURINARY -- URINARY SYSTEM..... 78**

**MEDICATIONS USED IN TREATING GENITOURINARY DISORDERS ..... 80**

**THE NERVOUS SYSTEM ..... 85**

**MEDICATIONS USED IN THE TREATMENT OF NERVOUS SYSTEM AND PSYCHIATRIC DISORDERS ..... 94**

**FEMALE REPRODUCTIVE SYSTEM ..... 108**

**MALE REPRODUCTIVE SYSTEM..... 112**

**MEDICATIONS USED IN TREATMENT OF REPRODUCTIVE DISORDERS..... 114**

**ADMINISTRATION OF VAGINAL MEDICATIONS..... 116**

**SENSORY SYSTEM ..... 120**

**EAR ..... 120**

**EYE..... 120**

**MEDICATIONS USED IN TREATMENT OF EAR, EYE DISORDERS ..... 121**

**ADMINISTRATION OF EYE DROPS..... 124**

**ADMINISTRATION OF EAR DROPS..... 125**

**THE AGING PROCESS AND MEDICATIONS..... 127**

**THE AGING PROCESS AND MEDICATIONS..... 127**

**INJECTABLE MEDICATIONS ..... 128**

## **Overview**

---

In order to completely understand the effects different medications have on the human body, it is important to better understand the “systems of the human body.” This unit will focus on the following systems:

- Cardiovascular
- Gastrointestinal
- Endocrine
- Integumentary
- Musculoskeletal
- Lymphatic
- Reproductive
- Nervous
- Respiratory
- Sensory
- Genitourinary

Additionally, this unit will also look at the emotional and physical changes on the human body that are associated with the aging process.

### **◆ Objectives**

---

- Explain the Systems of the Human Body.
- Explain the Physical and Emotional Changes Associated with the Aging Process.
- Discuss common disorders in connection with medications used to treat these disorders.

**◆ Notes**

---

THE STUDENT IS NOT EXPECTED TO KNOW EVERYTHING THAT IS PRESENTED IN THIS UNIT. MODIFY AND FOCUS ON THE AREAS OF PRACTICE BASED ON THE POPULATION THE PARTICIPANTS WILL BE SERVING. SELECT QUESTIONS BASED ON THE FOCUS OF THE DISCUSSION FOR QUIZZES AND FINAL EXAM.

DISCUSS THE OBJECTIVES FOR THE UNIT WITH THE CLASS PARTICIPANTS.

BE SURE TO UTILIZE AS MANY PICTURES AND/OR OVERHEADS OF THE DIFFERENT BODY SYSTEMS WITH THE PARTICIPANTS AS YOU TALK ABOUT EACH BODY SYSTEM.

IT IS IMPORTANT TO EXPLAIN OR REVIEW EACH BODY SYSTEM, THE FUNCTION OF THAT SYSTEM, AND THE ORGANS INCLUDED IN THAT BODY SYSTEM. A MORE INDEPTH DISCUSSION OF COMMON DISEASES, THE SIGNS AND SYMPTOMS OF EACH OF THESE DISEASES AND THE MEDICATIONS THAT ARE SPECIFIC TO THE POPULATION THAT THE PATICIPANTS ARE SERVING SHOULD BE INCLUDED.

The information in this unit does not replace specific facility standard operating procedures.

Review this Unit and compile any additional resources or materials you may need to instruct this Unit.

# Systems of the Human Body

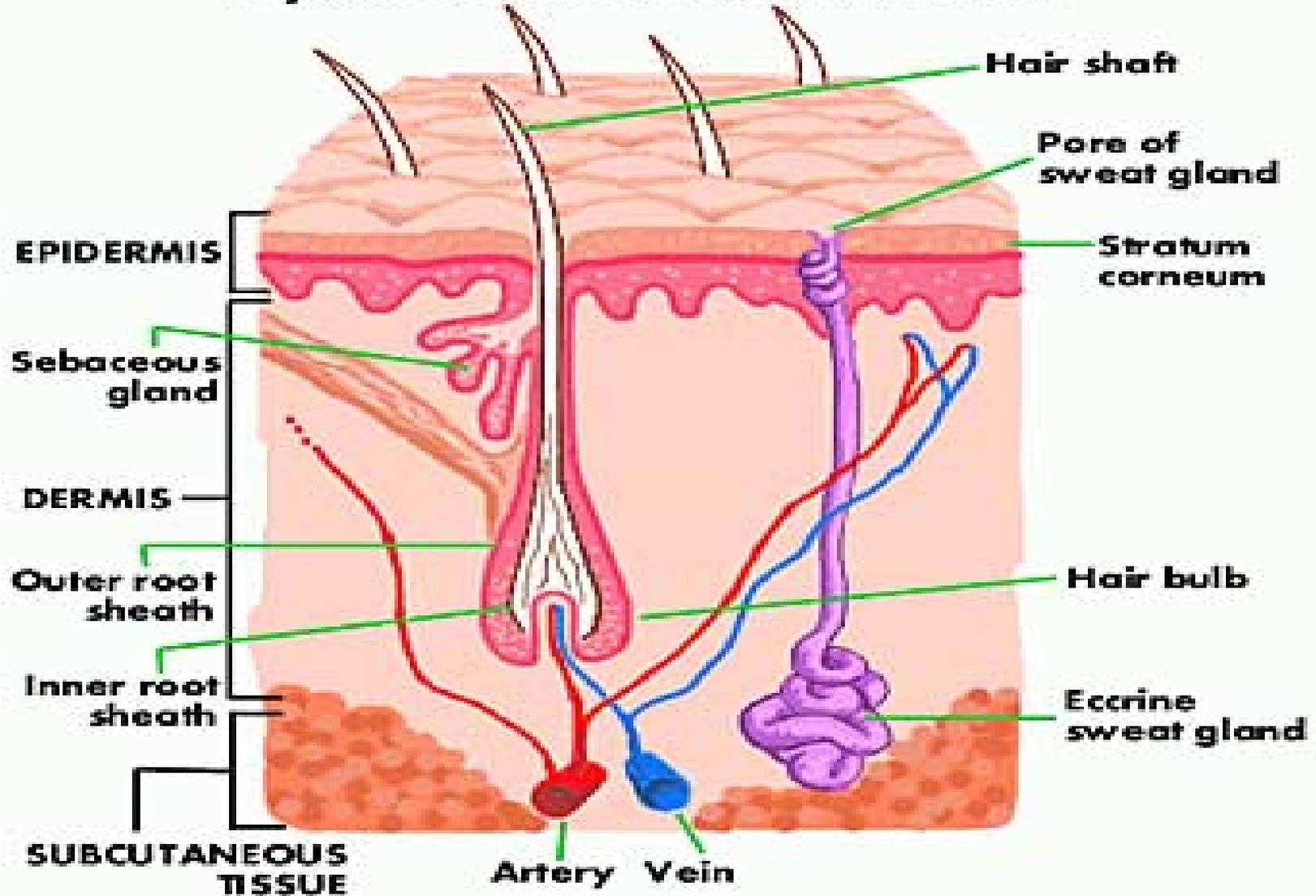
---

The study of the Human Body can be a very complex and in depth adventure. However, for the purposes of this course, it is important for each participant to be comfortable with the “systems” within the human body, the common diseases associated with particular human body systems, and the effects medications may or may not have on these systems.

Therefore, this section will focus on an overview of the major Human Body Systems by discussing the following:

- Functions
- Organs
- Medications
- Diseases (most common)
- Signs and Symptoms
- Undesired Medication Effects

# Layers & Structures of the Skin



## THE SKIN (INTEGUMENTARY SYSTEM)

### (Integumentary system)

The skin is actually the largest organ of the body and makes up about 15% of the total body weight and receives about one third of the body's blood supply.

SYSTEM	FUNCTION	• ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>Skin</b>	<ul style="list-style-type: none"> <li>• <b>Protection from environment</b></li> <li>• <b>Vitamin absorption</b></li> <li>• <b>Heat regulation</b></li> <li>• <b>Sensory organ</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Skin</b></li> <li>• <b>Hair follicles</b></li> <li>• <b>Hair</b></li> <li>• <b>Glands</b></li> </ul>	Burns	Observe for changes in consumer's normal skin tone to include redness, blistering, or skin loss.	Depending on the depth of the burn, you may be asked to assist in care. A 1st degree burn could be from a sunburn or small contact burn from cooking. Clean skin daily according to primary care provider's orders.
			Cancer	Changes in skin or moles.	Report any changes to your supervisor or primary care provider.
			Eczema	Itching, red skin and small blisters that burst, leaving the skin surface moist and crusty.	Follow the primary care provider's orders.
			Psoriasis	Inflamed areas, red or pink skin, plaques with silvery, scaly surfaces. Usually found on the elbows, knees, shins, scalp, and lower back.	Follow the primary care provider's orders.

	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>INTEGUMENTARY (cont'd)</b>			Cellulitis	Skin may be inflamed, red, warm to the touch, swollen, painful and may have some form of drainage present.	Follow primary care provider's orders for antibiotic therapy and wound care.
			Fungal Infections	Signs are variable depending on the area infected but may include; foul smelling discharge, thickened, discolored nails, open lesions, or white patches.	Antifungal medications and wound care as ordered by the primary care provider.
			Scabies	Itching in moist areas of the body. A raised, weeping rash may be present.	Follow primary care provider's orders.
			Lice	May see small white eggs attached to hair follicles. May see active lice (a bug that resembles a crab and takes on the color of the hair). Severe itching, redness, inflammation and/or infection may occur.	Follow directions of the primary care provider.
<b>CHANGES WITH AGE</b>	Decrease in blood supply. Loss of adipose (fat) tissue. Decrease in sensation. Outer layer of the skin becomes thin and fragile.				

• **MEDICATIONS USED TO TREAT DISORDERS OF THE SKIN**

<b>Topical (Skin) Medication - General Information</b>				
Use gloves when applying topical medications. Apply to clean, dry skin. These products are for external use only. Avoid contact with the eyes.				
<b>Topical (Skin) Anti-infectives</b>				
<b>EXAMPLES:</b>	<b>EXAMPLES:</b>	<b>INDICATIONS/USE</b>	<b>MAJOR SIDE EFFECTS</b>	<b>SPECIAL CONSIDERATIONS</b>
<b>GENERIC NAME</b>	<b>TRADE NAME</b>		<b>(Does not include all side effects)</b>	
<b>Neomycin Sulfate, Polymyxin B Sulfate, Bacitracin Zinc</b>  <b>Bacitracin/Polymixin</b>	Neosporin Ointment (Triple Antibiotic Ointment)	This is a combination of 3 anti- biotics. The product is used to treat & prevent skin infections caused by bacteria.	itching; skin rash; redness; swelling	1. Unless otherwise indicated by the primary care provider's orders, clean area with soap and water and dry thoroughly before application.  2. If the skin problem does not improve after 7 days or it gets worse, notify the primary care provider.
<b>Clotrimazole</b>	Lotrimin, Mycelex	This drug is used to treat fungal infections of the skin.	rash; hives; burning or stinging upon application; swelling, itching, redness, or other signs of skin irritation	Clean the affected area with soap & water and dry thoroughly (or clean the area according to the primary care provider's instructions) before using.
<b>Topical (Skin) Steroids</b>				
<b>Hydrocortisone</b> <b>Triamcinolone,</b> <b>Acetonide</b>	Hytone  Kenalog, Aristacort	These drugs are used to relieve the  redness, itching & swelling	dryness; irritation; burning; rash; skin thinning; streaks in skin; acne; impaired wound healing	1. Apply sparingly & rub in gently.  2. Do not bandage or wrap the treated area unless directed by the primary care provider.
<b>Betamethasone</b> <b>Dipropionate</b>	Diprosone, Diprolene	associated with rashes and other skin conditions such as eczema and psoriasis.	For systemic side effects, see the steroid section of "Drugs Used to Treat Endocrine Disorders".	3. Do not use these drugs more often or for a longer time than ordered by the primary care provider.  4. The systemic adverse effects may be a sign that the body is absorbing too much drug. In this case, notify the primary care provider.
Betamethasone Valerate	Valisone, Beta-Val			
<b>Other Topical (Skin) Drugs</b>				
<b>Permethrin</b>	Elimite, Nix	The shampoo is used to treat head lice. The cream is used to treat scabies.	itching; redness; rash; burning; stinging; numbness or scalp discomfort.	1. Follow the primary care provider's orders or the directions that accompany the product.  2. If treating head lice, all clothing, bedding, towels, & washcloths should be washed in hot water and bleach.

THIS PAGE LEFT INTENTIONALLY BLANK FOR FORMATTING PURPOSES.

PLEASE USE AS A “NOTES” PAGE.

## ◆ Topical Medication Administration

---

Some of the typical topical (dermatologic) applications may include patches petroleum-based ointments, water-based creams or powders.

### • Administration Technique

---

#### 1. Equipment

- a. Prescribed medication
- b. Gloves
- c. Dressing materials if ordered
- d. Cleansing materials if ordered

#### 2. Technique

- a. Wash hands and assemble equipment.
- b. Remember the EIGHT RIGHTS.
- c. Provide for the person/s privacy and explain the procedure.
- d. Ask the person to place the affected area in a position of comfort in order to apply topical medication.
- e. Cleanse area according to physician's order prior to applying new topical medication.
- f. Apply gloves. Maintain cleanliness of medication. Apply medication directly on dressing or glove, then, apply to affected areas.
- g. Clean area and all equipment used. Ensure that the person is comfortable.
- h. Wash hands thoroughly.

**NOTE:** Fever enhances the release and uptake of the drug and the resident may experience a local skin reaction.

- **Nitroglycerin Ointment Guidelines**

---

- Don gloves.
- Remove old patch and cleanse area. Remove gloves.
- Select a new site for application.
- Lay measuring paper on clean surface so you can read measures.
- Don clean gloves.
- Squeeze a ribbon of ointment of proper length onto applicator paper.
- Place paper on skin, ointment side down. (DO NOT RUB INTO SKIN).
- Tape in place.
- Wash hands after procedure.

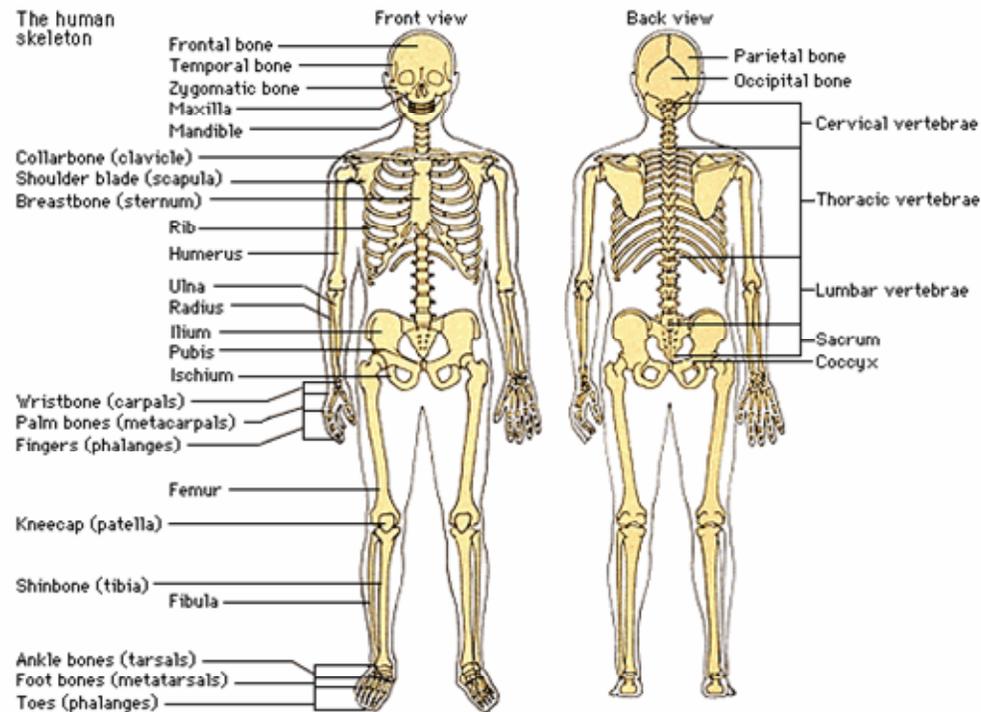
- **Transdermal Medication Administration**

---

“Transdermal” means “through the skin” and medications that the CRMA may administer in this category include the following:

- Patches
  - Fever enhances the release and uptake of the drug.
  - May have local skin reactions.
- Administration Techniques
  - Don gloves.
  - Remove old patch and cleanse area. Remove gloves.
  - Select a new site for application.
  - Obtain new patch.
  - Date and initial patch.
  - Don clean gloves.
  - Apply patch to new site.
  - Remember to rotate sites.
  - Wash hands after procedure.

# The Musculo-Skeletal System



From The World Book Multimedia Encyclopedia (TM) (c) 1997 World Book, Inc., 525 W. Monroe, Chicago, IL 60661. All rights reserved. World Book illustrations by Zorica Dabich



# THE MUSCULO-SKELETAL SYSTEM

## GENERAL

### THE MUSCULOSKELETAL SYSTEM

This system is made up of all the muscles and bones in the body. We have 206 bones that serve as protection for our internal organs and the framework our muscles need to allow us to stand and move. Our bones become very hard as we grow through our teenage years and they actually grow stronger with use just as our muscles do.

We have over 600 muscles associated with the skeletal frame.

There are other specialized muscles not connected to the skeleton, but they are not considered part of the musculoskeletal system. Examples of these muscles would be the muscles of the digestive tract, muscles along the excretory tract, and the heart muscle.

All muscles contract, and for every muscle that pulls in one direction there is at least one that pulls in the opposite direction. It may appear that there is a pull-push motion that makes us able to bend our arm. We are able to do this because the bicep *pulls* our forearm up and the tricep *pulls* it back to the original position.

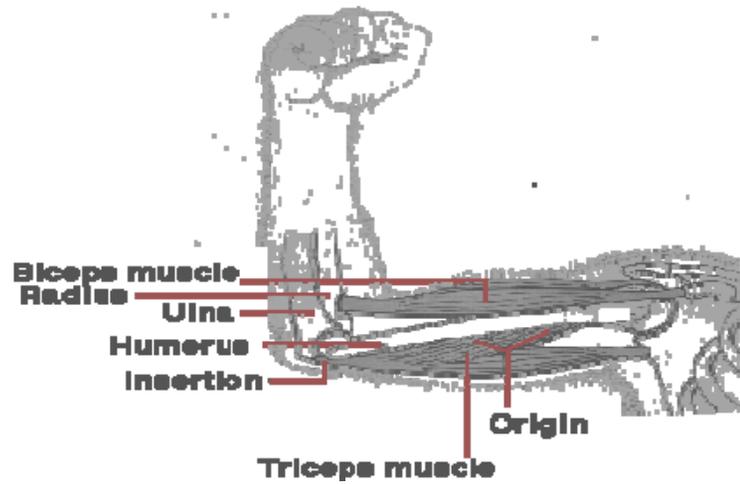
Our muscles produce a great deal of energy and heat and require an adequate blood supply in order to receive oxygen and nutrients. Our skeletons make up our basic frame but our muscles are what determine our strength and agility.

Our joints allow for our movement and are a combination of bone, muscle, tendons, and ligaments. Tendons connect muscle to bone and ligaments connect bone to bone.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Skeletal	<ul style="list-style-type: none"> <li>Structural support of body</li> <li>Blood cell production</li> <li>Calcium storage</li> </ul>	<ul style="list-style-type: none"> <li>Bones</li> <li>Joints</li> </ul>	Leukemia	Anemia, fatigue, fever, and bone and joint pain.	Follow the primary care provider's orders. Consumers tire easily, and daily tasks need to be done based on level of energy. Consumers may require increased assistance with ADL's and/or IADL's. Protect consumers from infections whenever possible.
			<b>DISEASES</b>	<b>SIGNS AND SYMPTOMS</b>	<b>CARE (may include)</b>

			Osteoporosis	<p>Pain, swelling of joints, decreased range of motion of joints, extreme fatigue. Most commonly found in women but, also found in men and persons who have limited mobility and/or are taking seizure medications.</p> <p>Report signs and symptoms to supervisor and/or primary care providers. Protect from falls as bones are brittle and fracture easily.</p>
			<p>Arthritis</p> <p>Rheumatoid Arthritis (most debilitating form of Arthritis and can occur at any age.)</p>	<p>Redness, swelling, inflammation, pain in one or more joints that causes pain and restriction of movement. Debilitation may occur.</p> <p>Good posture and body mechanics are important. Encourage ROM exercises if this has been prescribed. Maintain proper body alignment. Follow the primary care provider's orders for pain management.</p>
			Bursitis	<p>Redness, swelling, Inflammation and pain in connective tissues surrounding the joints.</p> <p>Initially, rest and immobilize the affected part. Heat and analgesics will help. After the acute symptoms have passed, limited ROM will be helpful. If symptoms persist, the consumer should seek medical attention.</p>

# Muscles



• **GENERAL**

• **Smooth Muscle**

Found in the walls of all the hollow organs of the body (except the heart). Its contraction reduces the size of these structures and performs the following:

- Regulates the flow of blood in the arteries,
- Moves your breakfast along through your gastrointestinal tract,
- Expels urine from your urinary bladder,
- Sends babies out into the world from the uterus, and
- Regulates the flow of air through the lungs.

The contraction of smooth muscle is generally not under voluntary control.

• **Skeletal muscle**

As its name implies, it is the muscle attached to the skeleton. The contraction of skeletal muscle is under voluntary control.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>Muscular</b>	<ul style="list-style-type: none"> <li>• <b>Movement of body</b></li> <li>• <b>Flexibility of body</b></li> <li>• <b>Heat Production</b></li> </ul>	<b>Muscles</b>	Sprains, strains	Pain, aches, swelling of the muscle.	Initially, rest and immobilize the affected part. Heat and analgesics as ordered by the primary care provider will help.
			Muscular Dystrophy	Weakness of spinal muscles and a gradual decline of muscle function.	Tasks need to be spaced out to help the client conserve energy. Promote the use of assistive devices. Observe for weakness and decreased endurance

• **Medications Used in Treating Muscular and Skeletal System Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Analgesic (non-narcotic)</b>				
<b>Acetaminophen (or APAP)</b>	Tylenol, Panadol, Tempra, etc.	Relieves pain, reduces fever	Allergic reaction - rash, fever, or difficulty breathing. Yellow eyes or skin.	1. Do not exceed the recommended dosage. <i>Over dosage can cause liver damages.</i>  2. Check the labels of all prescription & nonprescription medication the person takes. If any contain acetaminophen, check with the person's health care professional. (Taking them together may cause an overdose.)
<b>Aspirin</b> other names include  <b>ASA or ECASA</b> (If enteric-coated)	Anacin, Bufferin, Ecotrin, Bufferin, Alka-Seltzer, Zorprin, etc.	1. Relieves pain - used for headache, muscle ache, etc.  2. Reduces inflammation - used for arthritis & other inflammatory conditions  3. Reduces fever  4. Decreases ability of blood to clot - used to prevent heart attacks and strokes	Stomach ulcers - signs include: bloody or black, tarry stools; throwing up blood or material that looks like coffee grounds; stomach pain  Easy bruising/bleeding  Allergic reaction - shortness of breath; wheezing, itching, inflammation inside the nose, swelling of eyelids, face & lips  Stomach Upset - (nausea, indigestion, heartburn)  Ringing in ears, hearing loss  Dizziness, weakness, confusion	1. Take with food or after meals & take with a full glass of water.  2. Do not use if a strong vinegar-like odor is present.  3. Do not crush enteric-coated aspirin.  4. Do not place or dissolve directly on an aching tooth, canker sore, or cold sore. A serious inflammatory reaction could occur.  5. Aspirin should not be used if the person takes blood thinners (Coumadin). Check with physician.
<b>Nonsteroidal Anti-inflammatory Drugs (NSAIDs)</b>				
<b>Ibuprofen</b>	Advil, Motrin, Nuprin, Excedrin, Midol, etc.	1. Relieves pain - used for headache, muscle ache, etc.  2. Also, used to treat the symptoms of PMS and menstrual cramps.  3. Reduces inflammation - used for arthritis & other inflammatory	Stomach ulcers - signs include: bloody or black, tarry stools; throwing up blood or material that looks like coffee grounds; stomach pain Stomach Upset - (nausea, indigestion, heartburn)  Ringing in ears, hearing loss  Allergic reaction (see aspirin above)  Fluid retention/weight gain dizziness, weakness, headache, vision changes.	1. Take with food or after meals & take with a full glass of water. The person should avoid lying down for at least 30 minutes after taking the medicine.  2. May cause sensitivity to sunlight. Use sunscreen and wear protective clothing.

• **Medications Used in Treating Muscular and Skeletal System Disorders continued**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Nonsteroidal Anti-inflammatory Drugs (NSAIDs) continued</b>				
<b>Naproxen Sodium</b>	Naprosyn, Anaprox, Aleve	See Ibuprofen	See Ibuprofen  (also: headache is the most common side effect of Indomethacin)	See Ibuprofen
<b>Indomethacin</b>	Indocin/Indocid	Relieves pain & reduces inflammation used for arthritis, gout, & other inflammatory diseases		
<b>Sulindac</b>	Clinoril, Acin	Relieves pain & reduces inflammation used for arthritis, gout, & other inflammatory diseases		
<b>Diclofenac Potassium or Sodium</b>	Voltaren	Relieves pain; reduces inflammation used for arthritis & other inflammatory diseases.		
<b>Fenoprofen</b>	Nalfon	Relieves pain; reduces inflammation used for arthritis & other inflammatory diseases.		
<b>Narcotic Analgesics</b>				
<b>Morphine Sulfate, Fentanyl, Fentanyl Transdermal System</b>	MS Contin, MSIR, RMS suppositories, Duragesic etc.	Relief of moderate to severe pain	nausea; vomiting; <b>constipation</b> ; dry mouth; drowsiness; hallucinations; cold, clammy skin; itching; rash; flushed face; increased sweating; slowed or troubled breathing; low blood pressure; decreased urination, <b>seizures</b> (especially with meperidine)	1. Narcotic analgesics will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person <b>should not drink alcohol</b> . Over-dosage of narcotics can lead to unconsciousness & death.
<b>Codeine Phosphate or Sulfate</b>	Tylenol with codeine*, etc.	Relief of mild to moderate pain; also suppresses cough		
<b>Hydrocodone Bitartrate &amp; Acetaminophen</b>	Lortab*, Vicodin*, etc.	Relief of mild to moderate pain; also suppresses cough		
				2. Take with food if stomach upset occurs.

• **Medications Used in Treating Muscular and Skeletal System Disorders continued**

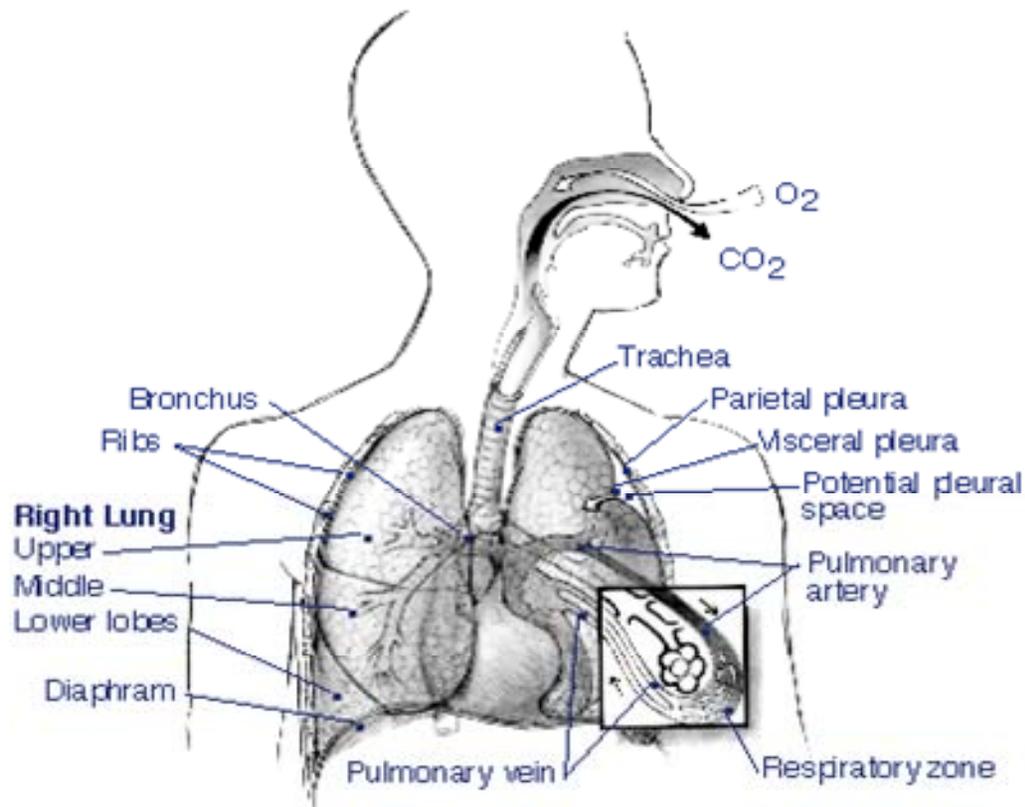
EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Narcotic Analgesics continued</b>				
<b>Oxycodone Hydrochloride</b>	Percocet*, Roxicet*, Tylox*, Oxycontin. Etc.	Relief of moderate to severe pain		
<b>Hydromorphone Hydrochloride</b>	Dilaudid	Relief of moderate to severe pain		
<b>Meperidine Hydrochloride</b>	Demerol, Mepergan Fortis (with Phenergan)	Relief of moderate to severe pain		
<b>Oxycodone Hydrochloride</b>	Percocet*	Relief of moderate to severe pain		
<b>Propoxyphene Hydrochloride</b>	Darvocet*, Darvon *contains acetaminophen	Relief of mild to moderate pain	(also: propoxyphene can cause dark urine and yellow skin & eyes)	
<b>Steroids (oral)</b>				
<b>Prednisone</b>	Deltasone	Used to decrease inflammation associated with arthritis, chronic respiratory problems, allergic reactions, and other inflammatory diseases	See "Medications Used in Treating Endocrine Disorders"	
<b>Prednisolone</b>	Prelone; Delta-Cortef, Hydrocortone			
<b>Methylprednisolone</b>	Medrol			
<b>Dexamethasone</b>	Decadron			
<b>Hydrocortisone</b>	Cortef			
<b>Triamcinolone</b>	Aristacort			
<b>Muscle Relaxants</b>				
<b>Methocarbamol</b>	Robaxin	Treatment of muscle sprains, strains, or spasms	drowsiness, dizziness, flushing of face, nausea, vomiting, rash, nasal congestion	1. <b>All</b> muscle relaxants will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system). People taking these drugs <b>should not drink alcohol</b> .  2. Methocarbamol may cause the person's urine to turn black, brown, or green.
<b>Cyclobenzaprine Hydrochloride</b>	Flexeril	Treatment of acute muscle sprains, strains, or spasms	drowsiness, dizziness,; dry mouth; swelling of face/lips; difficulty in urinating; weakness; ringing in the ears	

• **Medications Used in Treating Muscular and Skeletal System Disorders continued**

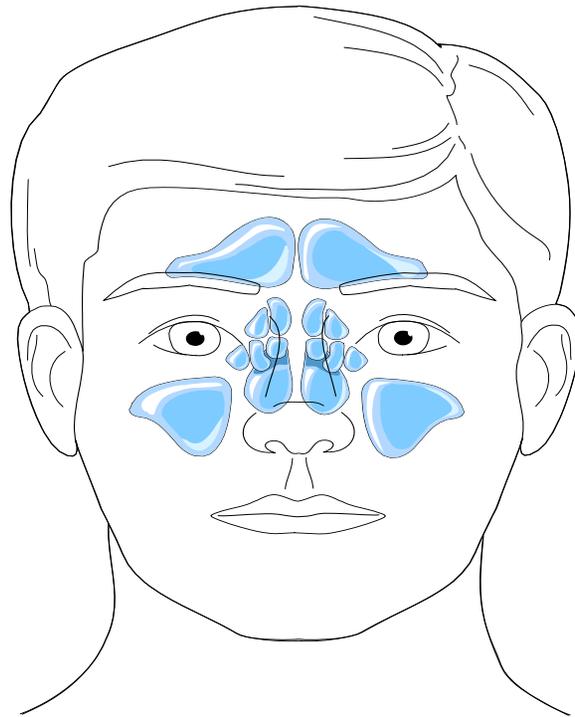
EXAMPLES:	EXAMPLES:	INDICATIONS/USE	MAJOR SIDE EFFECTS	SPECIAL CONSIDERATIONS
-----------	-----------	-----------------	--------------------	------------------------

GENERIC NAME	TRADE NAME		(Does not include all side effects)	
<b>Muscle Relaxants continued</b>				
<b>Diazepam</b>	Valium	Treatment of muscle spasticity	drowsiness; dizziness; low blood pressure; dry mouth; slowed breathing; slurred speech	3. Diazepam - withdrawal symptoms could occur if long-term or high-dose therapy is suddenly stopped. Glucose levels may increase. Give with milk for GI upset.
<b>Baclofen</b>	Lioresal	Treatment of muscle spasticity	drowsiness; dizziness; slurred speech; difficulty sleeping; weakness; frequent or difficult urination; constipation; nausea	4. Baclofen - hallucinations or seizures can occur if therapy is suddenly stopped.
<b>Dantrolene Sodium</b>	Dantrium	Treatment of muscle spasticity	drowsiness; dizziness; weakness; difficulty sleeping; diarrhea; stomach cramps; nausea; slowed breathing	5. Dantrolene - can make skin more sensitive to the sun. Avoid long exposure to sun, use sunscreen, and wear protective clothing.

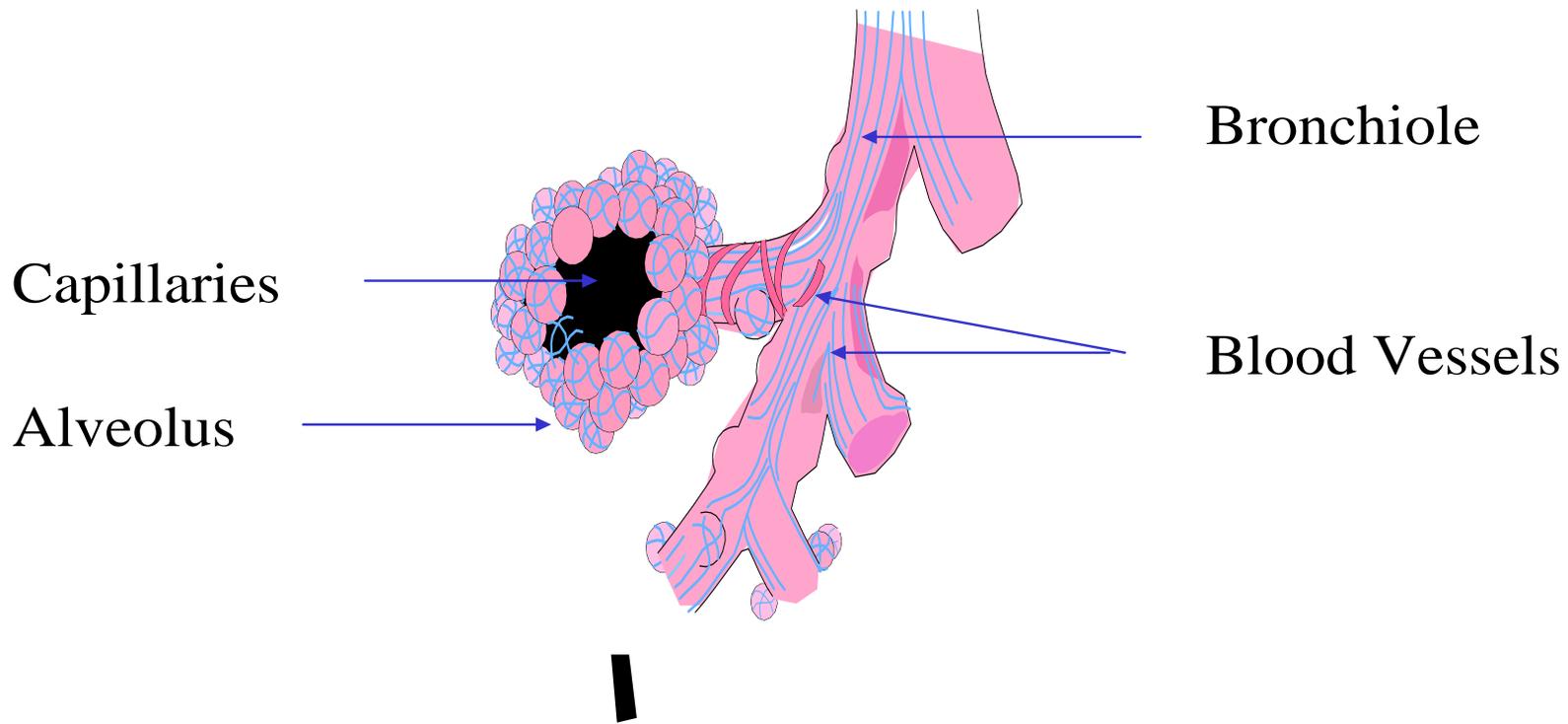
# Respiratory



# Sinuses



# Alveoli



## ◆ The Respiratory System

### GENERAL:

Respiration is the exchange of gases, mostly oxygen and carbon dioxide, between any living organism and its environment. We breathe in approximately 500 cc. of air with each inspiration at a rate of about **12-20** times a minute. This means that our respiratory system moves about 8,000 cc. of air in a minute, about 480,000 cc. in an hour, and 11,520,000 cc. each day! That is approximately 2,880 gallons of air a day!

The primary function of the respiratory system is to deliver oxygen to the body and remove carbon dioxide. Carbon dioxide is produced as the cells burn sugar and oxygen to make energy and must be removed from the body through respiration.

Air exchange begins with the inhalation of oxygen through the nose or mouth but does not actually exchange until reaching the lungs, especially the very distal end of the passages known as alveoli. Medications intended to act on that most distant point would not be effective if they only reach the upper airway. It is at the alveoli level that the blood brings the carbon dioxide back to the lungs from all over the body and exchanges it for fresh oxygen and then transports oxygen back out to the cells via the cardiac system.

**RESPIRATORY SYSTEM (continued)**

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>Respiratory</b>	<b>Oxygen/Carbon Dioxide Exchange between environment and the body</b>	<ul style="list-style-type: none"> <li>• Mouth</li> <li>• Trachea</li> <li>• R Bronchus</li> <li>• L Bronchus</li> <li>• Bronchioles</li> <li>• Alveoli</li> </ul>	COPD/Emphysema/ chronic bronchitis	Shortness of Breath (SOB), wheezing.	Follow primary care provider's orders; oxygen may be needed.
			Asthma	Episodes of Shortness of Breath (SOB) , wheezing or dry cough	Follows primary care provider's orders. Position upright to aide breathing. Pace ADL & IADL activities.
			Bronchitis	Phlegm-producing cough that generally worsens - hoarseness & Shortness of Breath (SOB) may occur.	Encourage clearing of mucous by coughing; Accurate reporting of skin color, breathing rate, color of mucous, productive vs. dry cough.
			Cancer	Chronic cough - blood streaked sputum. Difficulty breathing.	Report signs and symptoms to supervisor and/or primary care provider.
			Tuberculosis	chronic cough, weight loss, coughing up blood, night sweats, extreme fatigue.	Respiratory Isolation techniques must be followed as recommended by the Maine Center for Disease Control and facility/agency policy. Encourage medication compliance.
			<b>Diseases</b>	<b>Signs and Symptoms</b>	<b>Care (may include)</b>
			Cold/flu	Runny nose, sore throat, headache, cough, muscle pain, fever. Infection caused by droplets released by coughs and sneezes.	Good hand washing is critical to prevention of the spread of disease. Encourage fluids. Monitoring temp may be needed. Report ongoing symptoms to primary care provider.
			Pneumonia	Shortness of breath, coughing, wheezing, fever.	Encourage fluids. Monitoring temp may be needed. Follow the instructions of the Primary Care Provider and report ongoing symptoms.

• **Medications used in Treating Respiratory Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Bronchodilators</b>				
<b>Albuterol (Albuterol Sulfate)</b>	Ventolin, Proventil, Proventil Repetabs	These medicines make breathing easier by widening the breathing passages of the lungs. Used for the treatment of asthma, chronic bronchitis & other lung diseases.	fast heart rate; heart palpitations; flushing of face; nausea; stomach upset; dry mouth; coughing; nervousness; hyperactivity; headache; difficulty sleeping; dizziness; tremor; sweating; difficulty urinating; mental status changes	<ol style="list-style-type: none"> <li><b>Aerosol:</b> Shake well before each use. Do not spray in eyes. If the dose requires more than 1 inhalation (puff), wait at least 1 minute between inhalations. Follow specific instructions that accompany the inhaler.</li> <li><b>Tablets:</b> Do not crush extended-release tablets or Repetabs. The tablet form of albuterol is more likely to cause side effects than the aerosol.</li> <li>Serevent is used for long-term treatment of asthma, <u>not for acute attacks</u>. The person should have an albuterol or other short-acting bronchodilator inhaler for sudden breathing problems.</li> <li>If the person has also been prescribed a steroid or ipratropium inhaler, the bronchodilator should be used first. This will help the steroid or ipratropium to reach the air passages.</li> <li>Contact the primary care provider if the person does not get the usual relief from their normal dose.</li> </ol>
<b>Pirbuterol Acetate</b>	Maxair			
<b>Terbutaline</b>	Brethaire, Brethine			
<b>Salmeterol Xinafoate</b>	Serevent	Short-acting drugs in this class, usually albuterol, are also used for sudden breathing problems (acute attacks).		
<b>Theophylline</b>	Theo-Dur, Theo-24, Uniphyll, Slo-Phyllin etc.	Bronchodilator used for long-term treatment of asthma, chronic bronchitis & other lung diseases.	High levels can cause: nausea/vomiting; diarrhea; stomach pain; tremor; nervousness; headache; agitation; difficulty sleeping; fast heart rate and seizures	<ol style="list-style-type: none"> <li>Avoid large amounts of caffeine-containing food (chocolate) or beverages (tea, coffee, cola). These may increase the side effects of theophylline.</li> <li>Don not crush or chew extended-release tablets. Sprinkle capsules may be opened and the contents (beads) sprinkled on a</li> </ol>

• **Medications used in Treating Respiratory Disorders continued**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Bronchodilators continued</b>				
<b>Theophylline continued</b>				
Ipratropium Bromide/Albuterol	Combivent	Bronchodilator used for long-term treatment of asthma, chronic bronchitis & other lung diseases.	fast heart rate; heart palpitations; flushing of face; nausea; stomach upset; dry mouth; coughing; nervousness; hyperactivity; headache; difficulty sleeping; dizziness; tremor; sweating; difficulty urinating; mental status changes	small amount of food (such as applesauce); do not chew the beads. 3. Notify the primary care provider if the person shows symptoms of high levels. Observe the person carefully for these symptoms when starting new medications or stopping old medications (theophylline interacts with many drugs).  Avoid getting medication in eyes, may cause blurred vision and eye damage.  Shake well before using. Should wait at least 2 minutes between puffs. Have consumer rinse mouth after use. Wait 5 minutes between inhalers.
Salmeterol/Fluticasone	Advair	Bronchodilator used for long-term treatment of asthma, chronic bronchitis & other lung diseases.	fast heart rate; heart palpitations; flushing of face; nausea; stomach upset; dry mouth; coughing; nervousness; hyperactivity; headache; difficulty sleeping; dizziness; tremor; sweating; difficulty urinating; mental status changes	Avoid getting medication in eyes, may cause blurred vision and eye damage. Discard after 1 month if opened. Shake well before using. Should wait at least 2 minutes between puffs. Have consumer rinse mouth after use. Do not tip canister during administration. Keep canister flat in palm with label facing up.
<b>Anticholinergic Agents</b>				
Ipratropium Bromide	Atrovent	Ipratropium makes breathing easier by widening the breathing passages of the lungs. Used for the long-term treatment if chronic bronchitis and other lung diseases. <u>It is not used for emergencies.</u>	dry mouth; nausea; stomach upset; cough; nervousness; dizziness; headache; blurred vision; difficulty sleeping; trembling; difficulty urinating; heart palpitations	1. Ipratropium can cause blurred vision if it is sprayed in the eye. The person should close their eyes while the treatment is being given. 2. Shake the canister well before use. Follow the specific instructions that accompany the inhaler.

• **Medications used in Treating Respiratory Disorders continued**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)
<b>Anti-Inflammatory Agents</b>			
<b>Beclomethasone Dipropionate</b>	Vanceril, Beclovent, (oral inhalers); Beconase AQ; Vancenase AQ (nasal aerosol)	These medicines decrease inflammation. Uses: <b>Oral inhalation:</b> long-term treatment of asthma ( <u>not used for asthma attacks</u> ) <b>Nasal aerosol:</b> treatment of allergy	<b>Oral:</b> creamy, white, curd-like patches in the mouth or throat &/or pain when eating or swallowing (sign of infection); cough; hoarseness; dry mouth; nausea; headache. <b>Nasal:</b> burning or stinging inside the
<b>Triamcinolone</b>	Azmacort (oral); Nasacort AQ (nasal)	symptoms including itching, runny nose, nasal congestion & sneezing.	nose; nosebleeds, sores inside nose; dry nose; sore throat; white patches in nose/throat; sneezing.
<b>Flunisolide</b>	AeroBid (oral); Nasalide (nasal)		
<b>Cromolyn Sodium</b>	Intal (oral) Nasal crom (nasal)	Cromolyn is used to <u>prevent</u> asthma (oral inhaler) or allergy symptoms (nasal aerosol); it is <u>not</u> used to treat asthma attacks.	<b>Oral:</b> unpleasant taste; coughing; hoarseness; dry mouth; throat irritation' allergic reaction (swelling of lips, eyelids, or face; wheezing; trouble swallowing). <b>Nasal:</b> sneezing; nose irritation/burning; nosebleeds; allergic reaction.
<b>Antihistamines</b>			
<b>Diphenhydramine Hydrochloride</b>	Benadryl, Nytol, etc.	Used for allergies, allergic reactions, and cold symptoms (sneezing, watery eyes, runny nose, etc).	
<b>Chlorpheniramine Maleate</b>	Chlor-Trimeton	Diphenhydramine is also used to treat the symptoms of Parkinson's Disease, the side effects of anti-psychotic drugs & as a nighttime sleep aid.	
<b>Cyproheptadine Hydrochloride</b>	Periactin	Cyproheptadine is also used as an appetite stimulant.	
			1. <b>Oral:</b> shake well before each use. Follow the specific instructions that accompany the inhaler. The person should rinse their mouth with water (& spit it out) after using the inhaler. This helps prevent infections and throat irritation. 2. <b>Nasal:</b> shake well before each use. The person should blow their nose before using the aerosol. Follow the specific instructions that accompany the aerosol. 3. <b>Oral or Nasal:</b> Notify the primary care provider if the person has sores or white patches in the nose or mouth. 1. <b>Oral:</b> shake well before each use. Follow the specific instructions that accompany the inhaler. 2. <b>Nasal:</b> shake well before each use. The person should blow their nose before using the aerosol. Follow the specific instructions that accompany the aerosol. These drugs will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). <b>Person should not drink alcohol.</b>

• **Medications used in Treating Respiratory Disorders continued**

EXAMPLES:	EXAMPLES:	INDICATIONS/USE	MAJOR SIDE EFFECTS	EXAMPLES:
GENERIC NAME	TRADE NAME		(Does not include all side effects)	GENERIC NAME
<b>Antihistamines continued</b>				
Loratadine	Claritan	Used for the relief of seasonal allergy symptoms.	drowsiness; headache; dry mouth; stomach upset; anxiety; fast heart rate	These medications cause less drowsiness than older antihistamines (see above). However, they could add to the effect of alcohol & other CNS depressants.
Fexofenadine	Allegra		drowsiness; stomach upset; menstrual cramps	
<b>Cough/Cold Drugs</b>				
Guaifenesin	Robitussin	Thins respiratory tract mucus so that it can be coughed up.	nausea; vomiting; drowsiness; headache; rash	Drink a glass of water or other fluid with each dose. Good fluid intake helps to thin respiratory tract mucus.
Dextromethorphan Hydrobromide	Benylin DM, Robitussin DM*	Dextromethorphan is used to suppress nonproductive cough (no mucus production) associated with cold or allergy.	drowsiness; dizziness; stomach upset; constipation	Dextromethorphan may interact with some drugs (such as anti-depressants & meperidine) to cause confusion, tremor, agitation, unsteadiness, fever, sweating, & diarrhea. Notify the primary care provider if these adverse effects occur.
Pseudoephedrine Hydrochloride	Sudafed	Relieves nasal congestion due to colds, allergies, or sinus infections	fast heart rate; heart palpitations; increased blood pressure; nervousness; dizziness; headache; difficulty sleeping; sweating; difficult urination	1. Do not crush sustained-release product. 2. Usually used for short-term treatment (3 - 5 days).
Phenylephrine Hydrochloride	Neo-Synephrine	These are nasal sprays that relieve	burning or stinging in the nose; dry nose;	These drugs should not be used for longer
Oxymetazoline Hydrochloride	Afrin	nasal congestion due to colds, allergies or sinus infections.	sneezing; rebound nasal congestion with prolonged use; tremor; heart palpitations; nervousness	than 3- 5 days. Long-term use can cause rebound congestion to occur when the dose wears off.

THIS PAGE LEFT INTENTIONALLY BLANK FOR FORMATTING PURPOSES.

PLEASE USE AS A “NOTES” PAGE.

## ◆ Administration of Nose Drops/Sprays

---

Typical medications for the nose will include drops used to treat temporary disorders affecting the nasal mucous membrane or sprays that are absorbed by the nasal mucous membrane.

### • Administration Technique

---

#### 1. Equipment

- a. Gloves
- b. Prescribed medication, drops or spray
- c. Manufacturer's dropper
- d. Tissue

#### 2. Technique

- a. Wash hands and assemble equipment.
- b. Remember the EIGHT RIGHTS.
- c. Provide for the person's privacy and explain the procedure.
- d. Have the person gently blow his/her nose.
- e. Don gloves.
- f. For:  
DROPS – have the person position his/her head upward. Draw prescribed amount and instill number of drops prescribed. Do not touch the dropper to the nose. Have the person remain in this position for 2-3 minutes.  
  
SPRAY – Have the person sit upright and block one nostril. Shake the solution and immediately insert tip into nostril. Ask the person to inhale through nose and then squeeze spray at the same time. Only blow nose if necessary.
- g. Clean area and wash hands.

## ◆ Administration of Inhalant Medications

---

This is the most difficult means of administration – especially for the elderly and children. The medications administered as an inhalant include nebulae or aerosols.

### • Administration Technique

---

#### 1. Equipment:

- a. Disposable gloves.
- b. Prescribed medication.

#### 2. Technique:

- a. Wash hands.
- b. Remember the EIGHT RIGHTS.
- c. Read the label for specific instructions. Below are general guidelines:
  - i) Provide privacy and explain the procedure to the person.
  - ii) Ask the person to get comfortable and put on gloves.
  - iii) Shake the container to mix medication. (Read the label)
  - iv) Have the person take several deep breaths through the mouth.
  - v) Place mouthpiece into mouth and ask the person to purse lips tightly around it.
  - vi) Administer one puff as the person inhales deeply.
  - vii) Ask the person to hold their breath as long as they can.
  - viii) If a second dose is needed, allow the person to take several deep breaths in between doses. Be sure to wait the time specified on the package.
  - ix) Clean mouthpiece of inhaler with warm water and wash hands.
  - x) Have person rinse mouth after medication is administered, if indicated to do so.

Review this procedure with the person before administering inhalers.

## ◆ Nebulizers

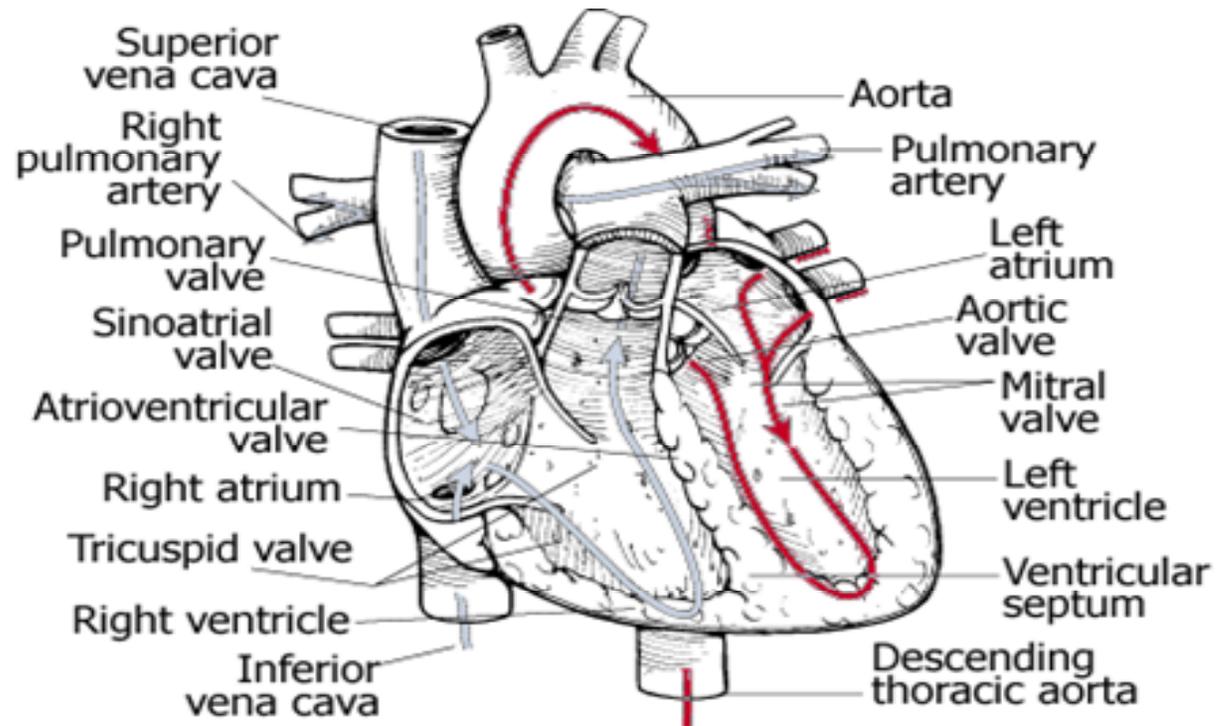
---

Maine's revised regulations address the issue of nebulizers and other breathing apparatus. They are beyond the scope of this course and your agency will teach you this procedure.

THIS PAGE INTENTIONALLY LEFT BLANK FOR FORMATTING PURPOSES.

PLEASE USE AS A “NOTES” PAGE.

# Cardiovascular



## THE CARDIOVASCULAR SYSTEM

### GENERAL:

Cardiovascular disease continues to be the leading cause of death in the United States. No body system wears out, breaks down, or malfunctions as often or in so many different people as does the cardiovascular system. Therefore, your ability to accurately observe and report concerns about this system is critical as you administer medications. There are three essential components to this system:

1. The *heart* acts as the pump.
2. The *vessels* serve as the pipes or transport pathways.
3. The *blood* represents the fluid in the system.

### • The Heart

The average heart pumps about 5 quarts of blood a minute. That is about 75 gallons per hour. That is enough to fill the standard home heating oil drum *every 3 hours*. In addition to pumping all that blood, it also maintains the pressure necessary to carry the blood to all the tissues of the body. The vessels that carry blood through the body are divided into arteries and veins. There is almost a duplicate system of vessels:

1. The *arteries*, carrying blood from the heart to the tissue.
2. The *veins*, carrying blood back from the tissues to the heart.

The arteries are typically deeper in the body and not as easily seen from the surface. The veins by contrast are closer to the surface and can be seen on most people. The combined function of the “*pump*” and “*pipng*” make this system one of the most fascinating systems in the body.

The heart can perform its function as a result of two separate activities. It has an **electrical stimulation activity** that sets the electrical charges necessary for the muscle to contract 60-100 times a minute. This is known as the **SA Node**. That is the rate and rhythm we palpate for when we take a pulse. It is also this electrical energy that the electrocardiogram measures. Some

medications you will be administering have a profound effect on the electrical activity of the heart.

The other activity is **the actual pumping of the blood**. This is the result of **sequential contraction** of the heart muscle itself. Although it is the same organ and the same muscle, it actually contracts at different times in different places all in a sequence that allows blood to move in only one direction.

- ***Cardiac Blood Flow (FYI)***

Blood returning from all over the body returns to the heart through the **vena cava** and enters the heart through the **right atrium**. It is then actually pumped by contraction of the muscle of the right atrium through the **tricuspid valve** into the **right ventricle**. From the right ventricle it is pumped by a sequential beat of the ventricle muscle through the **pulmonary valve** into the **pulmonary artery**. This is the only artery in the body that carries de-oxygenated blood, but because it is leaving the heart it is referred to as an artery. The blood in this vessel travels to the lungs where it exchanges carbon dioxide for fresh oxygen. The blood returns through the **pulmonary vein**, the only vein in the body that carries oxygenated blood. The blood re-enters the heart through the **left atrium** and is then pumped through the **mitral valve** into the **left ventricle**. The left ventricle is the real work horse of the heart, and it pumps the blood out through the **aortic valve**, through the **aorta**, and out to the entire system.

As the blood leaves through the aorta, there are arteries that branch off and feed the cardiac muscle the fresh oxygenated blood it needs. These are the vessels that are referred to in discussions about “**by-pass**” surgery.

- **Circulatory Vessels**

There are three distinct divisions in the circulatory system:

- 1. Arteries**
- 2. Capillaries**
- 3. Veins**

As the blood leaves the heart, it passes through the aorta, which is a thick muscle-walled vessel that pulsates with each contraction of the heart. The aorta divides almost as soon as it leaves the heart into the ascending and descending aorta. The ascending aorta divides again and feeds the brain, chest, and arms, while the blood in the descending aorta begins its course through the organs of the abdomen and on to the tissues of the lower extremities. At the smallest division of each artery the blood continues under pressure from each beat of the heart to the level of the capillaries.

The capillaries are so small that red blood cells actually pass through these vessels one after another. It is here that the whole purpose of the circulatory system is met:

- The exchange of carbon dioxide and oxygen,
- The delivery of nutrients, and
- The removal of waste at the cellular level.

The capillaries are so small they effectively reduce the blood pressure to the point that as the blood leaves the capillaries it no longer has any pulse wave left from cardiac contracting. The blood then enters the smallest of veins and begins its journey back to the heart.

The walls of the veins are not as muscular as the arteries, and veins are under much less pressure. Because there is a lower pressure, the veins have valves that keep the blood from flowing backward or pooling in the legs and arms. Veins are typically much closer to the body surface and can easily be seen in most people. The larger veins that deliver the blood back to the heart are also deep within the body, which offers them protection from trauma by the musculoskeletal system.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
--------	----------	--------	----------	--------------------	--------------------

			Angina	Shortness of breath, pale-blue tinged skin.	Encourage rest periods and pacing activities. Positioning upright for breathing
			High Blood Pressure (HTN = hypertension)	Irregular pulse or increased pulse, chest pain. Swelling in lower legs, dizziness.	Assist with ADLs/IADLs. Follow low salt diet restrictions,
			Heart attack (Myocardial Infarct)	Prolonged heavy pressure or squeezing pain in the chest behind the sternum. Pain may spread to left shoulder or down the left arm.	Prompt diagnosis within the first few hours following the attack. Call 911 and your supervisor immediately!
			Peripheral vascular disease	Legs may swell. Consumers have decreased sensation and difficulty healing open areas on the legs and feet.	Encourage consumers to elevate their feet - consumers should be encouraged not to cross their ankles. Follow primary care provider's orders.
			Blood diseases (HIV/AIDS)	In the beginning stages of HIV, consumers may have no symptoms. In the late stages of AIDS, consumers experience weight loss, night sweats, fever, diarrhea and skin lesions. Loss of resistance to infections and some cancers	Spreads by sexual intercourse or infected blood. Use strict Universal Precautions. Primary care provider will prescribe a drug therapy plan.
			Congestive Heart Failure	Blue tinged skin, tires easily, periods of breathlessness, edema	Monitor vital signs for increased pulse and respirations. Input/Output and weight should be monitored.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Cardiovascular (cont'd)			Phlebitis	Inflammation of the vein, pain and tenderness along the vein, swelling and edema at the site.	Report signs and symptoms to supervisor. Follow primary care provider's orders. Encourage rest, elevation of the affected limb, and anti-embolic stockings if prescribed.
			Congenital Heart Defects (conditions the person is born with) VSD – Ventricular Septal Defect. Coarctation of the Aorta Tetrology of Fallot (Blue Baby) Incompetent Valve(s)	Cyanosis Clubbing of the fingers Shortness of Breath (SOB) Fatigue Lack of normal growth Abnormal vital signs	Usually requires surgical intervention(s). Follow primary care provider's orders. Assistance with ADL's and IADL's as needed/required. Emotional support.
			Anemias Sickle cell Iron deficiency Thalessemia Pernicious Child birth Hemorrhagic	Fatigue, tired, pale washed out appearance, abnormal blood tests. Bruising easily.	Follow primary care provider's orders. If taking iron be aware that it may stain/decay teeth. May also cause constipation.  Encourage eating foods high in iron.

As we age, the heart slows down. The arteries begin to lose their elasticity and become hard. Due to loss of skeletal muscle tone, the veins do not return blood to the heart as readily as when we are younger.

• **Medications used in Treating Cardiovascular Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Antihypertensive Drugs (drugs that lower blood pressure)</b>				
<b>Atenolol</b>	Tenormin	This group of medicines is known as "beta blockers".	tiredness, dizziness, depression, confusion, weakness, slow heart rate,	1. These medicines should not be stopped suddenly (can cause withdrawal symptoms such as sweating, pounding heart beat, & headache; could worsen chest pain or cause heart attack).  2. In diabetics, these drugs can mask the signs of low blood sugar (such as fast heart rate) and change blood sugar levels.
<b>Metoprolol Tartrate</b>	Lopressor	These medicines are used to treat high blood pressure & abnormal heart rhythms and to prevent heart attacks.	wheezing or shortness of breath, stomach upset, diarrhea, dry mouth, itching/rash	
<b>Propranolol Hydrochloride</b>	Inderal	Propranolol is also used for some psychiatric disorders, migraine headaches, and tremors.		
<b>Nifedipine</b>	Procardia, Procardia XL	This group of medicines is known as "calcium channel blockers". These	slow heart rate; heart palpitations; swelling of legs or feet; flushing;	1. Do not crush sustained-release drugs such as Procardia XL, Cardizem CD, or Calan SR. 2. These medicines should not be stopped suddenly (could cause chest pain)  3. Good dental hygiene is very important to prevent overgrowth of gum tissue. 4. If the person is taking Procardia XL, an empty tablet may be seen in the stool; this is no cause for concern.
<b>Diltiazem Hydrochloride</b>	Cardizem, Cardizem CD, Dilacor, etc.	medicines are used to treat high blood pressure and control chest pain.	dizziness; nausea; constipation; muscle cramps; overgrowth of gums	
<b>Verapamil Hydrochloride</b>	Calan, Isoptin, etc.			
<b>Amlodipine Besylate</b>	Norvasc			
<b>Lisinopril</b>	Prinivil, Zestril	This group of medicines is known as "ACE inhibitors". These medicines	cough; dizziness; lightheadedness, or fainting, especially when rising too quickly from a seated or lying position;	1. Notify primary care provider immediately if person has swelling of face, lips, or tongue or has difficulty breathing.  2. Do not use salt substitutes (potassium) without the primary care provider's advice.
<b>Benazepril Hydrochloride</b>	Lotensin	are		
<b>Fosinopril Sodium</b>	Monopril	used to treat high blood pressure		
<b>Quinapril Hydrochloride</b>	Accupril	and heart failure	rash; headache; stomach upset; diarrhea; high potassium level (signs: confusion, tingling or numbness of hands or feet, weakness, irregular heartbeat, shortness of breath)	
<b>Prazosin Hydrochloride</b>	Minipress	This group of medicines is known as	dizziness, lightheadedness, or fainting	Dizziness or fainting is more likely to occur

• **Medications used in Treating Cardiovascular Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Antihypertensive Drugs (drugs that lower blood pressure) continued</b>				
<b>Terazosin Hydrochloride</b>	Hytrin	"alpha blockers" & is used to treat high blood pressure. These medicines are used to treat men with enlarged prostates.	when rising too quickly from a seated or lying position; drowsiness; weakness; headache; swelling of feet or lower legs; irregular of pounding heart beat	after the first dose. The first dose is usually given at bedtime to prevent problems. However, dizziness can occur after any dose, so the person should get up slowly. Do not stop this medication suddenly.
<b>Labetalol Hydrochloride</b>	Normodyne	Used to treat high blood pressure	dizziness, lightheadedness, or fainting when rising too quickly from a seated or lying position; swelling of legs/feet; upset stomach; wheezing or trouble breathing; tiredness; dizziness; headache; rash; scalp tingling	1. Dizziness or fainting is more likely to occur after the first dose or after dosage increases. The person should get up slowly from a seated pr lying position. 2. In diabetics, labetalol can mask the signs of low blood sugar (such as fast heart rate) and change blood sugar levels. 3. Labetalol should not be stopped suddenly.
<b>Clonidine Hydrochloride</b>	Catapres	Used to treat high blood pressure; has also been used for some psychiatric disorders such as Attention Deficit Disorder and Tourette's Syndrome.	dizziness, lightheadedness, or fainting when rising too quickly from a seated or lying position; drowsiness; confusion; depression; headache; weakness; swelling of feet or legs; dry mouth; constipation; nausea	1. Clonidine should not be stopped abruptly. This can cause a rapid increase in blood pressure. 2. If the person is using Catapres Transdermal patch, apply it to hairless area of skin on upper arm or chest. Every 7 days, the old patch is removed and a new patch is applied-use a different skin site from the previous application. The patch should stay in place even during showering, bathing, or swimming. If the patch becomes loose, cover it with the adhesive overlay that is provided. For additional information, see package insert.
<b>Hydralazine Hydrochloride</b>	Apresoline	Used to treat high blood pressure & heart failure	heart palpitation; redness of flushing of face; fast heart rate; headache; nausea/vomiting; constipation; muscle or joint aches; rash; numbness or tingling in the hands or feet	May cause dizziness, lightheadedness, or fainting when rising too quickly from a seated pr lying position.

• **Medications used in Treating Cardiovascular Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Antihypertensive Drugs (drugs that lower blood pressure) continued</b>				
<b>Methyldopa Hydrochloride</b>	Aldomet	Used to treat high blood pressure	dizziness, lightheadedness, or fainting  When rising too quickly from a seated or lying position; swelling of legs/feet; Drowsiness; depression; tiredness; headache; fever; dry mouth; upset stomach; trouble breathing; swelling of breasts	1. May cause urine to become dark. 2. Notify primary care provider if person has prolonged fever or tiredness, or if their skin yellows. 3. Do not stop this medication suddenly. 4. Weigh daily. 5. Give at Bed time, causes drowsiness.
<b>Diuretics also known as “water pills”</b>				
<b>Furosemide</b>	Lasix	Used to treat high blood pressure by causing increased elimination of water and sodium; also used to decrease fluid retention due to heart, liver, or kidney disease.	dizziness, lightheadedness, or fainting when rising too quickly from a seated or lying position; <u>low</u> potassium level (symptoms: mental changes, muscle Cramps, weakness, nausea, irregular Heartbeat); increased thirst; rash	1. Furosemide can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing, & wear sun block lip balm. 2. May affect blood sugar level in diabetics. 3. Increases urination, so dose should be scheduled early in the day to avoid disruption of sleep.
<b>Hydrochlorothiazide (HCTZ)</b>	Hydrodiuril	Used for high blood pressure & fluid retention in heart and kidney disease.	See Furosemide	See Furosemide
<b>Triamterene &amp; Hydrochlorothiazide</b>	Dyazide, Maxide	Used for high blood pressure & fluid retention in heart and kidney disease.	nausea; stomach cramps; diarrhea; Increased thirst; <u>high</u> potassium level (signs: confusion, tingling or numbness Of hands feet, weakness, irregular heartbeat, shortness of breath); rash	See Furosemide. Also, avoid salt substitutes & large amounts of potassium and magnesium rich food.

• **Medications used in Treating Cardiovascular Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Diuretics also known as “water pills” continued</b>				
<b>Spironolactone</b>	Aldactone	Used for high blood pressure & fluid retention in liver disease.	high potassium level (signs: confusion, tingling or numbness of hands or feet, weakness, irregular heartbeat, shortness of breath); dizziness; breast tenderness & increased hair growth in females; breast enlargement in males; increased thirst; diarrhea; nausea; sweating	1. Take with food to prevent stomach upset. 2. Avoid salt substitutes & large amounts of potassium-rich food.
<b>Cardiotonics</b>				
<b>Digoxin</b>	Lanoxin	Used to treat heart failure & some abnormal heart rhythms.	<u>Signs of high digoxin level:</u> nausea; vomiting; visual disturbances (see halos, yellow or green spots, flashing lights), weakness; dizziness; headache; drowsiness; disorientation; hallucinations; irregular heartbeat.	1. Notify primary care provider immediately if person shows signs of high digoxin level  2. The person should take his medicine at generally the same time each day, usually in the morning.  3. A pulse, preferably apical, should be taken prior to receiving or administration of this med. It should be documented on MAR by staff with every med pass.
<b>Antiarrhythmics</b>				
<b>Disopyramide Phosphate</b>	Norpace	Used to treat abnormal heart rhythms	difficulty urinating; dry eyes,nose,mouth; constipation; nausea; weakness; dizziness or fainting when rising too quickly from a seated position; swelling of feet or legs; chest pain	1. Do not break or chew sustained-release products. 2. This medicine should not be stopped suddenly; this could cause a serious change in heart function. 3. This drug may cause low blood sugar in some people; watch for signs: chills, unsteady walk, cold sweats, confusion, shakiness, anxiety.

• **Medications used in Treating Cardiovascular Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Antiarrhythmics continued</b>				
<b>Procainamide Hydrochloride</b>	Pronestyl, Procanbid		nausea; diarrhea; dizziness; fainting; fever; chills; joint pain or swelling; rash	1. See numbers 1 & 2 above. 2. Extended-release tablet may be seen in the stool. This is normal & no cause for concern. 3. Notify primary care provider if person has sore mouth, gums or throat or if they have symptoms of a respiratory tract infection.
<b>Propafenone</b>	Rythmol		dizziness; drowsiness; headache; constipation; stomach upset; abnormal taste; heart palpitations; chest pain	1. This medicine should not be stopped suddenly; this could cause a serious change in heart function. 2. Notify primary care provider of sore throat, unusual bleeding or bruising, or extreme tiredness.
<b>Quinidine</b>	Quinaglute Gluconate, Quinidex Sulfate		diarrhea; nausea; stomach cramps; bitter taste; headache; dizziness; fainting; ringing in the ears; rash	1. Do not break or chew sustained-release products. 2. Take with food. 3. This medicine should not be stopped suddenly; this could cause a serious change in heart function. 4. Notify primary care provider of rash, unusual bleeding or bruising, ringing in ears, or fainting.

•  
•  
•  
•  
•

## Medications used in Treating Cardiovascular Disorders (continued)

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Nitrates (Nitroglycerin)</b>				
<b>Nitroglycerin (Glyceryl Trinitrate)</b>	Nitro, NitroDur, NitroBid, Nitrostat, etc.	Used to prevent or treat chest pain (called "angina").	dizziness, lightheadedness, or fainting, especially when rising too quickly from a seated or lying position; headaches; blurred vision; dry mouth; flushing	1. Take the oral form on an empty stomach. Do not crush or chew extended-release dosage forms. 2. Do not chew or swallow sublingual tablets. 3. Topical ointment-Use the dose measuring papers to measure the length of ointment to the skin. Apply to a non-hairy area of chest or back. Do not rub or massage the ointment into the skin; just spread a thin, even layer.
				See package insert for further information. 4. Patch-apply it to hairless area of skin on upper arm or chest; remove the old patch before applying a new one; change at least daily (usually left on 12-14 hours & then taken off); follow primary care provider's instructions and package insert.
				5. The patch (both new & used) is extremely toxic if ingested. After removing a used patch, fold it in half with the sticky sides together. Dispose of it where no one can get it. The patch form should generally be avoided

in people with Pica (consuming inedible substances).

The typical procedure for the administration of Nitroglycerin Tablets sublingually is:

Take the blood pressure, give one tablet every 5 minutes for up to 15 minutes if the pain persists. Be sure to take the B/P prior to the administration of each tablet. If the chest pain is not relieved after 2 tablets, 911 should be called.

• **Medications used in Treating Cardiovascular Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Anticoagulants (also known as "blood thinners")</b>				
<b>Warfarin Sodium</b>	Coumadin	Used to prevent blood clots; also used to prevent strokes and heart attacks	<b>Signs of bleeding inside the body:</b> black, tarry stools; blood in the stool; pink or red urine; vomiting blood; vomit that looks like coffee grounds; abdominal pain; severe headache; joint pain; fainting; dizziness; shortness of breath. Can also see: bleeding gums; excessive menstrual bleeding; nosebleeds; bruising. <b>Other adverse effects:</b> nausea; vomiting; diarrhea; hair loss; purple discoloration of toes; purple/black areas or skin breakdown on buttocks, thighs, breasts or stomach.	1. Notify primary care provider immediately if person shows any signs of bleeding or experiences falls, injuries, or blows to the head or body. 2. Foods high in Vitamin K can decrease the effectiveness if warfarin. A balanced diet with a consistent intake of Vitamin K is essential; avoid large amounts of liver and leafy green vegetables (turnip greens, broccoli, spinach, asparagus etc.). Do not change diet once stable on warfarin therapy. 3. Routine lab testing is extremely important. 4. Use special care in toothbrushing & shaving. Use a soft toothbrush. Use an electric razor rather than a blade, if possible. 5. Be prepared for multiple dosages as the dose us driven by blood tests. 6. Avoid alcohol and aspirin. Warfarin has many other drug interactions. Check with the primary care provider who monitors the warfarin therapy before starting or stopping any medication

• **Medications used in Treating Cardiovascular Disorders (continued)**

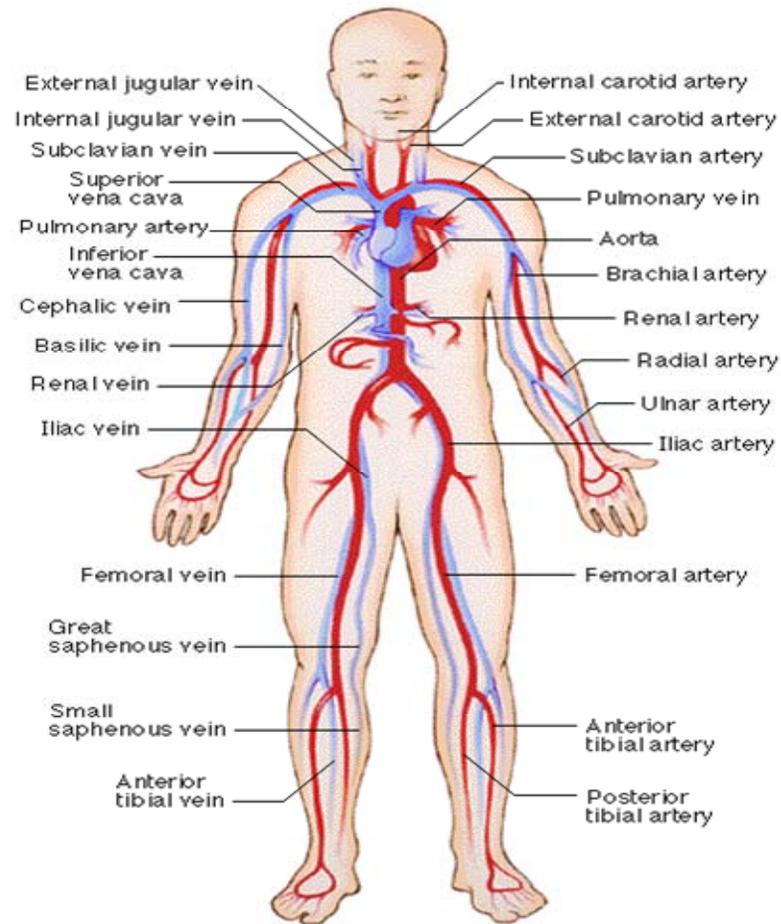
EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider. 2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider. 4. Routine blood pressure monitoring is important for people on these drugs.				
<b>Anticoagulants (also known as "blood thinners") continued</b>				
<b>Aspirin, Acetyl Salicylic Acid (ASA)</b>	Anacin, Ecotrin etc.	See "Medications Used in Treating Muscular and Skeletal System Disorders"		
<b>Antihyperlipidemic Drugs (Cholesterol-Lowering Drugs)</b>				
These drugs are most effective when used with a diet that is low in cholesterol and fat. Follow the diet that the primary care provider prescribes				
<b>Cholestyramine</b>	Questran	Used to lower cholesterol; also used for some gastrointestinal conditions. It binds to certain substances in the gut. Since cholestyramine is not absorbed, these substances also pass out of the body without being absorbed.	constipation; nausea; vomiting; indigestion; gas; stomach pain; black, tarry stools; burnt smell to urine	1. This medicine should never be taken in its dry form, since it could cause the person to choke. Mix the powder with 4-6 ounces of water or juice. The powder may also be mixed with milk in breakfast cereals, with thin soups, or with pulpy fruit (such as applesauce). 2. The person should drink plenty of fluid throughout the day to prevent constipation. 3. This drug may interfere with the absorption of other medicines. Generally take other medications either 1 hour before or 4-6 hours after the cholestyramine.
<b>Fluvastatin Sodium</b>	Lescol	Lowers cholesterol by blocking an enzyme that is needed by the body to make cholesterol.	indigestion; nausea; diarrhea; stomach pain; gas; headache; back pain; Muscle pain; joint pain	1. Notify the primary care provider of unexplained muscle pain, tenderness, or weakness, especially if accompanied by fever or general discomfort.  2. Dose is usually given in the evening.
<b>Lovastatin Mevinolin</b>	Mevacor			
<b>Pravastatin Sodium</b>	Pravachol			
<b>Simvastatin Synvinolin</b>	Zocor, Lipex			
<b>Gemfibrozil</b>	Lopid	Used to lower cholesterol & triglycerides.	indigestion; stomach pain; diarrhea; Nausea; tiredness; dizziness	1. Notify the primary care provider of unexplained muscle pain, tenderness, or weakness, especially if accompanied by fever or general discomfort

• **Medication used to Treat Cardiovascular Disorders (continued)**

EXAMPLES:	EXAMPLES:	INDICATIONS/USE	MAJOR SIDE EFFECTS	SPECIAL CONSIDERATIONS
-----------	-----------	-----------------	--------------------	------------------------

GENERIC NAME	TRADE NAME	(Does not include all side effects)		
<p><b>General Considerations:</b> 1. People on these medications should not take any over-the-counter medication unless it had been prescribed by the primary care provider.            2. It is very important that these medications be given as scheduled. 3. Salt in-take and fluid intake/output should be monitored as directed by the primary care provider.            4. Routine blood pressure monitoring is important for people on these drugs.</p>				
<p><b>Niacin (Nicotinic Acid)</b></p>	<p>Nicobid, Nicolar</p>	<p>Niacin is a vitamin supplement that is also used to decrease cholesterol.</p>	<p>nausea; bloating; gas; headache; flushing; tingling or arms/legs; dizziness            Or fainting, especially when getting up from a lying or sitting position; fast heart rate; rash; yellowing of skin or eyes.</p>	<p>1. Person may experience skin flushing &amp; a sensation of warmth, especially of the face, neck &amp; ears. Itching, tingling, or headache may also occur. These effects are temporary And will gradually decrease with continued therapy            2. Niacin may cause stomach upset. Take with food.            3. Do not crush or chew extended-release capsules or tablets.</p>

# Lymphatic -- Circulatory



◆ **Lymphatic System**

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
	<ul style="list-style-type: none"> <li>• <b>Protects the body from infections and includes a vast network of vessels.</b></li> <li>• <b>Includes all the lymph vessels that collect the tissue fluid and return it to the circulation.</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Vessels</b></li> <li>• <b>Nodes</b></li> </ul>	Tonsillitis	Enlarged lymph nodes, fever, fatigue	Follow the orders of the primary care practitioner.
<b>Lymphatic System</b>			Hodgkin's Disease	Painless enlarged lymph nodes beginning in the neck, under the arm, in the groin, chest and abdomen. There may also be swelling, fever, night sweats, loss of appetite and weight loss.	Consumer should seek medical attention. Comfort measures should be provided and relaxation encouraged. A soft toothbrush should be used to decrease gums from bleeding. Once treatment has been started, good nutrition, frequent small meals and good fluid intake should be encouraged.

## Medications used in Treating Infectious Disorders

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Note:</b> Immediate medical attention is required if the person has a severe allergic reaction. Also, notify the primary care provider as soon as possible if the person develops a rash.				
<b>Penicillins</b>				
<b>Penicillin V Potassium</b>	Pen Vee K	These are used to treat infections caused by certain bacteria. They work by killing the bacteria or preventing their growth. Yeast Infections.	diarrhea; allergic reaction (rash, difficulty breathing, or swelling of the face); nausea; stomach cramps; seizures	1. Shake the suspension well before each use & store in the refrigerator. 2. Take at evenly spaced intervals throughout the day. Take with plenty of water. 3. Notify the primary care provider if severe diarrhea occurs. This could be a sign of a serious side effect.
<b>Amoxicillin Trihydrate</b>	Amoxil			
<b>Ampicillin Trihydrate</b>	Principen			
<b>Dicloxacillin Sodium</b>	Dynapen			
<b>Amoxicillin &amp; Clavulanate Potassium</b>	Augmentin			
<b>Cephalosporins</b>				
<b>Cephalexin Monohydrate</b>	Keflex	These are used to treat infections caused by certain bacteria. They work by killing the bacteria or preventing their growth. Yeast Infections.	diarrhea; allergic reaction (rash, difficulty breathing, or swelling of the face); nausea; stomach cramps; vaginal itching  or discharge	1. Shake the suspension well before each use & store in the refrigerator. (cefuroxime does not need to be refrigerated). 2. Take at evenly spaced intervals throughout the day. Take with plenty of water. 3. Notify the primary care provider if severe diarrhea occurs. This could be a sign of a serious side effect.
<b>Cefuroxime Axetil</b>	Ceftin			
<b>Cefaclor</b>	Ceclor			
<b>Cefazolin Sodium</b>	Ancef			
<b>Macrolides</b>				
<b>Azithromycin</b>	Zithromax	These are used to treat infections caused by certain bacteria. They work by killing the bacteria or Preventing their growth. Yeast Infections.	diarrhea; stomach cramping; nausea; vomiting; allergic reaction (rash, difficulty breathing, or swelling of the face).	1. Shake the suspension well before each use & store in the refrigerator. 2. May take with food if stomach upset occurs. Take with plenty of water. 3. Take evenly spaced intervals through the day. 4. Do not crush delayed release products. 5. Moderate diarrhea may occur. Notify primary care provider if it is prolonged or severe.
<b>Clarithromycin</b>	Biaxin			
<b>Erythromycin Base</b>	Erythrocin, Ery-Tab, E.E.S., etc.			
<b>Sulfonamides</b>				
<b>Trimethoprim &amp; Sulfamethoxazole</b>	Septra, Bactrim	Used to treat infections caused by certain bacteria. It is also used long-term to prevent urinary tract infections, pneumonia, & ear infections.	allergic reaction (rash, difficulty breathing, or swelling of the face); nausea; vomiting; loss of appetite; dizziness; fever; muscle & joint aching.	1. This drug can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing & wear sun block lip balm.

• **Medications used in Treating Infectious Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Note:</b> Immediate medical attention is required if the person has a severe allergic reaction. Also, notify the primary care provider as soon as possible if the person develops a rash.				
<b>Sulfonamides</b>				
Sulfamethoxazole continued				2. Notify the primary care provider if the person has redness, blistering, peeling, or loosening of the skin. Also, notify the primary care provider of severe or prolonged diarrhea. These could be signs of severe adverse reactions. 3. Take with a full glasses (8 ounces) of water & the person should drink plenty of water throughout the day.
<b>Fluroquinolones</b>				
Ciprofloxacin	Cipro	These are used to treat infections caused by certain bacteria. They work by killing the bacteria or preventing their growth.	headache; restlessness; dizziness; nausea; diarrhea; stomach pain; allergic reaction (rash, difficulty breathing, or swelling of the face); seizures; pain in calves or heels	1. These drugs should be taken with a full glass (8 ounces) of water & the person should drink plenty of water throughout the day. 2. These antibiotics should be given <b>at least 2 hours before or 2 hours after the following:</b> iron products, calcium supplements, zinc supplements, or multivitamins with minerals. <b>These antibiotics should be given at least 2 hours before or 4 hours after antacids or sucralfate.</b> These drugs can decrease the absorption of the antibiotics. 3. Fluroquinolones can make the skin more
Levofloxacin	Levoquin			
Ofloxacin	Floxin			
				itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing & wear sun block lip balm.
<b>Tetracyclines</b>				
Tetracycline Hydrochloride	Sumycin, Achromycin	These medicines are used to treat infections and to help control acne.	stomach cramps; diarrhea; nausea; headache; loss of appetite; dizziness; allergic reaction (rash, difficulty	1. Should not be given to children less than 8 years old. 2. All tetracycline should be taken at least 1
Doxycycline Sodium	Vibramycin			

• **Medications used in Treating Infectious Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Note:</b> Immediate medical attention is required if the person has a severe allergic reaction. Also, notify the primary care provider as soon as possible if the person develops a rash.				
<b>Tetracyclines continued</b>				
<b>Minocycline Hydrochloride</b>	Minocin		breathing, or swelling of the face)	hour before or 2 - 3 hours after the following: calcium supplements, milk/dairy products, iron supplements, antacids, magnesium supplements/laxatives, multivitamins with minerals, or zinc supplements. These drugs could decrease the absorption of the antibiotics. 3. Tetracyclines can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing & wear sun block lip balm. 4. Tetracyclines should be taken with a full glass (8 ounces) of water to prevent irritation of the esophagus. The person should not lie down for at least 30 min. after taking medicine. 5. Do not use outdated (old) medicine. This could cause serious side effects.
<b>Other Antibiotics</b>				
<b>Clindamycin Phosphate</b>	Cleocin	Used to treat infections caused by certain bacteria	diarrhea; nausea; vomiting; allergic reaction (rash, difficulty breathing or swelling of the face)	1. Moderate diarrhea may occur. Notify the primary care provider if it is prolonged or severe. This could be a sign of severe adverse reaction. 2. Take with a full glass (8 ounces) of water.
<b>Metronidazole</b>	Flagyl	Used to treat infections (usually in the abdomen)	dizziness; headache; nausea; diarrhea; unsteadiness; seizures; dry mouth; metallic taste; vaginal yeast infection; numbness or tingling in the arms or legs; allergic reaction (rash, difficulty breathing, or swelling of the face).	1. The person should not drink alcohol because it can cause flushing, headache, nausea, vomiting, fast heart rate & sweating. 2. May turn the urine dark or reddish-brown.
<b>Nitrofurantoin Macrocrystals</b>	Macrochantin	See "Medications Used in Treating Urinary Disorders"		

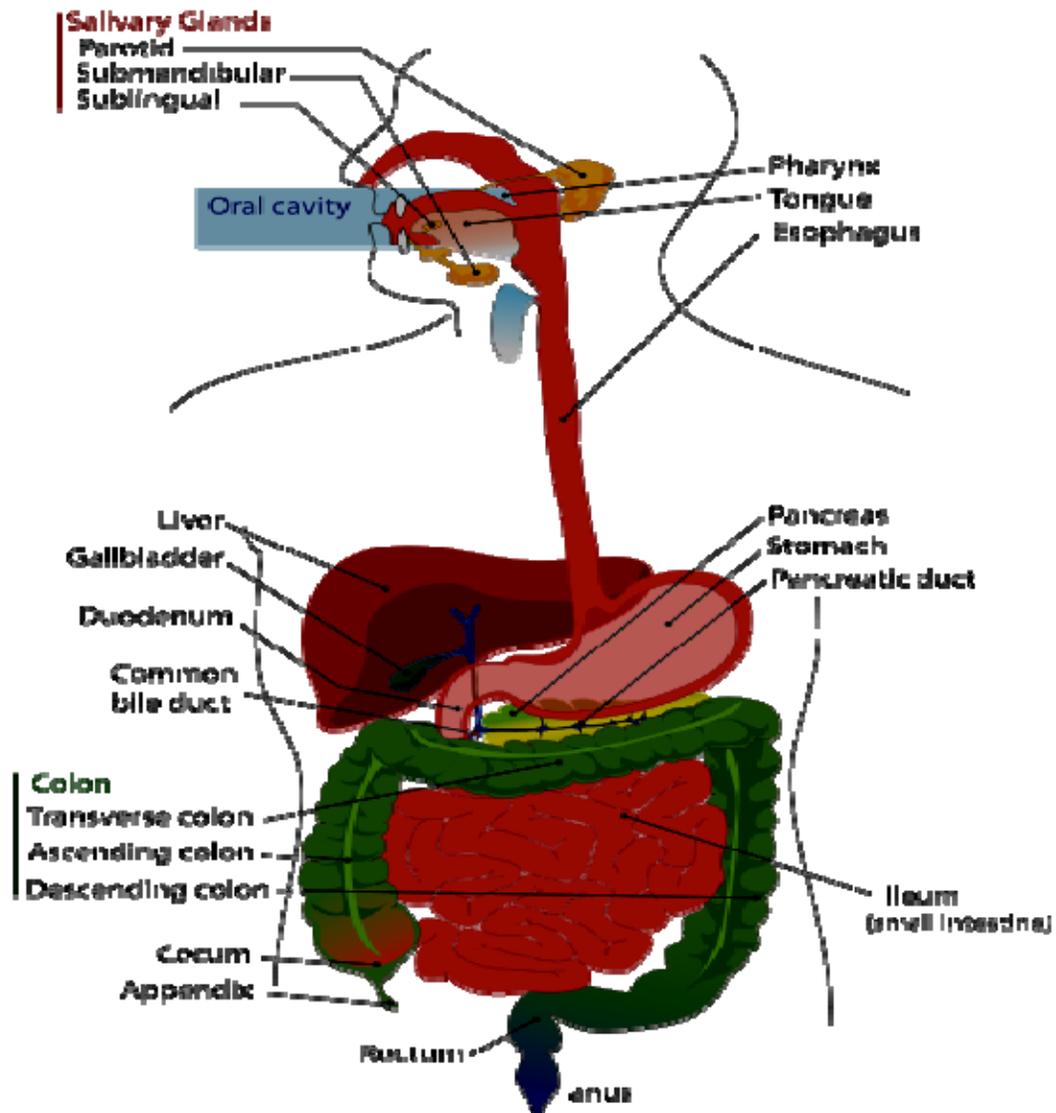
• **Medications used in Treating Infectious Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Note:</b> Immediate medical attention is required if the person has a severe allergic reaction. Also, notify the primary care provider as soon as possible if the person develops a rash.				
<b>Antituberculosis Agents</b>				
Rifampin, Rifampicin	Rifadin	Used to treat tuberculosis. May also be used for some other types of infections.	flushing; swelling; headache; nausea; stomach cramps; diarrhea; drowsiness; dizziness; numbness; itching; yellowing of skin or eyes; unusual bleeding or bruising.	1. This drug will cause the urine, tears, sweat & other body fluids to turn reddish-orange. 2. Contents of capsules may be mixed with a small amount of applesauce or jelly.
Isoniazid (also called INH)	Laniazid	Used to treat or prevent tuberculosis	dizziness; slurred speech; tiredness; yellowing of skin or eyes; seizures; rash; numbness or tingling in arms or legs.	3. Women on birth control pills should use additional means of birth control while taking this medication (also see under "Drugs Used to Treat Endocrine Disorders"). 4. The person should not drink alcohol while taking this medication. 1. Notify the primary care provider if the person has yellowing of the skin/eyes, dark urine, tiredness, weakness, nausea, or vomiting. These could be signs of hepatitis. Also report numbness or tingling in the arms or legs. 2. Do not take antacids within 1 hour of taking isoniazid. 3. May take with food if stomach upset occurs. 4. The primary care provider may prescribe Vitamin B6 to prevent some of the side effects of isoniazid. It is very important to take this every day.
<b>Analgesic (non-narcotic)</b>				
Acetaminophen (or APAP)	Tylenol, Panadol, Tempra, etc.	Relieves pain, reduces fever	Allergic reaction - rash, fever, or difficulty breathing Yellow eyes or skin <i>Overdosage can cause liver damage</i>	1. Do not exceed the recommended dosage. 2. Check the labels of all prescription & nonprescription medication the person takes. If any contain acetaminophen, check with the person's health care professional. (Taking them together with this medication may cause an overdose.)

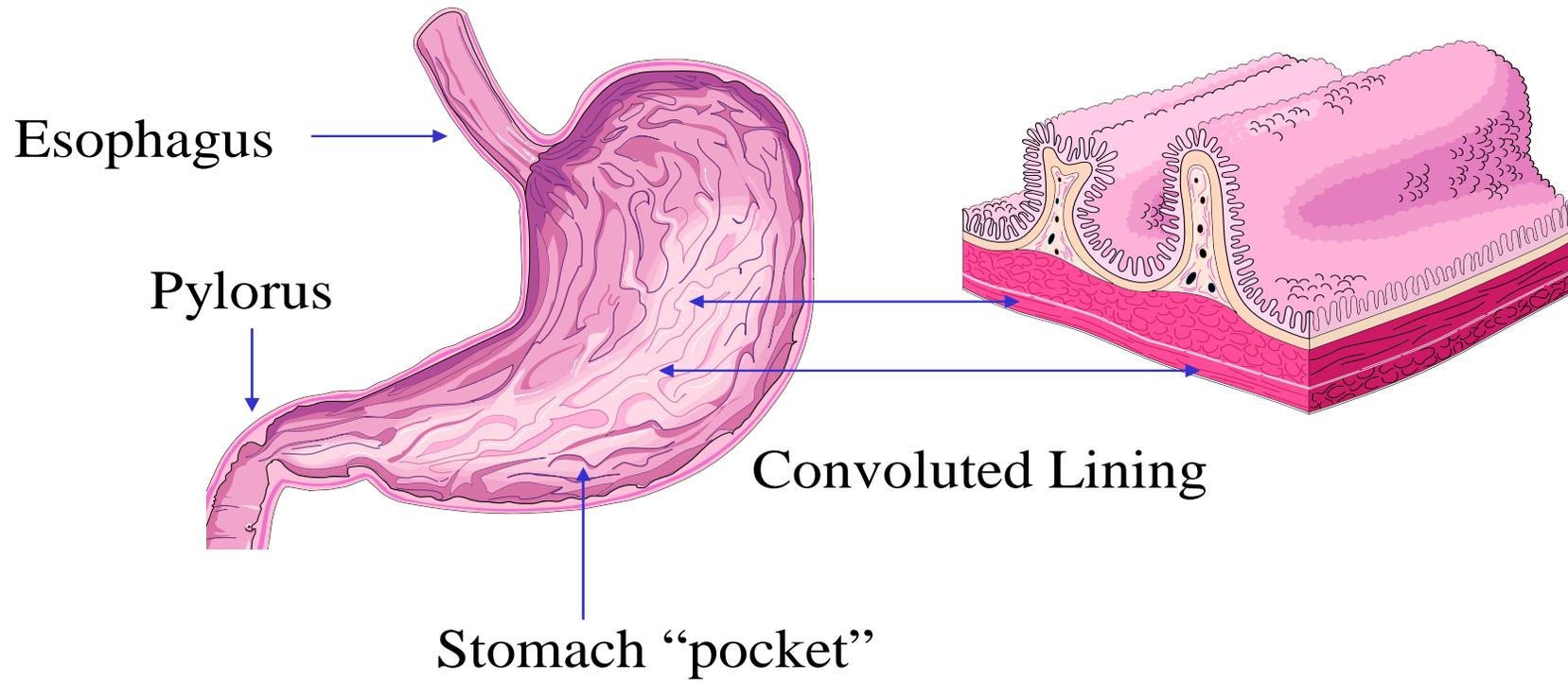
• **Medications used in Treating Infectious Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Note:</b> Immediate medical attention is required if the person has a severe allergic reaction. Also, notify the primary care provider as soon as possible if the person develops a rash.				
<b>Aspirin</b>	Anacin, Bufferin,	1. Relieves pain - used for headache,	Stomach ulcers - signs include: bloody	1. Take with food or after meals & take with
other names include	Ecotrin, Zorprin,	muscle ache, etc.	or black, tarry stools; throwing up blood	a full glass of water.
<b>ASA or ECASA</b> (If enteric-coated)	Alka-Seltzer, etc.	2. Reduces inflammation - used for arthritis & other inflammatory 3. Reduces fever 4. Decreases ability of blood to clot - used to prevent heart attacks and	or material that looks like coffee grounds; stomach pain Easy bruising/bleeding Allergic reaction - shortness of breath; wheezing, itching, inflammation inside	2. Do not use if a strong vinegar-like odor is present. 3. Do not crush enteric-coated aspirin. 4. Do not place or dissolve directly on an aching tooth, canker sore, or cold sore. A
		strokes	the nose, swelling of eyelids, face & lips Stomach Upset - (nausea, indigestion, heartburn) Ringing in ears, hearing loss Dizziness, weakness, confusion	serious inflammatory reaction could occur. 5. Aspirin should not be used if the person takes blood thinners (Coumadin). Check with physician.
<b>Nonsteroidal Anti-inflammatory Drugs (NSAIDs)</b>				
<b>Ibuprofen</b>	Advil, Motrin,  Nuprin, etc.	1. Relieves pain - used for headache,  muscle ache, etc.  Also, used to treat the symptoms of PMS and menstrual cramps. 2. Reduces inflammation - used for arthritis & other inflammatory 3. Reduces fever	Stomach ulcers - signs include: bloody or black, tarry stools; throwing up blood or material that looks like coffee grounds; stomach pain Stomach Upset - (nausea, indigestion, heartburn) Ringing in ears, hearing loss Allergic reaction (see aspirin above) Fluid retention/weight gain Dizziness, weakness, headache, vision changes	1. Take with food or after meals & take with a full glass of water. The person should avoid lying down for at least 30 minutes after taking the medicine. 2. May cause sensitivity to sunlight. Use sunscreen and wear protective clothing.

# Digestive/GI System



# Stomach



# THE DIGESTIVE SYSTEM

## GENERAL:

The purpose of the digestive system is to take in food, extract protein, minerals, vitamins, carbohydrates, fats, etc., for use by the body, and then excrete the remains. Medications given by mouth enter and pass through the digestive system. Some medications must be given with food or drink to prevent irritation to the stomach lining. Others have an enteric coating which is designed to protect the medication from dissolving until the desired location is reached in the system.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Digestive	<ul style="list-style-type: none"> <li>• Break food down into nutrients the body can use to nourish cells.</li> <li>• Transports nutrients.</li> <li>• Excrete waste.</li> <li>• The Liver is responsible for the metabolism of many medications and therefore special attention should be paid to those medications that require routine Liver Function Tests (LFT's) such as the Psychotropic classification of drugs.</li> </ul>	<ul style="list-style-type: none"> <li>• Mouth</li> <li>• Esophagus</li> <li>• Stomach</li> <li>• Sm. Intestine</li> <li>• Large Intestine</li> <li>• Liver</li> <li>• Pancreas</li> <li>• Gall Bladder</li> <li>• Hormones</li> <li>• Glands</li> </ul>	Gastrointestinal Obstruction (Volvus)	Nausea, vomiting, blood in vomit, blood in stools, constipation and diarrhea,	Notify Primary care provider, this is considered an emergency.
			GERD (Gastro-Esophageal Reflux Disease)	Pain in stomach, heartburn, difficulty swallowing, poor appetite, changes in energy levels, bad breath, weight loss.	Encourage to sit up 1 ½ hours after eating. Encourage weight loss (if needed). Assessment by Dietician. Encourage consumer to avoid caffeine, chocolate, spicy food and processed tomatoes.
			Hiatal hernia - chronic pain may be related to the regurgitation of acidic gastric content. Inguinal hernia - occurs when a segment of the bowel pushes through the inguinal ring in the groin area.	Hiatal: heartburn, acidity, gastric fullness, difficulty eating. Inguinal: pain, constipation or change in bowels, bulging under the skin	People may live many years with a hernia, however, if they are having a significant amount of pain, surgery may be needed.
			Ulcers	Open sore or lesion or lesion of the mucous membrane. Pain, coffee ground vomitus, bleeding, tarry stools, decreased appetite	Follow special diet and medications ordered by primary care provider.  If consumer has sudden pain and unconsciousness occurs, call 911 immediately.
			DISEASES	Signs and Symptoms	CARE (may include)

• **Medications used in Treating Gastrointestinal (Digestive) Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antacids</b>				
<b>Aluminum Hydroxide</b>	Amphogel	Used to treat stomach upset due to excess acid, such as heartburn or indigestion. May also be used to treat the symptoms of stomach ulcers.	constipation; nausea; loss of appetite; muscle weakness; difficult or painful urination; mood or mental changes. Aluminum hydroxide causes more constipation.	1. Shake liquid antacids before each use. 2. Do not take antacids within 1 - 2 hours of taking other medications (antacids may keep other medicines from being absorbed). 3. Notify primary care provider if the person vomits coffee-ground looking material or has black, tarry stools (may indicate bleeding stomach or intestine).
<b>Aluminum &amp; Magnesium Hydroxide</b>	Mylanta, Maalox			
<b>Antidiarrheal Agents</b>				
<b>Kaolin/Pectin, Attapulgit</b>	Kaopectate	Used to treat diarrhea.	constipation; fecal impaction	1. Notify the primary care provider if diarrhea is not controlled within 48 hours. 2. Do not used if the person has a fever or blood/mucus in their stool. Contact the primary care provider. 3. Encourage Adequate fluid intake. 4. Shake well before each use. 5. Take other medicines at least 2 hours after attapulgit. Taking them at the same time could decrease the absorption of the other medicines.
<b>Antidiarrheal Agents continued</b>				
<b>Bismuth Subsalicylate</b>	Pepto-Bismol	Used to treat diarrhea, nausea, and indigestion	darkening of the tongue; gray-black stools; constipation; nausea; headache; fecal impaction confusion; ringing in the ears; weakness; allergic reaction (difficulty breathing, rash)	1. Notify the primary care provider if diarrhea is not controlled within 48 hours or if the person has a high fever. 2. Do not use if the person is allergic to aspirin or cannot take aspirin for some other reason. 3. Shake liquid well before each use. Tablets should be chewed. 4. Encourage adequate fluid intake.
<b>Diphenoxylate with Atropine</b>	Lomotil	Used to treat diarrhea.	drowsiness; dizziness, nausea, dry mouth; constipation; difficult urination; blurred vision; headache; confusion; difficulty breathing; fast heart rate; itching	1. Notify the primary care provider if diarrhea is not controlled within 48 hours of the person has a high fever. 2. Do not use more than the prescribed dose. 3. This drug will add to the effects of alcohol &

• **Medications used in Treating Gastrointestinal (Digestive) Disorders (continued)**

EXAMPLES:	EXAMPLES:	INDICATIONS/USE	MAJOR SIDE EFFECTS	SPECIAL CONSIDERATIONS
-----------	-----------	-----------------	--------------------	------------------------

GENERIC NAME	TRADE NAME		(Does not include all side effects)	
<b>Antidiarrheal Agents continued</b>				
<b>Diphenoxylate with Atropine continued</b>				other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.
<b>Loperamide Hydrochloride</b>	Imodium	Used to treat acute and chronic diarrhea.	drowsiness; dizziness; dry mouth; nausea; constipation; stomach cramps; Rash, itching (allergic reaction)	<ol style="list-style-type: none"> <li>1. Notify the primary care provider if diarrhea is not controlled within 48 hours or if the person has a high fever.</li> <li>2. Do not use more than 8 capsules or 80 ml in a 24 hour period.</li> <li>3. Encourage adequate fluid intake.</li> </ol>
<b>Antiemetics</b>				
<b>Promethazine</b>	Phenergan	Used to control nausea and vomiting. Also used for motion sickness.	drowsiness; dry mouth; thickening of bronchial secretions; headache; dizziness; disorientation; restlessness; involuntary movements; easy bruising or bleeding; muscle ache; sore throat ↓ B/P with ↑Pulse	<ol style="list-style-type: none"> <li>1. This drug can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing &amp; wear sun block lip balm.</li> <li>2. This drug will add to the effects of alcohol &amp; other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.</li> <li>3. Store suppositories in the refrigerator.</li> </ol>
<b>Antiulcer Agents</b>				
<b>Cimetidine</b>	Tagamet	This is a class of drugs that decreases the amount of acid produced by the stomach. They are used to treat ulcers, heartburn, and other conditions caused by too much stomach acid	dizziness; agitation; headache; confusion;	<ol style="list-style-type: none"> <li>1. Do not take directly with antacids; separate doses by at least one hour.</li> <li>2. Notify the primary care provider of any symptoms that suggest a bleeding ulcer, such as: black, tarry stools; blood in the stool; vomiting blood; vomit that looks like coffee grounds; Severe stomach pain; fainting; dizziness; shortness of breath.</li> <li>3. Cimetidine has many drug interactions. Monitor the person for side effects from their other medications when cimetidine is start/stop.</li> </ol>
<b>Famotidine</b>	Pepcid		constipation; diarrhea; nausea; rash;	
<b>Nizatidine</b>	Axid		drowsiness	
<b>Ranitidine</b>	Zantac			

• **Medications used in Treating Gastrointestinal (Digestive) Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antiulcer Agents</b>				
<b>Lansoprazole</b>	Prevacid	This class of drugs decreases the Amount of acid in the stomach/  They are used to treat ulcers & gastroesophageal reflux disease (a condition in which the acid in the stomach washes back up into the esophagus).	headache; dizziness; nausea; diarrhea;  stomach pain; constipation; rash; muscle or joint pain	1. Take before eating. 2. Generally, these drugs should be swallowed whole. However, the capsule can be opened and the pellets mixed with one tablespoon of applesauce or with a small amount of cranberry or orange juice. The mixture should be swallowed immediately. The pellets should not be chewed or crushed. 3. Notify the primary care provider of any symptoms that suggest a bleeding ulcer, such as: black, tarry stools; blood in the stool; vomiting blood; vomit that looks like coffee grounds; severe stomach pain; fainting; dizziness; shortness of breath.
<b>Omeprazole</b>	Prilosec			
<b>Laxatives</b>				
<b>Note:</b> A proper diet containing roughage (whole grain breads and cereals, bran, fruit, and green leafy vegetables), with 6 to 8 full glasses of liquids each day, and daily exercise are most important in maintaining healthy bowel function.				
<b>Bisacodyl</b>	Dulcolax	These are stimulant laxatives that used for the short-term treatment of constipation & to clean out the bowel before bowel exams or surgery.	stomach cramps; nausea; vomiting; diarrhea; dizziness; rectal bleeding	1. Do not crush bisacodyl tablets. 2. Laxative effect will be seen in 6 - 10 hours. 3. Long-term use of stimulant laxatives can result in laxative dependence or in imbalance in fluid & electrolyte levels (symptoms-muscle cramps, weakness, dizziness). 4. Red-brown, pink-red, or red-violet discoloration of the urine may occur with Senna. 5. Avoid antacids, milk and other medications within one hour of administration.
<b>Senna</b>	Senokot			
<b>Docusate Sodium</b>	Colace	Used to soften the stool so the person can have a bowel movement without straining.	diarrhea; stomach cramping; throat irritation (liquid form)	1. Do not crush capsules. The liquid can be given in milk or fruit juice to mask the bitter taste. 2. Do not use in the presence of abdominal pain, nausea or vomiting.

• **Medications used in Treating Gastrointestinal (Digestive) Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Laxatives continued</b>				
<b>Glycerin Suppositories</b>	Babylax, Sani-Supp	Used for the treatment of constipation. Glycerin draws fluid into the bowel & stimulates evacuation.	irritation or bleeding in the rectal area; bowel cramps; nausea; diarrhea	1. Insert one suppository high in the rectum & retain for 15 minutes. Effects usually occur in 30 minutes. 2. Do not use in the presence of abdominal pain, nausea or vomiting. 3. Store suppositories at room temperature.
<b>Lactulose</b>  <b>Magnesium Hydroxide</b>	Chronulac  Milk of Magnesia	Used for the treatment of constipation. Works by retaining ammonia in the bowel causing increased intestinal movement. Used for the treatment of constipation. It works by drawing fluid into the bowel.	gas; diarrhea; stomach pain; nausea  diarrhea; stomach cramping	1. Lactulose may be given "as is" or diluted with water, fruit juice or milk. 2. Laxative results may not occur for 24 - 48 hrs 1. Shake suspension well before each use. 2. Take with plenty of water. 3. Do not take at the same time as warfarin, digoxin, or certain antibiotics (cipro, tetracycline, etc.) 4. Notify primary care provider if symptoms of electrolyte imbalance occur (muscle cramps or pain, weakness, drowsiness, slowed breathing). 5. Laxative effects will be seen in 4 - 6 hours.
<b>Magnesium Citrate</b>	Citroma	Used for the short-term treatment of constipation or for evacuation of the bowel for surgical or diagnostic procedures. It works by drawing fluid into the bowel.	diarrhea; gas; stomach cramps	1. Take with a glass of water or fruit juice. Chill before using to improve taste. 2. Effects will occur in 30 minutes to 3 hours. 3. Notify primary care provider if symptoms of electrolyte imbalance occur (muscle cramps or pain, weakness, drowsiness, slowed breathing). 4. Refrigerate to help maintain potency and improve taste.
<b>Psyllium</b>	Metamucil	A bulk-forming laxative used for the treatment of constipation. It may also be used for the treatment of diarrhea and high cholesterol.	stomach pain; bowel obstruction (if not taken with enough fluids, water preferred); gas; constipation; diarrhea	1. To allow psyllium to work properly & to prevent intestinal blockage, it is necessary to drink plenty of fluids during its use. Each dose should be mixed in a full glass (8 ounces) of water or juice. Giving a second glass of water or juice will help avoid side effects. 2. Full effects may take 2 - 3 days.

• **Medications used in Treating Gastrointestinal (Digestive) Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Other Gastrointestinal Drugs</b>				
<b>Metoclopramide</b>	Reglan	It increase the movements or contractions of the stomach & intestines. Used for the treatment of gastroesophageal reflux disease (a condition in which the acid in the stomach washes back up into the esophagus). Decreases nausea.	drowsiness; diarrhea; weakness; involuntary movements of the face, mouth, or limbs; trembling; confusion; restlessness; difficulty sleeping; depression; dry mouth; seizures	1. Metoclopramide is usually taken 30 minutes before meals & at bedtime. 2. Notify primary care provider if involuntary movements occur (such as chewing, lip-smacking, puffing of cheeks, grimacing, rapid blinking, etc.) 3. This drug will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.
<b>Mesalamine</b>	Asacol, Pentasa	Used to treat ulcerative colitis Acts as an anti-inflammatory.	headache; stomach pain; cramps; gas; tiredness; hair loss; rash; diarrhea	Do not crush or chew sustained-release capsules or tablets.
<b>Sulfasalazine</b>	Azulfidine	Used to treat ulcerative colitis Acts as an anti-inflammatory.	dizziness; headache; diarrhea; nausea; vomiting; itching; rash; yellowing of the skin	1. Take after meals. Do not take with antacids. 2. Give with 8 ounces of fluid, (water). 3. May cause orange-yellow discoloration of the urine. 4. This drug can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing & wear sun block lip balm.

• **Medications used in Treating Gastrointestinal (Digestive) Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Other Gastrointestinal Drugs</b>				
<b>Simethicone</b>	Gas-X, Phazyme	Used to relieve the painful symptoms & pressure of excess gas in the stomach	No common or important side effects	Shake drops well before each use. Tablets should be chewed thoroughly before swallowing. Best taken with meals. 5. May cause blood cell changes and severe rash. Call M.D. if rash or bruising occur.

## ◆ Administration of Oral Medications

---

Requires an alert cooperative resident with an intact swallowing reflex.

### ● Oral Administration Equipment

---

1. **Unit dose or Single Dose** – Provides a single dose in one package ready for dispensing.
2. **Soufflé Cup** – Used to transport solid medication in order to prevent contamination in large bottles of medication to be used.
3. **Medicine Cup** – a plastic cup that has three sides for measurement of liquid medication. (apothecary, metric, household).
4. **Medicine Dropper** – a plastic barrel with a plastic bulb. Calibrations are on the side.
5. **Teaspoon** – Different from household teaspoon. It is a standard 5 ml.
6. **Tablespoon** – Different from household tablespoon. It is a standard 15 ml.
7. **Oral Syringe** – similar to an injectable syringe, except measured in milliliters, and a needle is unable to fit the tip.

### ● Oral Administration Process

---

- Give most important medications first. This may be difficult to determine in some cases due to the complexity of the medications. Know your facility's procedures regarding this issue.
- Allow person to drink a small amount of fluid first
- Have person place medication on the back of the tongue
- Give the person liquid to swallow the medication
- Drink a full glass of fluid to assist medication getting to the stomach and to begin digestion
- Remain with the person while they are taking the medication
- Never dilute a liquid medication unless specifically ordered to do so
- Remember the EIGHT RIGHTS OF MEDICATION ADMINISTRATION

## ◆ Administration of Rectal Medications

---

Usually includes a solid glycerin suppository form or a liquid enema form. This route is limited to medications that do not irritate the delicate tissue of the rectum. Absorption is altered by fecal content of the rectum, erratic blood flow to the tissue and expulsion of the medication.

### • Administration Technique

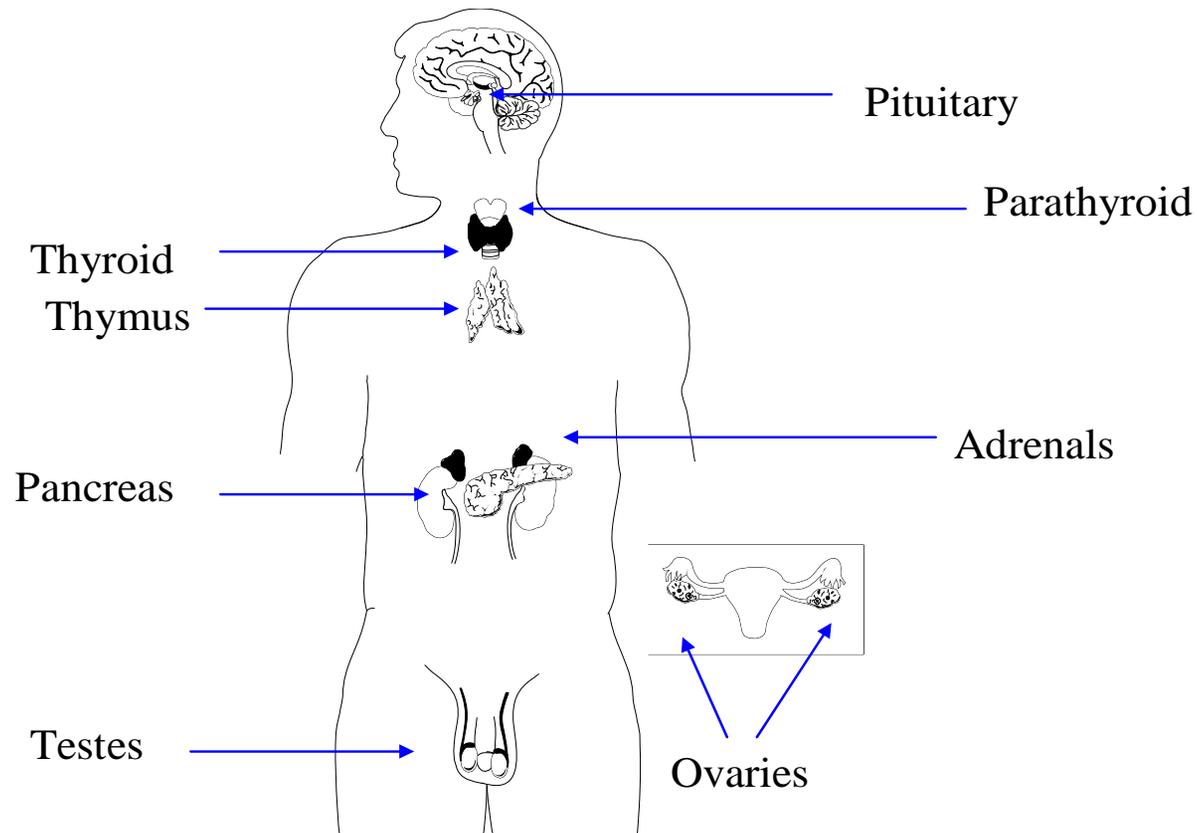
---

1. **Equipment** – Disposable gloves, water-soluble lubricant.
2. **Technique** –
  - a. Wash hands.
  - b. Remember the EIGHT RIGHTS.
  - c. Explain the procedure to the person.
  - d. Ensure privacy.
  - e. Assist resident to lie on the left side.
  - f. Provide for the person's privacy.
  - g. Put on gloves.
  - h. Ask person to bend uppermost leg toward the waist.
  - i. Unwrap suppository and apply a small amount of lubricant to tip. (If none is available, use a small amount of water. **DO NOT USE VASELINE**).
  - j. Place suppository at the rectal entrance. Gently insert suppository into rectum about 3 inches or the length of the gloved finger for an adult and one inch or up to the first knuckle of the index finger for a child.**
  - k. Ask the person to lie on their side for 15-20 minutes.
  - l. Discard used materials and wash hands thoroughly.
  - m. Document, document, document!

THIS PAGE INTENTIONALLY LEFT BLANK FOR FORMATTING PURPOSES.

PLEASE USE FOR “NOTES” PAGE.

# Endocrine



## ENDOCRINE SYSTEM

### GENERAL:

The Endocrine System functions as the regulatory system for the entire body. The system consists of glands. Each gland secretes hormones, which are chemicals that affect other organs.

Below is a list of glands and functions:

- **Anterior Pituitary:** Growth and retention of nitrogen for protein metabolism, affects the thyroid, the adrenal cortex, the ovaries, the testes, and breasts.
- **Posterior Pituitary:** Affects the kidneys and the uterus during pregnancy.
- **Thyroid:** Affects metabolic rate.
- **Thymus:** Affects immune system.
- **Parathyroid glands:** Affects bone calcification.
- **Adrenal Cortex:** Metabolizes carbohydrates and acts as an anti-inflammatory.
- **Adrenal Medulla:** Controls vasoconstriction in the vessels.
- **Pancreas:** Secretes insulin to maintain blood sugar levels
- **Ovaries:** Reproduction (female).
- **Testes:** Reproduction (male).

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Endocrine System	<ul style="list-style-type: none"> <li>• <b>Secrete hormones</b></li> <li>• <b>Regulate body systems/functions</b></li> </ul>	<ul style="list-style-type: none"> <li>• <b>Parathyroid</b></li> <li>• <b>Thyroid</b></li> <li>• <b>Pituitary</b></li> <li>• <b>Testes/Ovaries</b></li> <li>• <b>Pancreas</b></li> <li>• <b>Adrenal</b></li> <li>• <b>Thymus</b></li> </ul>	Goitre (this is a symptom of thyroid problems. It is not truly a disease.) (Thyroid gland)	Swelling of the neck.	Follow the primary care provider's recommended plan
			Diabetes- a hereditary disease  (Pancreas)	Increased thirst, appetite and urination.	Follow the primary care provider's recommended plan. Foods with high carbohydrate content should be discouraged. Offer good skin care, clients should be encouraged to wear cotton socks. Their clinician should examine their feet during medical appointments.

<b>Endocrine System (cont'd.)</b>			Dwarfism (Anterior Pituitary gland)	The consumer will be of short stature, usually below 36".	No special care needs, other than treating the consumer as a normal human being. Consumer may have some issues with proper body alignment.
			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
			Giantism, gigantism (Anterior Pituitary gland)	Exaggerated skeletal growth. The consumer may experience soft tissue swelling and swelling of the nerve endings.	Depending on the symptoms, surgery, radiation therapy or medical management may be needed.  Adapting the environment to meet needs.
			Hypothyroidism (Thyroid gland)	Weight gain, decreased temperature, slow reaction time, facial hair in women, sunken eyes, lethargy, dry skin and hair, decreased blood pressure and pulse, goiter	Medications ordered by primary care provider for hormonal replacement. Monitor vital signs and side effects of medications. Increase temperature of environment.  Give them time to process and respond to questions due to slow response times.
			Hyperthyroidism (Graves Disease)	Weight loss, increased temperatures, thinning hair, bulging eyes, increased heart rate and blood pressure, staring, depression, nervousness, excessive appetite, tremors,	Increase amount of available calories, follow primary care provider's orders.  Monitor closely for safety

			Cushing's Disease	Protein loss, fatness, fatigue, weakness, osteoporosis, impotence, edema, hair growth, diabetes, skin discolorations	Most likely post surgical care. Follow primary care provider's orders.
			Addison's Disease	Muscle fatigue, weakness, trembling, anxiety, depression, nausea, vomiting, diarrhea, low blood pressure.	Medications as ordered by the primary care provider and dietary regime as ordered.  Monitor blood pressure

## Medication used in Treating Endocrine Disorders

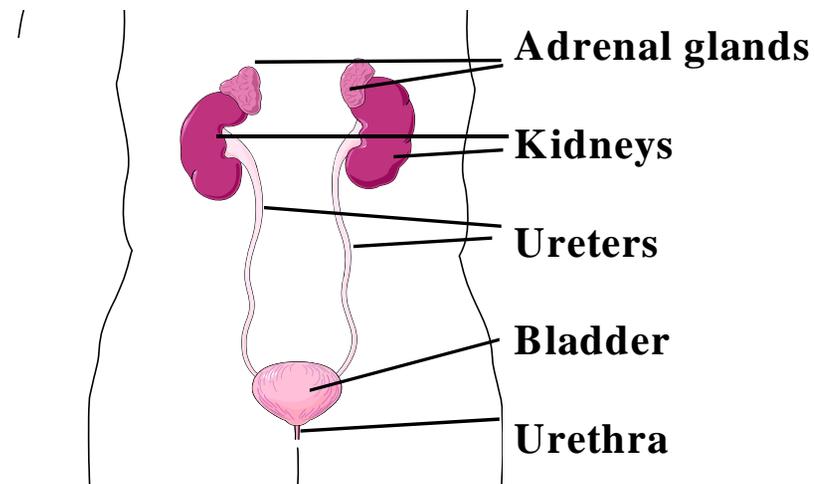
EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Thyroid Hormone</b>				
<b>Levothyroxine Sodium</b>	Synthroid, Levoxyl  Levoxine	Used to treat hypothyroidism (low thyroid hormone secretion)	Signs of too much thyroid hormone: Nervousness; heart palpitation; hand tremor; sleeplessness; unsteadiness; weight loss; hair loss; changes in menstrual cycle; sweating	1. Dose should be taken at the same time each day, usually before breakfast. 2. Notify the primary care provider if the person has signs of too much thyroid hormone.
<b>Antidiabetic Agents</b>				
<b>Insulin</b>	Humulin	A hormone used to treat diabetes that is injected to lower blood sugar levels, It is used in people that cannot control their sugar levels with diet, exercise, or oral medicine.  There are several types of insulin that act for different periods of time.	Signs of low blood sugar: anxious feeling; behavior change similar to being drunk, blurred vision, ; cold sweats; confusion; cool pale pale skin; difficulty in concentrating; headache; nausea; rapid heartbeat; shakiness; weakness Signs of high blood sugar: blurred vision; drowsiness, dry mouth, Increased urination, unusual thirst tiredness; nausea, change in appetite; sleepiness Other: thickening of the skin or depressed skin at the injection site.	1. Administer of insulin & management of diabetes requires extensive education by a trained health professional. 2. Symptoms of low blood sugar must be recognized & treated immediately before they lead to unconsciousness (passing out) Fruit juice, non-diet soft drinks, glucose tablets, candy (not chocolate), or table sugar should always be available to give to the person if they show signs of low blood sugar. 3. It is extremely important for the person to eat meals as scheduled and to follow their meal plan. Missing meals or scheduled snacks could cause low blood sugar. High blood sugar could result from not following dietary instructions. 4. If signs of <u>severe</u> high blood sugar are present, the person requires immediate hospitalization These include: flushed, dry skin; fruit-like breath odor; troubled breathing ( rapid & deep) passing out. 5. Person should not drink alcohol (can .

• Medication used in Treating Endocrine Disorders (continued)

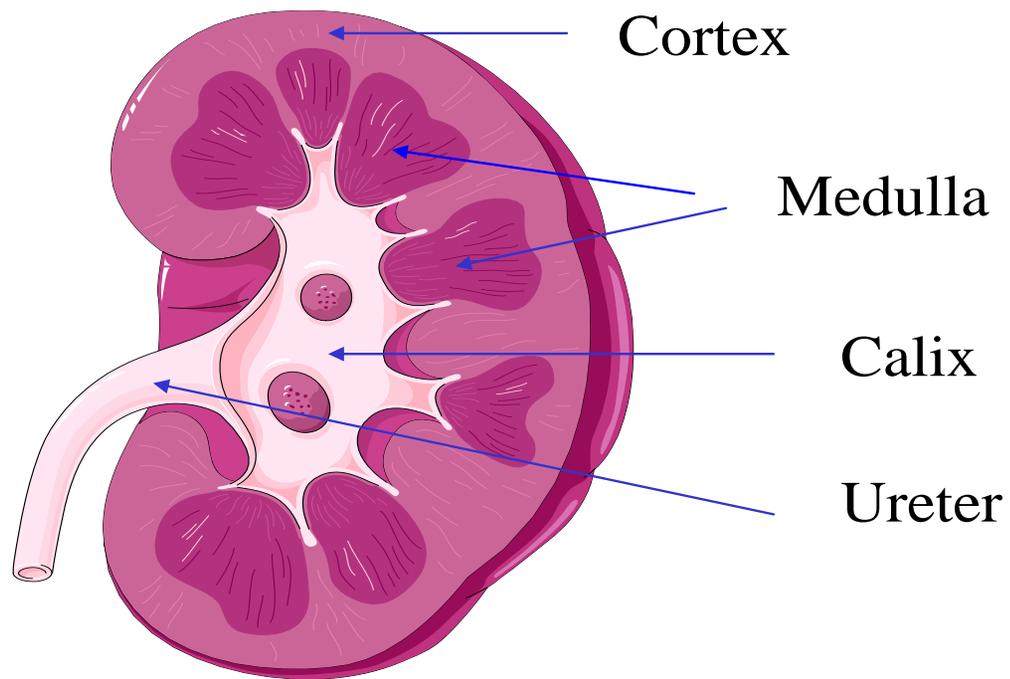
EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antidiabetic Agents (continued)</b>				
Insulin	Humulin			cause low blood sugar). 6. Insulin should be stored in the refrigerator until opened. 7. Once opened it needs to be dated
<b>Antidiabetic Agents (Oral)</b>				
Glyburide	DiaBeta, Glynase Micronase	These medicines stimulate the secretion of insulin from the pancreas. They are used to treat diabetes that does not require insulin.	Monitor for low or high blood sugar (See above under insulin). Other adverse effects include: rash; itching; nausea; constipation; increased amount or frequency of urination; diarrhea; unusual bruising or bleeding	1. See items #2, 3 & 4 above. 2. Person should not drink alcohol because it can cause flushing, headache, nausea, vomiting, fast heart rate & sweating (in addition to low blood sugar).
Glipizide	Glucotrol/Glucotrol XL			
Tolazamide	Tolinase			
Tolbutamide				
Chlorpropamide	Diabinese			
<b>Steroids (oral)</b>				
Prednisone	Deltasone	Used to decrease inflammation associated with arthritis, chronic respiratory problems, allergic reactions and other inflammatory diseases.	nausea; vomiting; black, tarry stools; vomiting blood; indigestion; stomach pain; weight gain; swelling of the feet or legs; menstrual irregularities or pain; mental depression; confusion; puffy face; increase in psychosis	1. May cause stomach upset. Take medicine with food. 2. Steroids may lower resistance to infection. Check with the primary care provider as soon as possible if the person has signs of infection such as sore throat, fever, coughing, etc. 3. Steroids should not be stopped abruptly if the person has been taking them for a long time or in high doses. This can cause nausea, vomiting, diarrhea, weight loss, lack of appetite, weakness and dizziness.
Prednisolone Systemic	Prelone; Delta-Cortef			
Methylprednisolone Systemic	Medrol			
Dexamethasone Sodium Phosphate	Decadron Phosphate			
Hydrocortisone Cypionate	Cortef			
Triamcinolone Diacetate	Aristacort			
<b>Medication used in Treating Endocrine Disorders (continued)</b>				
EXAMPLES:	EXAMPLES:	INDICATIONS/USE	MAJOR SIDE EFFECTS	

GENERIC NAME		TRADE NAME		(Does not include all side effects)
<b>Other Endocrine Agents</b>				
<b>Calcitonin</b>	Calcimar, (salmonine) Miacalcin, (salmonine)	Used to treat osteoporosis & other bone diseases	facial flushing; nausea; diarrhea; increased urination; swelling at injection site; nasal irritation (nasal spray only)	1. Calcitonin is available as an injection & as a nasal spray. A nurse must give the injection. The nasal spray should be administered according to the package insert.  2. Both the injection & the nasal spray should be stored in the refrigerator. Store the nasal spray in an upright position (do not allow it to lay on its side)
<b>Etidronate Disodium</b>	Didronel	Used to treat osteoporosis & other bone diseases	fever; bone pain; nausea; diarrhea; metallic taste; rash; difficulty breathing	Take with a full glass of water at least 2 hours before meals.

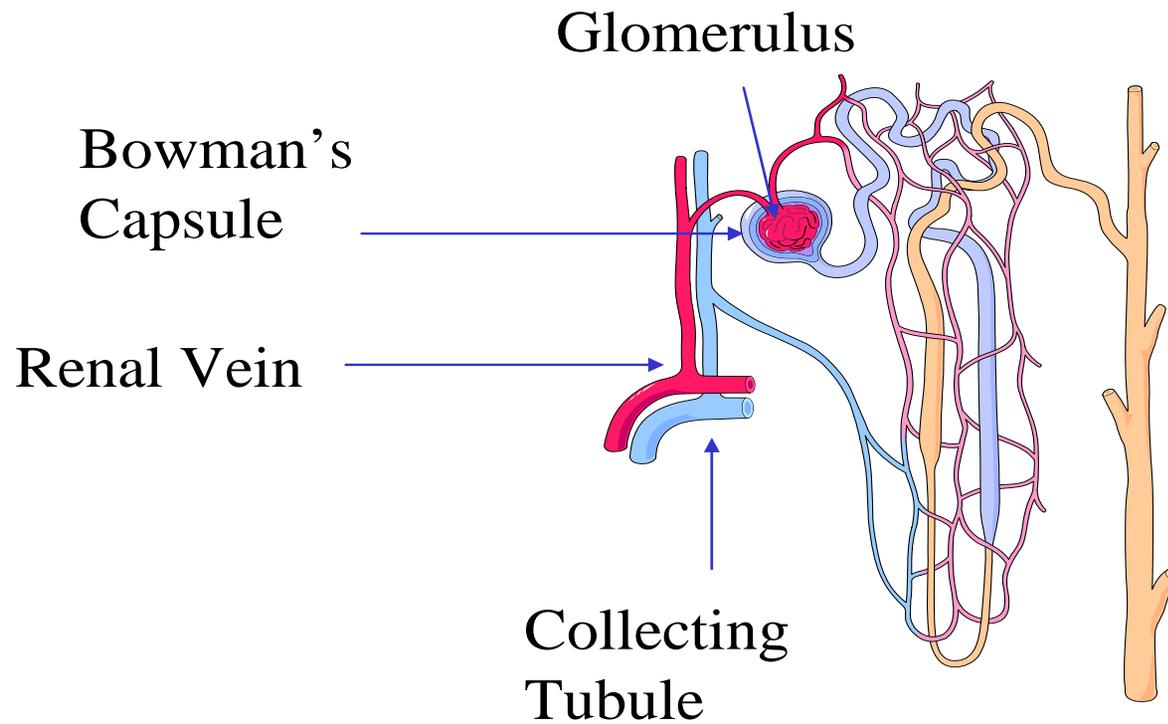
# Genitourinary -- Urinary



# Kidney



# Nephron and Renal Artery



## GENITOURINARY -- URINARY SYSTEM

### GENERAL:

The urinary system is also called the excretory system because it filters waste products from the blood and removes them from the body along with excess fluid. Other systems that also excrete fluid are the digestive, respiratory, and the integumentary system. The components of the urinary system include *two kidneys, two ureters, the bladder, and the urethra*. In the male there is one additional organ that can complicate conditions affecting the urinary system and that is the prostate.

As the body's blood supply passes through the kidneys, there is a very delicate filtration process that takes place. For example, one of the products of metabolism is urea. Urea must be removed from the body, as high levels can be toxic. The kidneys provide a specialized mechanism for elimination of urea and other wastes. The kidneys also maintain the balance of water in the body, the acid-base balance and production of the hormone, rennin, which affects blood pressure. Each kidney contains about 1.3 million nephrons, and they are the basic functional unit for filtration. The kidneys have two distinct regions - - the *cortex (outer portion)* and the *medulla (inner portion)*. The kidneys are very vascular and damage or disease in the kidneys is often discovered as a result of blood in the urine. Any time you suspect blood in the urine, it should be verified and the physician should be notified. The anatomical structure allows blood from the body to enter the kidneys through large vessels. The blood is then delivered to the nephrons through tiny blood vessels. Once the filtration has been completed the blood returns to the body's circulatory system and the waste products are carried to an area of the kidney called the *calyx*, which is where the ureters connect and they then transport the waste to the bladder.

The nephrons are a series of complex vessels and tubules that perform the essential filtration. The blood comes to the kidney through the renal artery and flows on to the nephrons through arterioles and passes through the glomerulus into the Bowman's capsule where different osmotic and hydrostatic pressures cause particles and waste to be filtered out. Certain fluids and electrolytes are recaptured from the filtration process and returned to the circulating blood supply. The kidneys filter about 48 gallons every day, but the kidneys only excrete about 1 quart per hour. If a person drinks a lot of water, then kidney function will maintain fluid balance by eliminating the excess fluid through the urine. If a person becomes dehydrated, then the kidneys hold back the water and the urine becomes very concentrated.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
--------	----------	--------	----------	--------------------	--------------------

<b>Genitourinary System</b>	<ul style="list-style-type: none"> <li>• Excrete urine from body.</li> <li>• Maintain fluid balance</li> </ul>	<ul style="list-style-type: none"> <li>• Kidneys</li> <li>• Ureters</li> <li>• Bladder</li> <li>• Urethra</li> <li>• Meatus</li> </ul>	Cancer	Pain on urination, foul smelling urine, incontinence, no urination (retention), fullness in bladder area, sudden, intense pain	Follow the physician's orders.
			Infection	Lower back pain, pain/burning on urination, elevated temperature, difficulty urinating, and urinary frequency especially in small amounts.	Report signs and symptoms to your supervisor. Observe for adequate intake of fluids and regularity.
			Kidney disease/stones	Intense pain in the back, or when a person urinates.	Report symptoms to your supervisor. Follow the primary care provider's orders.
			Incontinence	The leaking of urine	More common in women than men. Consumers need to have good peri care. Consumers may wait too long to go to the bathroom, and may need to be put on a toileting schedule.

• **Medications used in Treating Genitourinary Disorders**

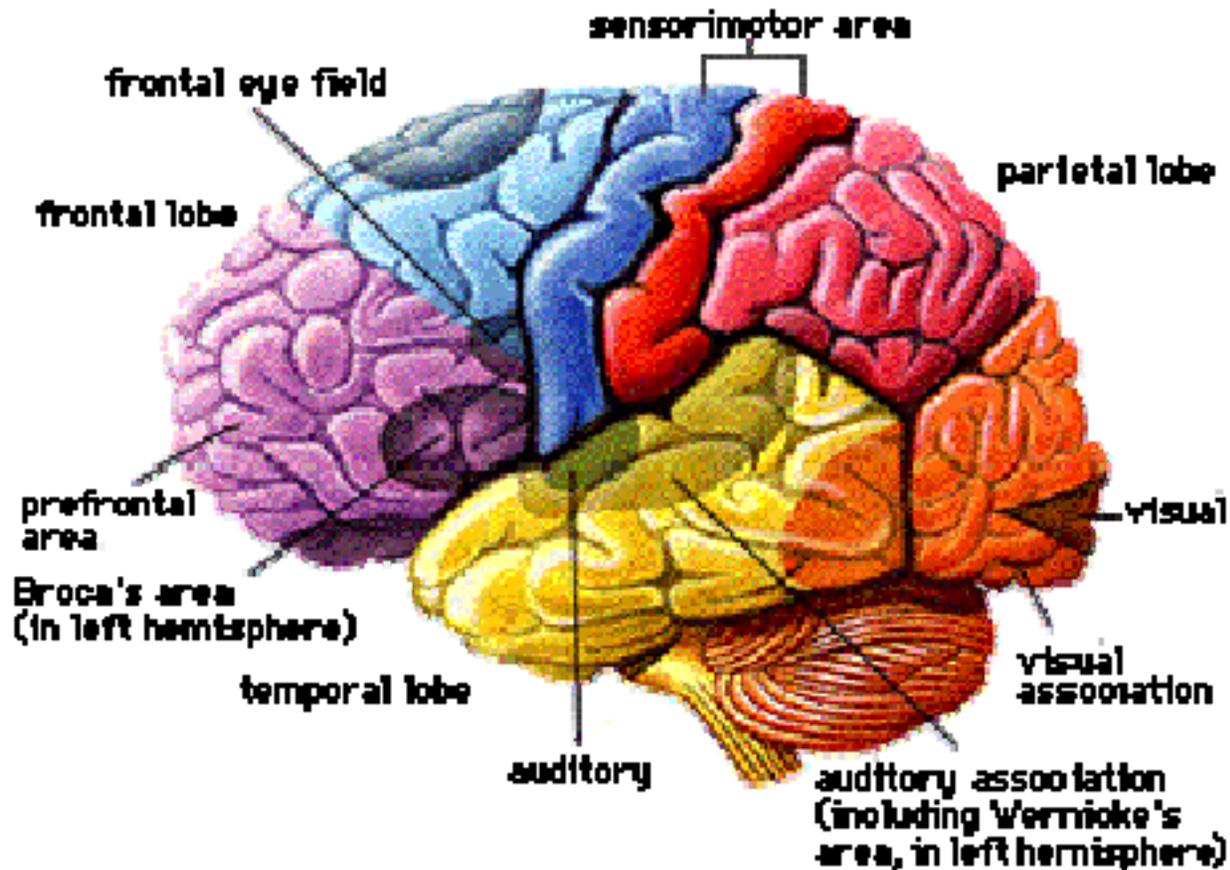
<b>EXAMPLES: GENERIC NAME</b>	<b>EXAMPLES: TRADE NAME</b>	<b>INDICATIONS/USE</b>	<b>MAJOR SIDE EFFECTS (Does not include all side effects)</b>	<b>SPECIAL CONSIDERATIONS</b>
<b>Urinary Muscle Relaxants (Antispasmodic)</b>				
<b>Oxybutynin Chloride</b>	Ditropan	Used to decrease muscle spasms of the bladder and the frequent urge to urinate caused by these spasms.	drowsiness; dry mouth; constipation; fast hear rate; dizziness; weakness; sleeplessness; decreased urination	1. This drug will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.  2. Use caution in hot weather. This drug can cause fever & heatstroke due to decreased sweating.
<b>Cholinergic Agents</b>				
<b>Bethanechol Chloride</b>	Duvoid	Helps to cause urination and emptying of the bladder.	stomach cramps; diarrhea; nausea; increased salivation; sweating; flushed skin; difficulty breathing; dizziness, lightheadedness or fainting when rising too quickly from a seated or lying position	Should be taken 1 hour before or 2 hours after meals to avoid nausea and vomiting  Report side effects to primary care provider as may indicate toxicity.  Also report difficulty chewing, swallowing or muscle weakness.
<b>Urinary Tract Analgesics</b>				
<b>Phenazopyridine</b>	Pyridium	Used for short-term (2 day) relief of pain, burning, & frequent urination associated with urinary tract infections	headache; dizziness; stomach cramps; rash	1. Take with food or after meals to decrease G.I. upset. 2. May cause urine to turn reddish-orange. May stain bedding or underwear.
<b>Urinary Anti-infectives</b>				
<b>Nitrofurantoin Sodium</b>	Macrochantin	Used for the prevention and treatment of urinary tract infections caused by certain bacteria	rash; stomach upset; vomiting; diarrhea; loss of appetite; drowsiness; headache; dizziness; weakness; tingling/numbness of hands or feet; muscle ache; difficulty breathing (especially with a history of asthma); chest pain.	1. Take with food or milk. 2. Antacids may decrease the absorption of nitrofurantoin. Do not give them at the same time. 3. May turn urine dark yellow or brown. 4. Photosensitivity: avoid sun. Use sunscreen. 5. Call primary care provider if cough, fever, chest pain, difficulty breathing, numbness/tingling fingers occurs.

• **Medications used in Treating Genitourinary Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Vaginal Products (Antibiotics and Antifungals)</b>				
<b>Clindamycin Hydrochloride</b>	Cleocin HCL	Used to treat certain vaginal bacterial Infections.	rash; itching; local pain; vaginal yeast infection (thick, white vaginal discharge); diarrhea; stomach upset; headache and dizziness.	1. Follow the administration directions & use the disposable applicators included in the package.  2. Use at bedtime. This will help keep the medicine in the vagina & reduce leaking. Wearing a sanitary napkin or mini-pad may prevent staining of clothing. Do not use tampons.  3. Notify primary care provider if diarrhea occurs.
<b>Clotrimazole</b>	Mycelex, Gyne-Lotrimin	Used to treat vaginal yeast infections	local pain/burning; itching; rash; stomach cramps	See special considerations for Clindamycin (above)
<b>Miconazole Nitrate</b>	Monistat	Used to treat vaginal yeast infections	local pain/burning; itching; rash; stomach cramps	See special considerations for Clindamycin (above)

# The Nervous System

## The Brain

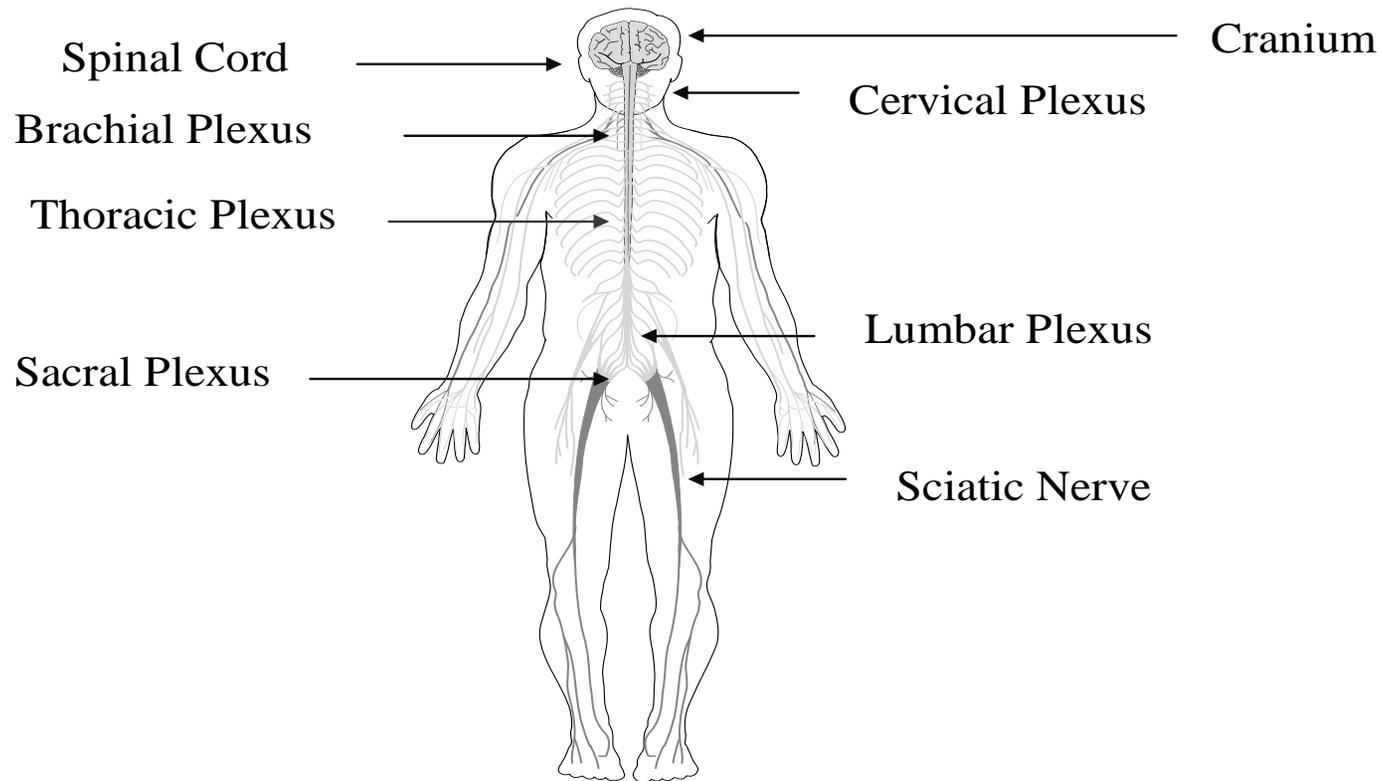


**BRAIN FUNCTION**

**COMMONLY DISCUSSED LOBES AND BASIC FUNCTIONS**

<b>CEREBRUM</b>	<b>CEREBELLUM</b>	<b>BRAIN STEM</b>
<p><b>FRONTAL LOBE</b> (1)- Reasoning, Judgment, Attention, Emotional Control, Voluntary Movement, Problem Solving, Decision Making, Personality, Inhibition, Persevere, Plan, Organize</p> <p><b>TEMPORAL LOBE</b> (2) - Complex Memory, Hearing, Receptive Language, Musical Awareness, Sequencing Skills</p> <p><b>PARIETAL LOBE</b> (2) - Touch Sensation/Perception, Judgment of texture, weight, size, and shape, Proprioception, Spatial Relationships, Directions,</p> <p><b>OCCIPITAL LOBE</b> (1) - All aspects of Vision including recognition of shapes and colors, Depth perception, Midline perception.</p>	<p>Regulates balance, posture, movement, and coordination. Involved in maintaining equilibrium and muscle tone. Sitting, Walking, Jumping, Running, Dancing, etc.</p>	<p><b>MIDBRAIN</b> and <b>PONS</b> - Relay station between higher areas of brain to lower centers. Joins the hemispheres of the cerebellum and connects the cerebrum with the cerebellum. Controls Involuntary Respiration in that it is Involved with Level of Consciousness (RAS). Medications can stimulate or depress the RAS.</p> <p><b>MEDULLA OBLONGATA</b>- Controls automatic functions including heartbeat, breathing, and vasomotor response. Vomiting, hiccupping, sneezing, coughing, and swallowing.</p>

# Peripheral Nervous System



## **THE NERVOUS SYSTEM**

### **GENERAL:**

The nervous system is divided anatomically into the central nervous system and the peripheral nervous system. The central nervous system is comprised of the brain and spinal cord. The peripheral nervous system is comprised of the cranial and spinal nerves. It is also divided functionally into the voluntary nervous system and the involuntary system. The voluntary system is associated with movement and actions we control.

The involuntary nervous system, also known as the autonomic nervous system, is divided into the sympathetic and parasympathetic nervous system. The sympathetic prepares us for “fight or flight” and causes us to breathe faster, our heart to beat faster, and our BP to increase when we feel challenged. The parasympathetic helps our body to regain control and balance by bringing our pulse, respirations, and BP back to a normal range.

- **Brain**

The brain serves as the control for consciousness and mental processes as well as sensory interpretation. The peripheral nervous system is a network of nerves that bring messages to and from the brain. These messages regulate our body functions, our response to sensory stimulation, and enable us to move and function.

Because the brain is central to our thought process, the nervous system is considered our most complex and most challenging system. There are organic conditions that can be traced directly to the brain and nervous system.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Nervous	<p>Transmit messages between environment and brain; the brain and the body</p> <p>Sensory input and output;</p> <p>Regulation of body systems</p>	<ul style="list-style-type: none"> <li>Brain</li> <li>Spinal cord</li> <li>Nerves</li> </ul>	<p>Stroke/TIAs</p> <p>2 types:</p> <ul style="list-style-type: none"> <li>Embolic (due to a Blood clot)</li> <li>Hemorrhagic (due to a broken blood vessel that breaks in the brain)</li> </ul>	<p>Not able to move part of their body, decreased vision or speech may be impaired. TIA's happen quickly and last from 2 - 30 sec. Functional ability is usually not impaired. A more serious stroke needs immediate medical attention.</p>	<p>BP should be monitored. Report symptoms such as headaches, followed by increasing neurological deficits immediately to you supervisor or call 911. A home safety evaluation to assess the environment may eliminate falls. Scatter rugs and clear pathways will help prevent falls.</p>
			<p>Alzheimer's Disease</p>	<p>Begins with mild memory loss, and progresses to a deterioration of intellectual function. Consumers depend on others to perform ADLs &amp; IADLs, and may have seizures, hallucinations, delusions, paranoia and depression. The end stage of this disease is terminal. Consumers experienced a slowed thought process.</p>	<p>A home safety evaluation to assess the environment may eliminate falls. Removing scatter rugs and having clear pathways will help prevent falls. The care-giver needs to allow the consumer to do what they can. A structured routine to daily activities may help the client function to their optimal ability. Reality orientation may work in the earlier stages of the disease, but may not work as disease progresses. Patience and understanding will aid the care giver when caring for a person with Alzheimer Disease.</p>

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Nervous System (continued)			Multiple Sclerosis	A range of disabilities affecting movement, vision, speech and function. It may be caused by the body's immune system attacking the person's Central Nervous System. May experience urinary retention, double vision, tremors, cognitive deficits, and mood disorders.	Avoid over-exertion, exposure to extreme hot and cold and stressful situations. Encourage consumer to follow a regular schedule of daily activities and exercise. Clients may tell you that they have "good and bad" days and need to be reserve their energy whenever possible. A home safety evaluation to assess the environment may eliminate falls. Remove scatter rugs and keep clear pathways to prevent falls.
			Lou Gehrig's Disease (ALS)	Muscle weakness and muscle atrophy (wasting, decrease in size of the muscle). This is a terminal disease.	A rehabilitation program can help the client maintain their independence. As mobility decreases, the client will need to be turned frequently to prevent skin breakdown. Encourage the use of assistive devices. Alternative methods of communication may be needed as disease progresses.
SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)

<b>Nervous System (continued)</b>			Parkinson's	Stiffness and trembling of the muscles. It also interferes with walking, speech and facial expressions.	Usually on a drug treatment program, and the medication schedule is very important to maintain consistently. Plan daily activities to prevent fatigue. PT & OT referrals may be beneficial. A home safety evaluation to assess the environment may eliminate falls. Remove scatter rugs and keep clear pathways to help prevent falls.
			Spinal cord Injury/Head Injury	Disability will be determined by the severity of the injury. There are partial cord injuries and complete cord injuries. The higher and more complete the injury, the greater the damage to the nervous system.	Consumers should be encouraged to maximize their abilities whenever possible. For high cord injuries, the consumer will be very dependent and the care giver will need to meet most of their ADLs, IADLs needs. Good skin care and ROM exercises will be critical for the client.
			Dementia	Forgetfulness, memory loss and a decrease with intellectual function.	Client may benefit from cues and reminding to accomplish ADLs & IADLs. Client may wander and get lost in his/her own home. Reality orientation may be helpful in early stages. Patience and understanding will aid in the caring for a person with Alzheimer Disease.

<b>SYSTEM</b>	<b>FUNCTION</b>	<b>ORGANS</b>	<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
---------------	-----------------	---------------	-----------------	---------------------------	---------------------------

<b>Nervous System (continued)</b>			<p>Epilepsy</p> <p>Over stimulation of nerve cells of the brain</p>	<p>Vary according to the amount and type of brain tissue involved. Sudden loss of consciousness, frequently preceded by an aura, and immediately followed by generalized convulsions in which there are biting movements and violent shaking of the limbs. Twitching of the eyes and/or mouth may occur. Lapse of attention or a moment of absentmindedness. Twitching of particular muscle groups, usually of the hand and leg.</p>	<p>Monitor closely. Keep the individual safe from harm by removing objects in the individual's immediate surroundings.</p>
			<p>Anxiety</p>	<p>A feeling of apprehension, worry, uneasiness or dread. The source is often nonspecific or unknown. Excess anxiety interferes with the client's ability to function.</p>	<p>Encourage the client to express their feelings and concerns. Be calm and caring. Clear, simple validating statements are helpful. If the stressor is known, it should be avoided.</p>

			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
<b>Nervous System (continued)</b>			<p>Post Traumatic Stress Disorder (PTSD)</p> <p>Development of characteristic symptoms following exposure to an extreme traumatic stressor involving direct personal experience of an event that involves actual or threatened death or serious injury, or other threat to one's physical integrity of another person; or learning about unexpected or violent death, serious harm, or threat of death or injury experienced by a family member or other close associate.</p>	<p>Intense fear, helplessness, horror; in children – disorganized or agitated behavior. Persistent experiencing of the traumatic event, persistent avoidance of stimuli associated with the trauma and numbing of general responsiveness, persistent symptoms of increased arousal. Symptoms must be present for more than one month and the disturbance must cause significant distress or impairment in social, occupational, or other important areas of functioning.</p>	<p>Encourage the client to express their feelings and concerns. Be calm and caring. Clear, simple validating statements are helpful. If the stressor is known, it should be avoided.</p>
			<p>Depression</p>	<p>Loss of interest in all usually pleasurable outlets, such as food, friends and hobbies. The consumer may have feelings of worthlessness, concerns with death, and may attempt self injury.</p>	<p>The care giver should be warm and caring and maintain a positive attitude, while not be overly cheerful. Report any and all threats of suicide to your supervisor immediately.</p>
			<p>Schizophrenia</p>	<p>Hallucinations, either visual or auditory, may be both.</p> <p>Psychotic behaviors (inability to differentiate reality from fantasy) delusions</p>	<p>Medication is used to control the symptoms.</p> <p>The consumer may experience hallucinations, delusions, thought disorder and bizarre behavior.</p> <p>They may hear voices or talk to no one</p>

			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
			<p>Bipolar Disorder</p> <p>A chemical disorder in the brain. that alters the person's insight or perception with thinking, language, communication, behavior, affect, social functioning and attention</p>	<p>Mania, Mild to severe depression with periods of normalcy</p>	
			<p>Traumatic Brain Injury (TBI)</p>	<p>Traumatic injuries to the brain, also called intracranial injury, or simply head injury, occurs when sudden trauma causes brain damage. TBI can result from a closed head injury or a penetrating head injury and is one of two subsets of Acquired Brain Injury (ABI). The other subset is non-traumatic brain injury (i.e. stroke, meningitis).</p>	<p>Controlling blood pressure. Maintaining adequate oxygen supply to the brain. Assistance with ADL's and IADL's. Medications for aggressive behaviors, alterations in mood, seizures, pain, anxiety, psychostimulants and hypnotics.</p>

			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
			Autism	<p>Markedly abnormal or impaired development in social interaction and communication and a markedly restricted repertoire of activity and interests. There may be marked impairment in the use of multiple non-verbal behaviors (e.g., eye-to eye gaze, facial expression, body postures and gestures) to regulate social interactions and communications. Failure to develop peer relationships. Little to no interest in developing friendships. Lack of spontaneous seeking to share enjoyment, interests or achievements. Restricted, repetitive, and stereotyped patterns of behavior, interests, and activities. May be an associated diagnosis of Mental Retardation. Behavioral symptoms such as hyperactivity, short attention span, impulsivity, - aggressiveness, self-injurious behaviors and temper tantrums. Odd responses to sensory stimuli, (e.g., high threshold for pain, oversensitivity to sounds or being touched, exaggerated reactions to light or odors, fascination with certain stimuli). Limited diet. Pica. Sleeping abnormalities such as awakening at night and rocking. Abnormalities of mood and/or affect.</p>	<p>Care of the presenting symptoms is most important. Keeping the consumer safe and free from harm. Assisting with ADL's and IADL's. medications as ordered for mood and behavior disorders. Keeping a specific routine from day to day as recommended.</p>

			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
			Asperger's Disorders	Has many of the same features of Autism, usually without the Mental Retardation but with higher cognitive functioning.	Same as autism with special focus on higher cognitive abilities.
<b>Nervous System (continued)</b>			Mental Retardation (M.R.)  MILD MENTAL RETARDATION  IQ LEVEL 50-55 TO APPROXIMATELY 70  MODERATE RETARDATION  IQ LEVEL 35-40 TO 50-55  SEVERE MENTAL RETARDATION  IQ LEVEL 20-25 TO 35-40  PROFOUND MENTAL RETARDATION  IQ LEVEL BELOW 20 OR 25	Significantly sub-average general intellectual functioning that is accompanied by significant limitations in adaptive functioning in at least two (2) of the following skill areas: communication, self-care, home living, social/interpersonal skills, use of community resources, self-direction, functional academic skills, work, leisure, health, and safety.	Supportive care in all aspects of need. Medications for symptoms of acute and chronic psychiatric disorders.
	<b>DISCUSS CONDITIONS/DISEASES THAT ARE NOT PRESENTED HERE THAT MAY BE SPECIFIC TO YOUR AREA(S) OF NEED.</b>				

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antiepileptic/Anticonvulsant Agents</b>				
<b>Note:</b> abrupt withdrawal of any of these medications could cause seizures.				
<b>Carbamazepine</b>	Tegretol	Treatment of epilepsy (seizures). (Carbamazepine, Valproic Acid, and Clonazepam are also used for some mental illnesses, such as Depression, Bipolar Disorder.)	sedation, dizziness, unsteadiness, confusion, blurred vision, nausea, vomiting, diarrhea, rash, easy bruising or bleeding, difficult urination	Do not crush Tegretol XR (other tablets may be crushed). The suspension should be shaken well (immediately before each use).
<b>Phenytoin</b>	Dilantin		unsteadiness & decreases mental activity are related to elevated levels of the drug; Others include: dizziness, rash, drowsiness, headache, difficulty sleeping, delirium, slurred speech, nausea, vomiting, overgrowth of gums, lack of appetite, constipation, weight loss	1. The suspension should be shaken well (immediately before each use). 2. If the person is receiving feeding and medication through a tube into their stomach, the tube feeding should be stopped for at least 1 hour before and after the dose of phenytoin is given. (The tube feeding can decrease the absorption of the phenytoin.) 3. Good dental hygiene is very important to prevent overgrowth of gum tissue.
<b>1. Valproic Acid</b> <b>2. Divalproex Sodium</b>	1. Depakene 2. Depakote 3. Depakote Sprinkles		nausea, vomiting, weight gain, stomach cramps, drowsiness, unsteadiness, confusion, tremor, hair loss, easy bruising/bleeding, rash, changes in menstrual cycle drowsiness, confusion, dizziness,	Available in syrup, sprinkle capsules, and enteric-coated tablets. Sprinkle capsules may be opened and the contents sprinkled on a small amount of food (such as applesauce). Do not crush the sprinkles or the enteric-coated tablets.
<b>Clonazepam</b>	Klonopin Paxam		unsteadiness, difficulty sleeping,	Clonazepam will add to the effects of alcohol & other CNS depressants (drugs that slow down
			depression, headache, blurred vision, nausea, vomiting, dry mouth, diarrhea, constipation, rash, increased heart rate, low blood pressure, fainting, slurred speech, tremor	the nervous system). People taking this drug should not drink alcohol.

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antiepileptic/Anticonvulsant Agents continued</b>				
<b>Note:</b> abrupt withdrawal of any of these medications could cause seizures.				
<b>Phenobarbital Sodium</b>	Luminal		drowsiness, confusion, dizziness, difficulty sleeping, depression, headache, nausea, vomiting, constipation, slowed breathing, low Blood pressure	Phenobarbital will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system). People taking this drug should not drink alcohol.
<b>Primidone</b>	Mysoline	See Carbamazepine	same as phenobarbital	same as phenobarbital; Also, the suspension should be shaken well (immediately before each use).
<b>Gabapentin</b>	Neurontin		drowsiness; dizziness; unsteadiness	Give Neurontin at least 2 hours after antacids, such as Maalox-antacids decrease absorption
<b>Lamotrigine</b>	Lamictal		<b>rash</b> ; nausea; dizziness; drowsiness; unsteadiness	
<b>Topiramate</b>	Topamax		weight loss; kidney stones (painful urination, back pain); drowsiness; speech or language problems; confusion; difficulty with concentration; mood changes	
Tiagabine Hydrochloride	Gabitril		dizziness; drowsiness; nausea; nervousness; lack of energy	
<b>Antiparkinsonian Agents</b>				
<b>Benzotropine Mesylate</b>	Cogentin	Used in combination with other drugs to treat symptoms of Parkinson's Disease. Also used to Treat some of the side effects of anti-psychotic drugs.	dry skin; dry mouth; constipation; increased heart rate; difficulty swallowing; confusion; hallucinations; difficulty urinating; increased Sensitivity to light	1. This medicine can reduce the ability to sweat (sweating prevents overheating). Avoid excessive exercise and sun exposure. 2. Drinking fluids, sucking on hard candy (if appropriate) and good dental hygiene can relieve dry mouth.
<b>Trihexyphenidyl Hydrochloride</b>	Artane/Trihexane			
<b>Diphenhydramine Hydrochloride</b>	Benadryl			See "Medications Used in Treating Respiratory Disorders" for information

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antiparkinsonian Agents continued</b>				
<b>Amantadine Hydrochloride</b>	Symmetrel	Used in combination with other drugs to treat the symptoms of Parkinson's Disease. Also used to treat some of the side effects of anti-psychotic drugs and to treat the flu.	dry mouth; nausea; constipation; difficulty sleeping; depression; swelling of legs/feet; dizziness; fainting; headache; difficulty urinating	1. May cause seizures, especially in people with epilepsy. 2. Person should not get up quickly after sitting or lying down; this may cause fainting or dizziness.
<b>Levodopa/Carbidopa</b>	Sinemet	Treatment of Parkinson's Disease		1. Person should not get up quickly after 2. Can take with food to prevent stomach upset 3. Do not take Levodopa with vitamin supplements that contain Vitamin B6 (pyridoxine). This does not apply to products containing Carbidopa, such as Sinemet
<b>Levodopa</b>	Larodopa, Dopar			
<b>Antipsychotic Agents (also known as Neuroleptics)</b>				
		These drugs are mainly used to	EPS (Extra Pyramidal Symptoms)	1. Antipsychotics can make the skin more
<b>Chlorpromazine Hydrochloride</b>	Thorazine	treat psychotic disorders, such as schizophrenia. They are also used	<u>Early stages:</u> decreased appetite, insomnia, elevated blood pressure, Elevated pulse, slight agitation, change in hygiene care, restlessness and increased activity, decreased attention span, increased confusion/disorientation	sensitive to sunlight (causing sunburn, rash, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher),
<b>Clozapine</b>	Clozaril	to treat other psychiatric diseases.	<u>Middle stages:</u> fine tremors in hands, feet, lips & tongue, stiffness in arms, back & neck, slight drooling, occasional rolling of eyes upward, garbled speech, irritability, isolates self	wear protective clothing & wear sun block lip balm.
<b>Fluphenazine Enanthinate</b>	Prolixin		<u>Late stages:</u> excessive drooling, severe muscle rigidity, severe tremors of hands, feet, lips & tongue, eyes roll upward & treading in place.	2. Antipsychotics can make the person sweat less. Use extra care to not become overheated
<b>Haloperidol</b>	Haldol		remain (no control), slurred speech,	during exercise or hot weather.
<b>Loxapine Succinate</b>	Loxitane			3. Antipsychotics will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.
<b>Mesoridazine Bysylate</b>	Serentil			4. Many of these drugs are available as a concentrated oral liquid & come in a dropper
<b>Molindone</b>	Moban			
<b>Olanzapine</b>	Zyprexa			
<b>Perphenazine</b>	Trilafon			
<b>Pimozide</b>	Orap			
<b>Promazine</b>	Sparine			
<b>Quetiapine Fumarate</b>	Seroquel			
<b>Risperidone</b>	Risperdal			
<b>Thioridazine Hydrochloride</b>	Mellaril			

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antipsychotic Agents (also known as Neuroleptics continued)</b>				
Thiothixene	Navane		Neuroleptic Malignant Syndrome - fever, dark urine, paleness, sweating, muscle stiffness, decreased level of consciousness, increased heart rate	bottle. Measure each dose with the dropper provided and dilute it in at least 1/2 glass (4 ounces) of water or juice. See package information for specific guidelines.
Trifluoperazine	Stelazine			
Ziprasidone	Geodon			
<b>**Clozapine &amp; Carbamazepine should not be used together unless all other like drug combinations have been utilized and proven ineffective. This combination has been proven lethal in past years.</b>			Tardive Dyskinesia - abnormal, involuntary movements that occur after long-term use of antipsychotics; mainly affect the facial muscles, tongue, mouth, hands & feet; movements include; chewing, lip-smacking, puffing of cheeks, grimacing, rapid blinking, etc.  Other: dry mouth; drowsiness; confusion; constipation; difficulty with urination; dizziness; lightheadedness, or fainting can occur when rising too quickly from sitting or lying; sore throat; fever; weakness; skin discoloration; weight gain	6. Clozapine can cause a decrease in the number of certain blood cells that fight infection. Regular lab tests will be necessary to monitor for this adverse effect. Watch for fever, chills, sore throat, weakness, flu-like symptoms & other signs of infection. Report these to the primary care provider as soon as possible.  7. Notify the primary care provider of any signs of tardive dyskinesia.
<b>Methylphenidate Hydrochloride</b>	Concerta	ADHD (Attention Deficit Hyperactivity Disorder)  Narcolepsy	Nervousness, insomnia, dizziness, headache, drowsiness seizures, palpitations, angina, rapid heart rate, nausea, abdominal pain, anorexia, weight loss, rash, itching.	Monitor initiation of therapy very closely, drug may precipitate Tourette syndrome. Drug has abuse potential. Impairs ability to perform tasks requiring mental alertness. Check vital signs regularly for increased blood pressure or other signs of excessive stimulation.  Avoid late-day or evening dosing. Monitor CBC, differential, and platelet counts.

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antidepressants</b> continued				
<b>Tricyclic/Tetracyclic Antidepressants</b>				
<b>Amitriptyline Hydrochloride</b>	Elavil	Usually used to treat depression &	dry mouth; constipation; blurred vision;	1. These drugs can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing, & wear sun block lip balm. 2. These drugs will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol. 3. Drinking fluids, sucking on hard candy (if appropriate), and good dental hygiene can relieve dry mouth.
<b>Amoxapine Hydrochloride</b>	Asendin	other mood disorders; they may also	difficult urination; drowsiness; weakness;	
<b>Clomipramine Hydrochloride</b>	Anafranil	be used for other psychiatric	restlessness; tremor; fast heart rate;	
<b>Desipramine Hydrochloride</b>	Norpramin	disorders. Clomipramine is used to	weight gain; dizziness; lightheadedness	
<b>Doxepin Hydrochloride</b>	Sinequan, Adepin	treat obsessive-compulsive disorder.	or fainting can occur when getting up	
<b>Imipramine Hydrochloride</b>	Tofranil	Imipramine is also used to treat	too fast from a lying or sitting position;	
<b>Nortriptyline Hydrochloride</b>	Pamelor, Aventyl	bed-wetting.	seizures. Amoxapine may also cause tardive dyskinesia (see Anti-psychotic agents)	
<b>Trimipramine Maleate</b>	Surmontil			

• Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antidepressants continued</b>				
<b>Monamine Oxidase Inhibitors (MAO's)</b>				
<b>Phenelzine Sulfate</b>	Nardil	Treatment of depression	Hypertensive Crisis (sudden increase in blood pressure): severe headache, neck stiffness or soreness, nausea, vomiting, sweating, clammy skin, chest pain, heart palpitations  Other: dizziness; lightheadedness or fainting when rising too quickly from a seated or lying position; blurred vision; drowsiness; fast heart rate; trembling; constipation; dry mouth; yellowing of skin/eyes; weight gain	1. If person has signs of hypertensive crisis, call primary care provider immediately! This is a serious adverse effect  2. Several foods & drinks may interact with MAO's to cause hypertensive crisis.
<b>Tranlycypromine Sulfate</b>	Parnate			
				<p style="text-align: center;">These foods must be avoided: (check with dietician for full list of foods):</p> <p>a. cheeses, yogurt, sour cream b. smoked or pickled meats, bologna, pepperoni, salami, summer sausage c. alcoholic beverages and no-alcoholic beer d. caffeine containing products (cola, coffee, tea, chocolate) e. certain fruits/vegetables (sauerkraut, cava beans, bananas, overripe fruit, raisins)</p> <p>3. The person should not take other any medicine unless prescribed by the primary care provider (this include over the counter medicines)</p>
<b>Selective Serotonin Reuptake Inhibitors (SSRI's)</b>				
<b>Fluoxetine Hydrochloride</b>	Prozac	Used to treat depression, obsessive-compulsive disorder, manic-depression, panic disorders & eating disorders	headache, nervousness, difficulty sleeping, drowsiness, dizziness, dry mouth, nausea, diarrhea, itching, rash, and sweating	1. If medicine causes upset stomach, it may be taken with food.
<b>Fluvoxamine Maleate</b>	Luvox			
<b>Paroxetine Hydrochloride</b>	Paxil			

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antidepressants continued</b>				
<b>Sertraline Hydrochloride</b>	Zoloft			2. These drugs will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol. 3. Drinking fluids, sucking on hard candy (if appropriate and good dental hygiene can relieve dry mouth.
<b>Other Antidepressants</b>				
<b>Bupropion Hydrochloride</b>	Wellbutrin	Treatment of depression	agitation; difficulty sleeping; headache; restlessness; confusion; blurred vision; tremor; nausea; vomiting; dry mouth; constipations; rash; seizures	1. Do not discontinue abruptly. 2. Will add to the effect of alcohol & CNS depressants (See #2 above).
<b>Nefazodone Hydrochloride</b>	Serzone	Treatment of depression	headache; drowsiness; difficulty sleeping; agitation; dizziness; confusion; dry mouth; nausea; constipation; tremor; lightheadedness or fainting when-rising too quickly from a seated or lying position.	1. Will add to the effect of alcohol & CNS depressants (See #2 under SSRI special considerations-above). 2. May cause prolonged or painful erections. Contact primary care provider if this occurs.
<b>Trazodone Hydrochloride</b>	Desyrel	Treatment of depression; may also help in treating anxiety and schizophrenia	drowsiness; headache; confusion; tremor; weakness; blurred vision; dry mouth; nausea; dizziness; lightheadedness or fainting when rising too quickly from a seated or lying position	1. Will add to the effect of alcohol & CNS depressants (See #2 under SSRI special considerations-above). 2. May cause prolonged or painful erections. Contact primary care provider if this occurs. 3. Take shortly after a meal or light snack; often prescribed to be given at bedtime due to drowsiness.

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antidepressants continued</b>				
<b>Venlafaxine Hydrochloride</b>	Effexor	Treatment of depression; has also been used for obsessive-compulsive disorder.	headache; drowsiness; dizziness; weakness; nausea; constipation; dry mouth; difficulty swallowing; sweating; heart palpitations; fast heart rate; weight loss; increased blood pressure	<ol style="list-style-type: none"> <li>1. Take with food.</li> <li>2. Extended release capsules-do not crush, chew or dissolve in water. Swallow whole with adequate amount of fluid.</li> <li>3. Will add to the effect of alcohol &amp; CNS depressants (See #2 under SSRI special considerations-above).</li> </ol>
<b>Stimulants</b>				
<b>Methylphenidate Hydrochloride</b>	Concerta Ritalin	Attention Deficit Hyperactivity Disorder (ADHD)	Weight loss, nausea, vomiting, abdominal pain, rash, tics, dizziness, seizures	<ol style="list-style-type: none"> <li>1. May trigger Tourette's Syndrome in children.</li> <li>2. Observe for signs and symptoms of excessive stimulation.</li> <li>3. Monitor B/P.</li> <li>4. Drug may delay growth.</li> <li>5. Give last daily dose at least 6 hours before bedtime to prevent insomnia.</li> <li>6. THIS IS A SCHEDULE II DRUG.</li> </ol>
<b>Dextroamphetamine sulfate</b>	Dexedrine Dexedrine spansules		Restlessness, tremor, insomnia, dizziness, dry mouth, diarrhea, anorexia.	<ol style="list-style-type: none"> <li>1. Take 30 to 60 minutes before meals and at least 6 hours before bedtime.</li> <li>2. Know that with a seizure disorder the drug may increase seizure threshold.</li> <li>3. Report signs and symptoms of excessive stimulation.</li> <li>4. THIS IS A SCHEDULE II DRUG.</li> </ol>

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Stimulants (continued)</b>				
Amphetamine Dextroamphetamine Dexmethylphenidate hydrochloride	Adderall Adderall XR Focalin	ADHD Narcolepsy	Fever, insomnia, nervousness, motor or vocal tics.	<ol style="list-style-type: none"> <li>1. Stress the importance of taking the correct dose of drug at the same time every day.</li> <li>2. Report accidental overdose immediately.</li> <li>3. Report blurred vision to primary care practitioner.</li> <li>4. Monitor B/P's routinely.</li> <li>5. THIS IS A SCHEDULE II DRUG.</li> </ol>
<b>Antianxiety Drugs/Sedatives/Hypnotics</b>				
Alprazolam	Xanax	These drugs belong to a class called benzodiazepines. They are used for:	slowed or difficult breathing; drowsiness; incoordination; dizziness; slurred speech;	1. These drugs will add to the effects of alcohol & other CNS depressants (drugs
Clomipramine, Hydrochloride	Anafranil		lightheadedness; confusion; dry mouth	that slow down the nervous system,
Chlordiazepoxide Hydrochloride	Librium	1. Anxiety disorders; (e.g., post	change in appetite; nausea; constipation; fainting; low blood pressure; change in	possibly causing drowsiness). Person
Clonazepam	Klonopin	traumatic stress disorder, obsessive	weight; itching; rash; sweating	should not drink alcohol.
Diazepam	Valium/Diastat	compulsive disorder)		2. Withdrawal symptoms could occur if long-term or high-dose therapy is suddenly
Lorazepam	Ativan	2. Short-term relief of anxiety: (e.g., before surgery)		stopped.
Oxazepam	Serax	3. Sedation & relief of anxiety before medical procedures (Lorazepam most commonly used)		
Temazepam	Restoril	4. Insomnia (inability to sleep) 5. Schizophrenia (with antipsychotics) 6. Epilepsy (Diazepam, Lorazepam, & Clonazepam) 7. Spasticity (Diazepam)		
Buspirone	BuSpar	Used for the treatment of anxiety disorders.	drowsiness; dizziness; lightheadedness; headache; restlessness; difficulty sleeping; nausea	The full effect of Buspirone may not be seen until after 3 - 4 weeks of treatment.

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Antianxiety Drugs/Sedatives/Hypnotics continued</b>				

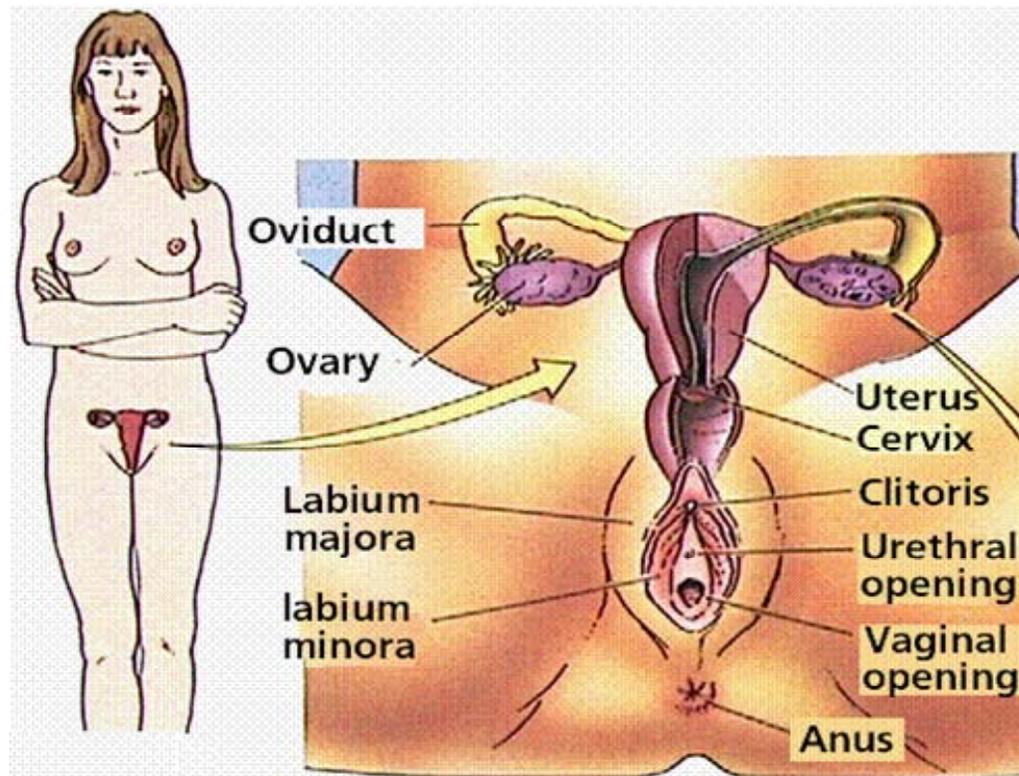
<b>Chloral Hydrate</b>	Noctec	Usually used as a sedative prior to EEG evaluations, dental procedures, or other diagnostic procedures. It is also used for the short-term (less than 2 weeks) treatment of insomnia	stomach irritation; nausea; vomiting; diarrhea; drowsiness; hallucinations; dizziness; incoordination; "hangover" effect; rash; itching	1. Take capsule with a full glass of water. The capsule should not be crushed or chewed. If using the syrup, dilute the dose in at least a half glass of water, ginger ale or fruit juice. 2. This drug will add to the effects of alcohol & other CNS depressants (drugs that slow down the nervous system, possibly causing drowsiness). Person should not drink alcohol.
<b>Diphenhydramine Hydrochloride</b>	Benadryl, Nytol, etc.	Diphenhydramine is an antihistamine that is often used as a nighttime sleep aid. It is also used to treat the symptoms of Parkinson's Disease., the side effects of anti-psychotic drugs & allergies	<i>See under "Medications Used in Treating Respiratory Disorders"</i>	
<b>Hydroxyzine Embonate, Hydrochloride, Pamoate</b>	Vistaril, Atarax	Hydroxyzine is an antihistamine that is also used to treat anxiety	drowsiness; dizziness; thickening of bronchial secretions; headache	Hydroxyzine will add to the effects of alcohol & other CNS depressants (drugs that slow
<b>Zolpidem Tartrate</b>	Ambien	Used for the short-term treatment of insomnia	drowsiness; dizziness; headache; confusion; stomach upset; muscle ache	down the nervous system, possibly causing drowsiness). Should not drink alcohol
<b>Antimania Drugs (Mood Stabilizers)</b>				
<b>Lithium Carbonate</b>	Lithobid, Eskalith, Lithonate, Lithotabs, etc.	Used to treat mania, depression & psychotic disorders.	Signs of lithium overdose/toxicity: Intention Tremor; Double or blurred vision; confusion; severe drowsiness; loss of appetite; vomiting; muscle twitching; slurred speech, walking, seizures, coma : increased thirst; increased urination; nausea; stomach upset; bloating; weight gain; fine hand tremor; weakness; impaired	1. Take after meals. 2. Drink 8 to 12 glasses of water or other fluids per day, and use a normal amount of salt in food. 3. Use extra care in hot water and when exercising. The loss of too much water and salt from the body can lead to serious side effects. 5. Notify the primary care provider if the person has an infection or illness that causes vomiting,

• **Medications used in the Treatment of Nervous System and Psychiatric Disorders (continued)**

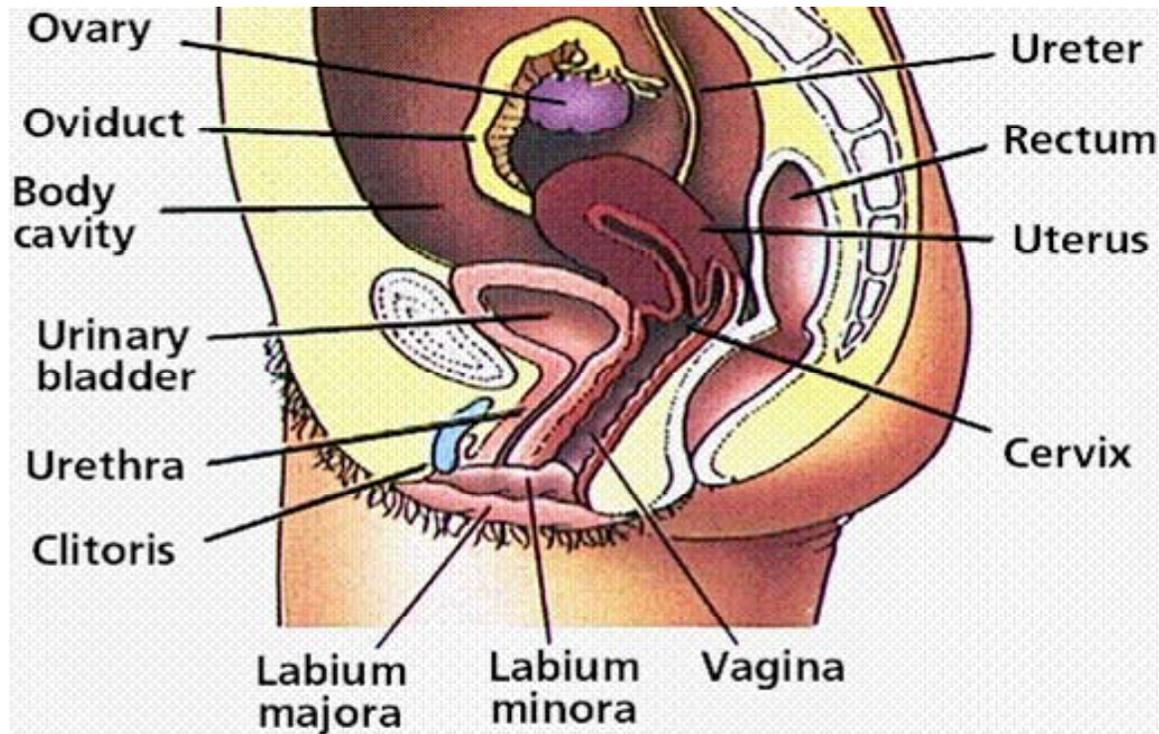
<b>EXAMPLES: GENERIC NAME</b>	<b>EXAMPLES: TRADE NAME</b>	<b>INDICATIONS/USE</b>	<b>MAJOR SIDE EFFECTS (Does not include all side effects)</b>	<b>SPECIAL CONSIDERATIONS</b>
<b>Antimania Drugs continued</b>				
Lithium (continued)			memory; difficulty concentrating; rash;	diarrhea or heavy sweating. These could

			acne; hair loss	lead to the loss of too much water & salt. 5. Do not open, crush or chew extended-release capsules or tablets. 6. Contact the physician as soon as possible if the person shows the signs of lithium toxicity. 7. Lithium levels must be drawn a minimum of 12 hours after the last dose with no significant change in fluid intake or output.
<b>Carbamazepine</b>	Tegretol	<i>See under "Medications Used in Treating Nervous System Disorders"</i> <i>Anticonvulsant</i>		
<b>Valproic Acid</b>	Depakote,	<i>See under "Medications Used in Treating Nervous System Disorders"</i> <i>Anticonvulsant</i>		
Divalproex Sodium	Depakene Depakote Sprinkles			
There is additional drug information at the end of this unit for use as indicated/warranted.				

# Reproductive -- Female



# Reproductive -- Female



- **BODY SYSTEM TABLE**

**REPRODUCTIVE SYSTEM**

- **GENERAL:**

- **Female**

Female genital organs include the vulva, (labia majora, labia minora, clitoris) vagina, uterus, (cervix and body) fallopian tubes, and ovaries. The body of the uterus is a muscular organ with a glandular lining. The lining is the site of **implantation** and growth of a fertilized egg. The muscular wall stretches and grows during pregnancy, and its contractions accomplishes childbirth.

The fallopian tubes transport ova (eggs) from the ovary to the body of the uterus.

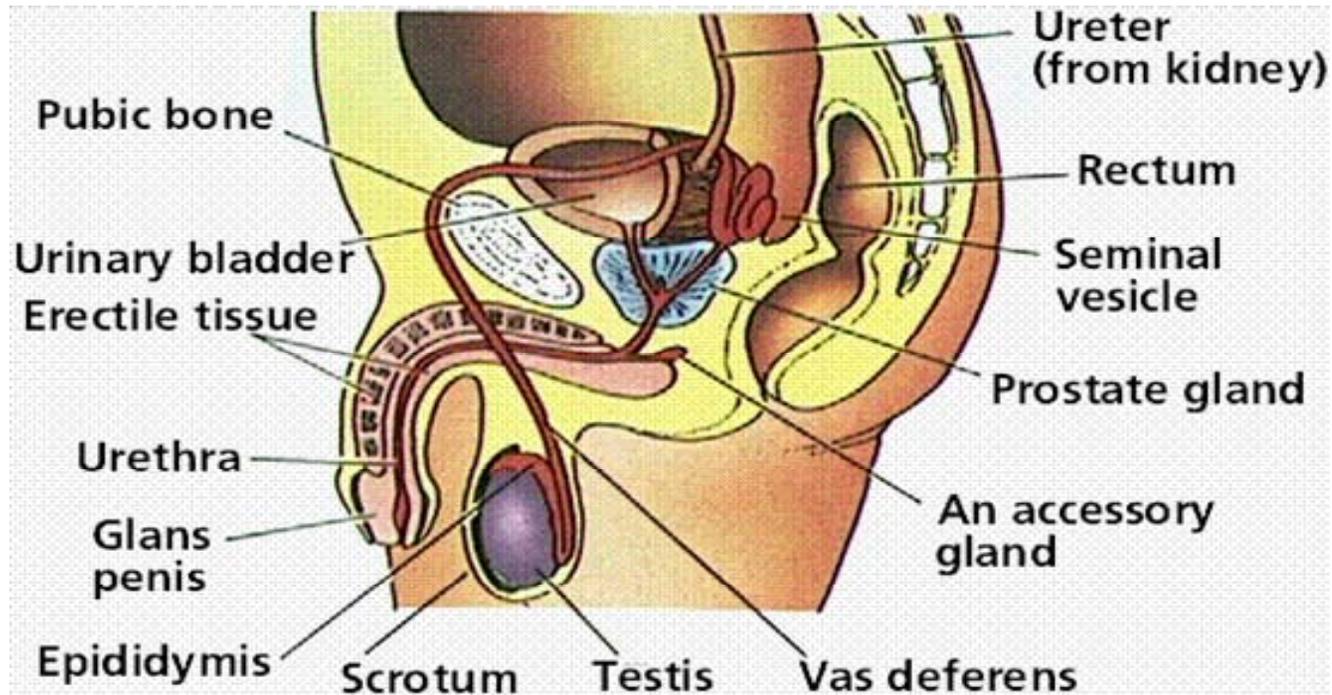
The female produces eggs in the **ovaries**. These are discharged at the rate of one, or more, per month. The egg travels down the fallopian tube where fertilization or union of sperm and egg usually takes place. During this time, the lining of the uterus is thickening as it prepares to receive a fertilized egg. If a developing embryo arrives in the uterus, it implants itself in the lining, establishes a placenta, and grows as a **fetus**. If, however, the egg is not fertilized, the uterine membrane is discarded through the process of **menstruation**. A new membrane is then developed the next month.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>Reproductive System – Female</b>	<b>Birth and Sexuality</b>	Female: <ul style="list-style-type: none"> <li>• Vagina</li> <li>• Uterus</li> <li>• Fallopian tubes</li> <li>• Ovaries</li> <li>• Breasts</li> </ul>	Infertility	Affects both men and women. This condition will interfere with the woman ability to become pregnant. Symptoms may include pain. For the male, this could be caused by abnormal sperm, inability to pass the sperm, infection or ejaculation problems.	Medical evaluation and treatment may help.
			<b>DISEASES</b>	<b>Signs and Symptoms</b>	<b>CARE (may include)</b>
			CANCERS		
			Ovarian	Ovarian cancer is rarely detected in the early stages. Symptoms appear usually when the cancer has spread to other organs, and may include pain, discomfort and abnormal vaginal bleeding.	Comfort care measures
			Cervical	Often there are no symptoms for the early stages of this disease. As the disease progresses, there may be some blood stained discharge from the vagina.	Women should be encouraged to have annual Pap tests for women age 18 and older. The physician may recommend Pap tests at a different frequency, once it's been established that the woman

					has had a number of yearly negative Pap tests.
			Endometrial/Uterine	Abnormal bleeding from the uterus	Most likely a Hysterectomy = surgical procedure:
			Endometriosis=disorder of the uterine lining.	Bleeding and pain.	The consumer should seek medical attention if symptoms persist.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
<b>Reproductive System -- Female</b>			Cysts = fluid-filled sacs	Breast lumpiness and/or pain, usually associated with the woman's menstrual cycle. Most lumps are non-cancerous, however, a painless lump may indicate cancer. Males can also get breast cancer and should do monthly breast self-examination. Lumps should be reported to the clinician.	Monthly breast self examination (BSE) should be encouraged by the clinician. An annual clinical breast exams should be done by a physician for women 40 and older.
			Syphilis	Fever, usually less than 101, sore throat, fatigue, weight loss and enlarged lymph nodes. This may cause an infected person to delay seeking medical care or may make diagnosis difficult. Initial lesions appear 3-4 weeks after becoming infected.	Penicillin is the antibiotic of choice. You should report the following findings to your supervisor and/or primary care provider: any sores, bumps, rashes, blisters, warts on or around the genital, anal area or on any area of the consumer's body.
			Genital herpes	Small clusters of blisters will develop on the vulva and labia and can cause painful ulcers.	The female should seek medical attention.

# Reproductive -- Male



## Body System Table

### Male Reproductive System

#### GENERAL:

The male produces **sperm** in the **testes**, which are suspended outside the body. The sperm are conducted via small ducts to the **urethra**, which runs through the **penis**. The penis is used to inject the sperm into the vagina of the female. The male produces **sperm** in the **testes**, which are suspended outside the body. The sperm are conducted via small ducts to the **urethra**, which runs through the **penis**. The penis is used to inject the sperm into the vagina of the female.

The **testes** consist basically of the tubules where sperm are produced. Sperm are stored in the tubules and are propelled along during ejaculation by muscular contractions.

The **prostate gland** encircles the neck of the bladder like a donut. Prostatic secretions comprise the major portion of semen and have high antibacterial activity.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Reproductive System – Male	Birth and Sexuality	<b>Males:</b> <ul style="list-style-type: none"> <li>• Testes</li> <li>• Prostate</li> <li>• Penis</li> </ul>	Testicular disorders	Most common symptom is swelling.	The man should seek medical attention if it is associated with fever or infection.
			Testicular cancer	First symptom is usually a firm, painless swelling. Some men may have pain and swelling too.	The man should seek medical attention.
			Enlarged prostate	Very common in men over 50. This may constrict the flow of urine. The bladder may become distended.	The man should have an annual physical. The man should seek medical attention if voiding becomes a problem.

Reproductive System – Male			DISEASES	Signs and Symptoms	CARE (may include)
			Urethritis	Inflammation of the urethra, usually caused by a sexually transmitted infection and the man may have a discharge from the penis and pain on urination.	The man should seek medical attention.
			Genital herpes	Small clusters of blisters will develop on the penis and can cause painful ulcers.	The man should seek medical attention.
			Impotence A man's inability to achieve or maintain an erection. There are treatable conditions for this problem. The man should seek medical attention.		
			Syphilis	Fever, usually less than 101, sore throat, fatigue, weight loss and enlarged lymph nodes. This may cause an infected person to delay seeking medical care or may make diagnosis difficult. Initial lesions appear 3-4 weeks after becoming infected.	Penicillin is the antibiotic of choice. You should report the following findings to your supervisor and/or primary care provider: any sores, bumps, rashes, blisters, warts on or around the genital, anal area or on any area of the consumer's body.

• **Medications used in Treatment of Reproductive Disorders**

<b>EXAMPLES: GENERIC NAME</b>	<b>EXAMPLES: TRADE NAME</b>	<b>INDICATIONS/USE</b>	<b>MAJOR SIDE EFFECTS (Does not include all side effects)</b>	<b>SPECIAL CONSIDERATIONS</b>
<b>Androgens</b>				
<b>Testosterone Cypionate</b>	Delatestryl, Depo- Testosterone	This is a male hormone used to treat testosterone deficiency. It is	acne; pain at injection site; flushing; fluid retention; increased hair growth; nausea; aggressive behavior; headache;	1. The primary care provider should be notified if the person has painful, prolonged erections.
<b>Enanthate Propionate</b>	Histerone	sometimes used in women for breast cancer	depression; sleeplessness	2. Injections are given every 2 - 4 weeks.
<b>Estrogens</b>				
<b>Conjugated Estrogens</b>	Premarin Congest Cenestin	This is a female hormone used for Estrogen deficiency states: female hypogonadism, ovariectomy, primary ovarian failure.	swelling of hands, feet or legs; breast enlargement or tenderness; menstrual changes; breast tumors; depression; nausea; headache	Estrogens can contribute to blood clot formation. Notify the primary care provider if the person has signs of a blood clot; they include: calf or groin pain (may be accompanied by swelling or warmth); extremity numbness or weakness; chest pain; shortness of breath; severe headache; change in vision or speech; abdominal pain.
<b>Progestins</b>				
<b>Medroxyprogesterone</b>	Provera, Depo- Provera	This is a hormone that is used orally to treat irregular menstrual flow & absence of menstrual flow. Treatment of advanced unresponsive endometrial or renal carcinoma.	fluid retention; breakthrough bleeding; change in menstrual flow; absence of menstrual flow; depression; weakness; increased breast tenderness; pain at injection site; suicide ideation; changes in mental status	1. Progestins can contribute to blood clot formation. Notify the primary care provider if the person has signs of a blood clot; they include: calf or groin pain (may be accompanied by swelling or warmth); extremity numbness or weakness; chest pain; shortness of breath; severe headache; change in vision or speech; abdominal pain.
Hydroxprogesterone	Hyluntin, Prodrox, Pro-Depo.			
Megestrol Progesterone	Megace Prometrium, Prochieve	It is also used with estrogens in hormone replacement therapy. The injection is usually used to prevent pregnancy.  Treatment of anorexia, weight loss, and cachexia associated with AIDS  Infertility  Prevention of cell overgrowth in the uterine lining		2. This drug can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing, & wear sun block lip balm.

• **Medications used in Treatment of Reproductive Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Progestins continued</b>				
Medroxyprogesterone (continued)				3. The oral tablets may be prescribed for only 5 - 10 days out of the month or they may be prescribed for daily use. Pay close attention to the primary care provider's directions for use. 4. The injection is usually given every 3 months.
<b>Oral Contraceptives</b>				
Ethinyl Estradiol Norethindrone, Desogestrel, Ethynodiol, Drospirenone	Brevicon, Ortho-Novum, Tri-Norinyl, Levlen, Tri- Levlen	Used to prevent pregnancy, to treat  excessive or painful menstrual bleeding or to treat endometriosis,	swelling of hands, feet, or legs; breast  enlargement or tenderness; nausea; diarrhea; bloating; headache	1. Contraceptives can contribute to blood clot formation. Notify the primary care provider if the person has signs of a blood clot; they include: calf or groin pain (may be accompanied by swelling or warmth); extremity numbness or weakness; chest pain; shortness of breath; severe headache; change in vision or speech; abdominal pain.
Ethinyl Estradiol & Levonorgestrel		management of acne		2. If oral contraceptives are taken to prevent pregnancy, additional protection should be used when taking anti-epileptic drugs and antibiotics. These drugs can decrease the effectiveness of oral contraceptives.  3. Check with the primary care provider to determine how to handle a missed dose. If oral contraceptives are being used to prevent pregnancy, additional protection should be used during the rest of the month.  4. This drug can make the skin more sensitive to sunlight (causing rash, sunburn, itching). Person should stay out of direct sunlight, wear sun block (SPF 15 or higher), wear protective clothing, & wear sun block lip balm.

## ◆ Administration of Vaginal Medications

---

**Creams, jellies, tablets, foams, suppositories, ointments, or douches are generally the form of medications administered via this route.**

### ● Administration Technique

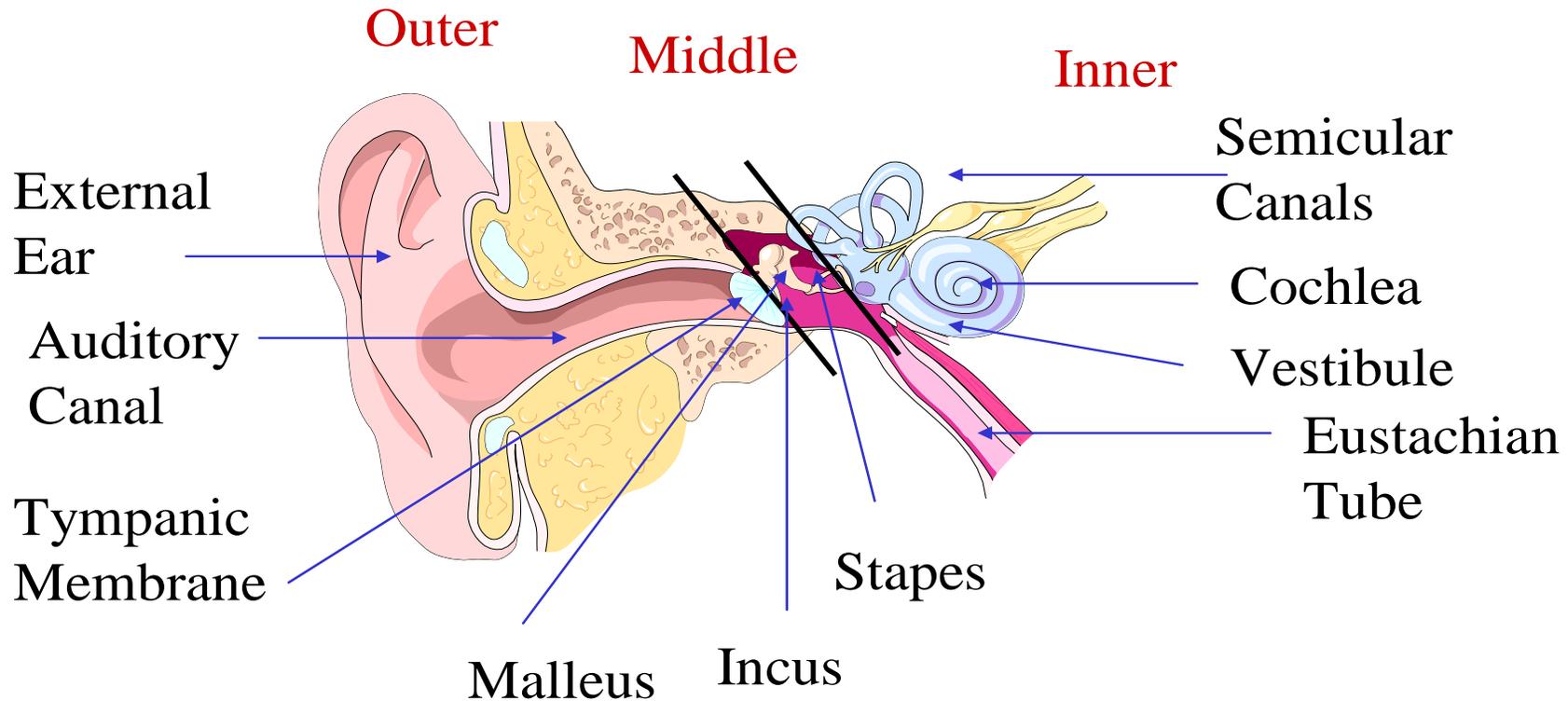
---

1. **Equipment** – Prescribed medication, vaginal application (if applicable), perineal pads, water-soluble lubricant (for suppository), gloves, and paper towels.
  
2. **Technique** –
  - a. Wash hands and gather equipment needed.
  - b. Remember the EIGHT RIGHTS.
  - c. Explain the procedure to the person.
  - d. Ensure privacy.
  - e. Have the person void for comfort.
  - f. Put on gloves.
  - g. Prepare prescribed medication;
  - h. Ask the person to lie down on their back, with their hips on a pillow. Ensure respect while the person is getting into this position.
  - i. Separate labia with a non-dominant hand to expose vagina.
  - j. Insert medication approximately 2 inches upward and backward into the vagina.
  - k. Remove equipment and assist the person to a position of comfort.
  - l. Discard used materials and wash hands thoroughly.
  - m. Document, document, document!

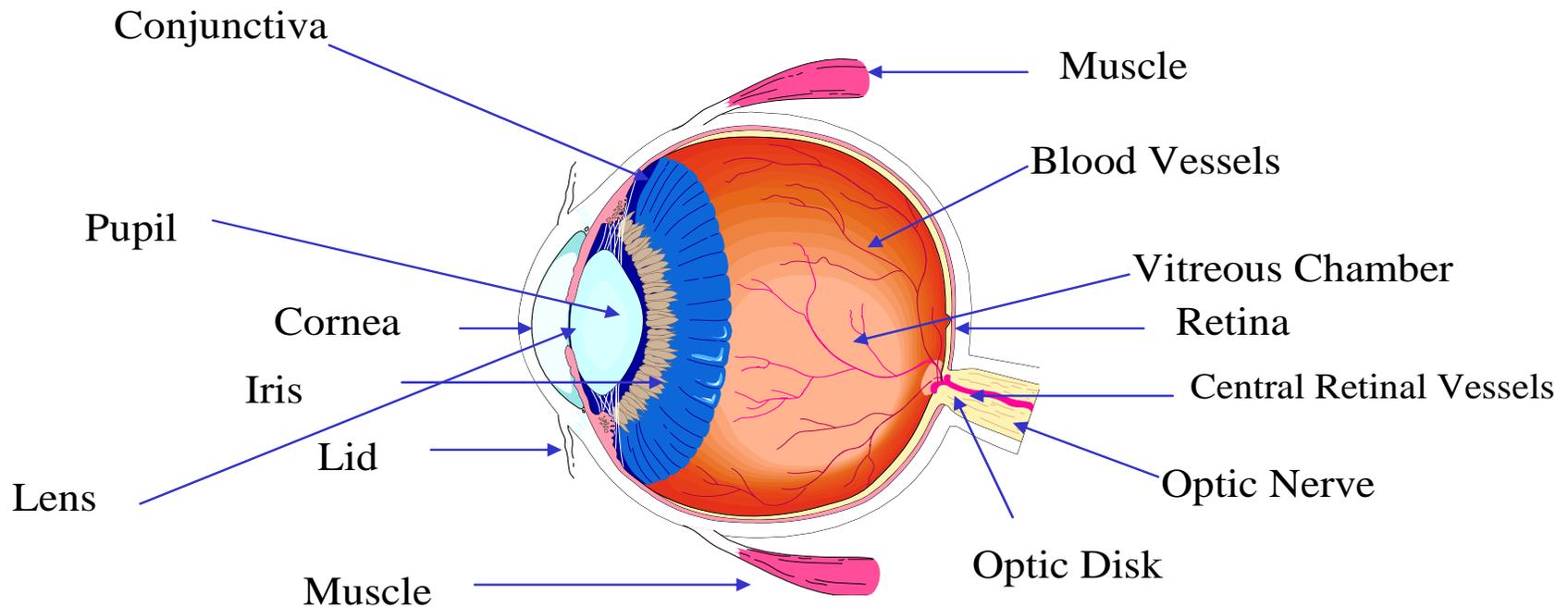
THIS PAGE LEFT INTENTIONALLY BLANK FOR FORMATTING PURPOSES.

PLEASE USE AS A “NOTES” PAGE.

# Sensory – The Ear



# Sensory – The Eye



## SENSORY SYSTEM

### GENERAL:

- **Ear**

Understanding the full function of our ears is critical as we consider how they contribute to our everyday activity. Most of us are quick to consider their contribution to our ability to communicate through our sense of hearing. However, they also are responsible for our sense of balance. The external ear's function is to funnel sound waves into the middle ear, which in turn sends vibrations on to the inner ear, where our real sense of hearing is located. The actual canal to the middle ear is blocked by the tympanic membrane. The outer ear can cause a series of problems ranging from hearing loss or impairment due to obstruction or infections. Wax buildup is common in this area. It is in this area that we add medications, usually in the form of drops or liquid. The middle ear can also become infected, and it is this area that produces the earache discomfort due to pressure against the eardrum. The middle ear also connects to the naso-pharynx, which serves to equalize pressure against the eardrum when we fly.

- **Eye**

It is estimated that 90% of the information sent to a person's brain enters the nervous system through the eyes. Their bone orbits within the skull from all sides but the front protect the eyes. Infections and irritations to the eyes are especially bothersome because we rely on our eyes for so many daily activities.

The nerve endings in the eyes are very sensitive and even small particles of dust, dirt, or any foreign material can cause discomfort. Medications used in conjunction with eye problems must be administered properly to avoid increasing discomfort. The eyes are very sensitive not only to surface touch, but also to increased pressure within known as intraocular pressure. This means that any pressure exerted against the external eye is transmitted to the inner eye. Think about this when administering eye drops and place the medication container close to the surface of the eye rather than dropping the solution from higher off the surface, however do not allow the dispenser to touch the eye itself.

Remember, because we depend so highly on our eyes, it takes a great deal of trust to allow anyone else to even look closely into our eyes to say nothing about putting something into them. Add to this the discomfort that you may cause with inappropriate administration, and you increase the chance that a resident will not allow you to medicate their eyes again.

SYSTEM	FUNCTION	ORGANS	DISEASES	Signs and Symptoms	CARE (may include)
Sensory System	To see, hear, taste and feel and smell.	Ears, eyes, tongue, skin	Blindness, deafness, loss of smell, hearing, sensation, taste		
			Otitis (ear infections)	Pain in the ear. Redness. Drainage. Dizziness, vertigo, loss of balance.	Ear drops. Ear irrigations. Antibiotics.
			Conjunctivitis (eye infection which is highly contagious)	Redness, itching, swelling of the conjunctival sac. Yellow to green colored drainage.	Eye drops/ointments (antibiotic). Eye washes. Oral antibiotics
	Instructors add additional diseases/conditions as you wish.		Cataracts Painless cloudy area in the lens of the eye that blocks the passage of light to the retina.	Cloudy, fuzzy or foggy vision. Seeing glare from lamps or the sun. Difficulty seeing at night. May have double vision.	Monitor for safety. Assure that eyewear is clean and well fitting. Medications as prescribed. Follow PCP instructions.

• **Medications used in Treatment of Ear, Eye Disorders**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Otic (Ear) Drugs</b>				
<b>Benzocaine/ Antipyrine</b>	Americaine	This product is used to relieve pain associated with ear infections. <u>It is not used to treat the infection itself.</u>	burning; itching; swelling or redness of the ear; rash	1. The ear drops may be warmed by holding the bottle in the hand for a few minutes. Do not use other methods to heat the eardrops.  This could cause injury.
<b>Neomycin Sulfate / Polymixin B Sulfate</b>	Myciguent	This is a combination product		

<b>Hydrocortisone</b>		containing antibiotics & a steroid. It is used to treat some ear infections & relieve the swelling associated with the infection.		2. Do not allow the dropper to touch any surface (including the ear). This is to keep germs from getting into the ear drops.
<b>Carbamide Peroxide</b>	Debrox	Used to loosen & remove ear wax.	rash; itching; redness	1. See # 1 & 2 above. 2. Notify the primary care provider if the person has dizziness or has ear pain, discharge/ drainage, rash or redness.
<b>TROLAMINE Polypeptide Oleate-Condensate</b>	Cerumenex	This medicine is used to soften and remove earwax.		3. Trolamine <u>only</u> -the usual administration is to fill the ear canal, insert a cotton plug, allow the medicine to remain in the ear for 15 - 30 minutes, then flush the ear with lukewarm water.
<b>Ophthalmic (Eye) Drugs</b>				
<b>Note:</b> Wash hands before administration. Do not touch the applicator tip to any surface (including the eye). Replace the cap after using.				
<b>White Petrolatum Ocular Lubricant</b>	Lacrilube	A lubricant used to prevent irritation & relieve dryness of the eye	No common or important side effects.	Notify the primary care provider if the person has eye pain, changes in vision, continued redness or irritation or if the condition worsens
<b>Sulfacetamide Sodium</b>	Bleph-10, Sulamyd, Cetamide	An antibiotic used to treat eye infections. It belongs to a class of drugs know as "sulfa drugs".	stinging or burning when applied; itching; redness; swelling or other signs of eye irritation; allergic reaction (rash, difficulty breathing, or swelling of the face)	1. Wait at least 10 minutes before using any other eye preparation. 2. Notify the primary care provider if the person has an allergic reaction, develops a rash, or if the condition does not improve in 3 - 4 days.

• **Medications used in Treatment of Ear, Eye Disorders (continued)**

EXAMPLES: GENERIC NAME	EXAMPLES: TRADE NAME	INDICATIONS/USE	MAJOR SIDE EFFECTS (Does not include all side effects)	SPECIAL CONSIDERATIONS
<b>Ophthalmic (Eye) Drugs</b>				
<b>Neomycin/ Gramicidin/ Polymixin B</b>	Neosporin Ophthalmic Drops	This is a combination of 3 antibiotics & it is used to treat eye infections	rash; itching; redness, swelling or other signs of eye irritation; stinging or burning when applied	Notify the primary care provider if the person has an allergic reaction, develops a rash, or if the condition does not improve in 3 - 4 days.
<b>Prednisolone acetate</b>	PredForte	These drugs are steroids that are used to relieve redness, irritation, & swelling of the eyes.	blurred vision; burning, stinging, watering or redness of the eyes; eye infection	1. If using the suspension form, shake well before each use. 2. Notify the primary care provider if the eye condition does not improve after 5 - 7 days or if the condition worsens.
<b>Dexamethasone acetate</b>	Decadron, Maxidex			
<b>Fluorometholone</b>	FML Forte			
<b>Timolol Maleate</b>	Timoptic, Betimol, Istalol, Timoptic OcuDose, Timoptic Ocumeter, Timoptic-XE	These drugs are in a class called "beta-blockers" & lower the pressure in the eyes. They are used to treat glaucoma	Eye: redness of eyes; stinging in eyes or other signs of irritation when applied; increased sensitivity of eye to light; watery eyes; dry eyes; blurred vision  Systemic: slow heart rate; heart palpitations; chest pain; swelling of feet or lower legs; difficulty breathing; nervousness; dizziness; tiredness; headache; itching	1. The person's eyes may become more sensitive to light. Wearing sunglasses & avoiding bright light may help. 2. In diabetics, these drugs can mask some of the signs of low blood sugar (such as fast heart rate & trembling) and change blood sugar levels. 3. The systemic adverse effects may be a sign that the body is absorbing too much drug. If the person experience these effects, notify the primary care provider. 4. Apply gentle pressure to the inner corner of the eye with your finger for about 1 minute after instilling the eye drops. This decreases the systemic absorption.
<b>Betaxolol Hydrochloride</b>	Betoptic			
<b>Pilocarpine Hydrochloride</b>	Isopto-Carpine	Used to treat glaucoma	Eye: blurred vision; decrease in night vision; eye irritation; eye pain; browache; headache  Systemic: increased sweating; muscle tremors; wheezing or difficulty breathing; watering of mouth; nausea; vomiting; diarrhea	1. The systemic adverse effects may be a sign that the body is absorbing too much drug. If the person experience these effects, notify the primary care provider. 2. Apply gentle pressure to the inner corner of the eye with your finger for about 1 minute after instilling the eye drops. This decreases the systemic absorption.

## ◆ Administration of Eye Drops

---

Includes drops or ointments intended for use in the eyes.

### • Administration Technique

---

#### 1. Dosage Forms:

- a. Ocular solutions – sterile, easily administered and usually do not interfere with vision.
- b. Ointments – Longer duration of action than solutions. Do cause alterations in visual acuity.

#### 2. Equipment

- a. Gloves
- b. Prescribed medication.
- c. Manufacturer's droppers.
- d. Paper, tissues or cotton balls.
- e. Sterile eye dressing pads as needed.
- f. Normal saline solution as needed.



#### 3. Technique

- a. Wash hands and assemble ophthalmic medication.
- b. Remember the EIGHT RIGHTS.
- c. Provide for the person's privacy and explain the procedure.
- d. Put on gloves. Clean eye(s) as necessary. Ensure the wiping of the eye from the innermost corner to the outermost corner.
- e. Ask the person to position their head so their face is pointing upward.
- f. Pull gently on the lower lid to make a cup of the lower lid.
- g. Have the person look upward. Drop the specified number of drops into the cup without touching the applicator to the eye surface.
- h. A small amount of ointment is distributed along the exposed lower conjunctival sac after the eyelids and eyelashes have been cleansed about ½ inch of ointment is squeezed from the tube along the exposed sac from inner to outer canthus.
- i. For ointments, instruct the person to close the eye gently and to rotate eye.
- j. For eye drops, ask the patient to close the eyes gently.
- k. Clean area and wash hands thoroughly.

## ◆ Administration of Ear Drops

---

This medication includes drops to treat localized infection of the ear.

### • Administration Technique

---

#### 1. Equipment:

- a. Gloves.
- b. Prescribed otic solution.
- c. Manufacturer's dropper.



#### 2. Technique

- a. Wash hands and assemble equipment.
- b. Remember the EIGHT RIGHTS.
- c. Provide for the person's privacy and explain the procedure.
- d. Ask the person to position their head so that the affected ear is directed upwards.  
Put on gloves.
- e. Determine if the ear needs to be irrigated (obtain order if necessary).
- f. Allow medication to warm to room temperature. Shake well and draw into dropper.
- g. Pull the ear upward and back. Instill the prescribed number of drops. Do not touch the dropper to the ear. If a child, pull ear down and back.
- h. Clean the area and wash hands.

THIS PAGE LEFT INTENTIONALLY BLANK FOR FORMATTING PURPOSES  
PLEASE USE AS A “NOTES” PAGE.

# The Aging Process and Medications

As people age, the whole body begins to change.

The *skin* becomes thinner and all senses (touch, sight, smell, hearing, and taste) begin to deteriorate.

The *circulatory system* may be compromised, slowing down or impeding the flow of blood throughout the entire body.

Changes in the *gastrointestinal tract* may cause increased acid, heartburn, constipation, or loose stools. With all the changes in the GI tract, food absorption may also change.

Our *liver* is the principle organ of metabolism. Biotransformation is the process by which a drug circulating in the blood stream is transformed or metabolized from its original active form to a less active or even inactive form. This is done by the action of enzymes in the liver.

In elderly people, dosages of certain drugs need to be reduced because of impaired liver function brought on by the degenerative changes associated with aging.

The *kidneys* also play a part in the excretion of the drugs from the body. Poor renal (kidney) function can prolong the effects of some drugs. Renal disease and aging are a major cause of decreased renal function.

## ◆ **Injectable Medications**

---

Maine's revised regulations address the issue of injectable medications. They are beyond the scope of this course and your agency will teach you this procedure.