

**LESSON 10  
SECTION 4**

**INSTRUCTOR'S NOTE**

SEE SUPPLEMENT #5 FOR STRUCTURE AND FUNCTION OF THE  
CARDIOVASCULAR SYSTEM

**RECOMMENDATIONS:**

ONLY BLANK SELF TEST QUESTIONS ARE IN TRAINEE'S MANUAL

COMPLETION OF THE SELF TEST SHOULD BE GIVEN AS A HOMEWORK  
ASSIGNMENT

THE TEST WILL BE REVIEWED AT THE BEGINNING OF THE NEXT CLASS AND  
CORRECT ANSWERS GIVEN AT THAT TIME

INSERT SELF TEST ANSWERS FOR CLASS REVIEW  
THE ANSWERS ARE FOUND AT THE END OF THE INSTRUCTOR'S MANUAL

**LESSON 10: MEDICATION CLASSIFICATION**  
**SECTION 5. MEDICATIONS THAT AFFECT THE URINARY SYSTEM**  
**OBJECTIVES**

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the urinary system.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities other than observation for side effects, when administering medications in these classifications.

The medication classifications which will be discussed in this lesson are:

**RELATED INFORMATION**

The urinary system is also referred to as the excretory system. As the name implies, the organs of this system produce urine (liquid waste) which is excreted from the body. The urinary system also helps to control the vital water and salt balance of the body. The organs of this system include: the kidneys, ureters, urinary bladder and urethra.

**SULFONAMIDES**

The sulfonamides were the first medications developed to combat infection. Antibiotics eventually replaced sulfonamides for general infections. However, Sulfonamides remains the medication of choice for urinary tract infections.

**CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING  
SULFONAMIDES**

- Increase fluid intake up to two quarts per day and avoid foods high in calcium.
- Side effects to watch for are:
  - Nausea
  - Vomiting
  - Diarrhea
  - Blood in Urine
  - Skin Rash

Please review Table 5.1 for additional information on sulfonamides.

**Table 5.1**  
**Sulfonamides**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
sulfisoxazole	Gantrisin	Tablet	Urinary Tract Infection	Nausea, vomiting, diarrhea, urinary tract stones, serious skin rash, blood in urine, sensitivity to sun light.	Avoid over use of calcium rich foods.	Increase fluid intake to up to two quarts per day to help avoid stone formation.

## URINARY ANTISEPTICS

These medications are used to treat urinary tract infections. Many people who have had a urinary tract infection have recurrences following a period without symptoms. For this reason, they are often placed on long-term medication therapy. Most of the sulfonamides, as well as some systemic antibiotics such as the erythromycins, may be used to treat these conditions.

## CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING URINARY ANTISEPTICS

Some urinary antiseptics will change the color of the urine. Inform the individual that this may occur. Also, many of these medications may cause stomach upset, therefore, they should be administered with meals or food whenever possible. Some medications work best when the urine is strongly acid or basic; so depending on the medication, it may be necessary to either encourage or discourage fluids and foods high in acid. Your responsibilities include:

- Inform individual of color change in urine;
- Encourage fluid intake - 1-2 quarts/day;
- Find out if acid or base medium is desired

TABLE 5.2

Urinary Antiseptics

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
nitrofurantoin	Furadantin, Macrochantin	Tablet	Most Urinary tract infections	nausea, vomiting, diarrhea, loss of appetite	Encourage acidic fruit juices, particularly cranberry juice.	Give with milk to reduce stomach upset, alert the individual that urine color will be dark brown.
nalidixic acid	NeGram		Gram positive and gram negative bacteria.	Skin rash, blood dyscrasias, blurred vision		May cause false positive clini test (test for sugar in urine)
phenazopyridine hydrochloride (AZO)	Pyridium		Relieves pain associated with urinary tract infection	Ringling in ears, nausea, vomiting	Give with food or milk.	Turns urine red or orange.
sulfamethoxazole-trimethoprim	Bactrim Septra	Tablet & Liquid	Chronic urinary tract infections	sore throat, fever	Take 1 or 2 hrs. before meals for best absorption	Oral suspensions available for people who cannot swallow large pills.

**OTHER DRUGS WHICH EFFECT THE URINARY SYSTEM**

Urinary tract infections may be painful. Pyridium is an analgesic (reduces pain) and may be combined with various urinary antiseptics or used alone. The prefix AZO means that pyridium has been added, i.e., AZO mandelamine. Review Table 5.2 for specific urinary antiseptics. Certain illnesses, and sometimes advancing age, cause the bladder function to become sluggish.

Urecholine is an oral medication used to relieve urinary retention.

Side effects include:

- Cramping
- Diarrhea
- Headache

Study Self Test Questions - Lesson 10: Section 5 -- Medications That Affect The Urinary System

**LESSON 10  
SECTION 5**

**INSTRUCTOR'S NOTE**

SEE SUPPLEMENT #6 FOR STRUCTURE AND FUNCTION OF THE URINARY SYSTEM

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**LESSON 10: MEDICATION CLASSIFICATIONS**  
**SECTION 6. MEDICATIONS THAT AFFECT THE NERVOUS SYSTEM**  
**OBJECTIVES**

At completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the nervous system.
2. Given a specific medication classification, list at least three (3) side effects.
3. State responsibilities, other than observation for side effects, when administering medication in these classifications.
4. List three (3) measures other than medications which can be used to calm a individual.
5. Define epilepsy.
6. Describe observations to make when a seizure occurs.
7. List two (2) medications used to treat extra pyramidal symptoms.

The medication classifications which will be discussed in this lesson are:

**CENTRAL NERVOUS SYSTEM STIMULANTS** - Medications which increase central nervous system functions.

Sub-Classifications:

- AMPHETAMINE & CAFFEINE - Increase mental and physical activity
- CHOLINERGIC BLOCKING MEDICATIONS - Block or stop symptoms associated with Parkinson's Disease and side effects of anti psychotic
- CENTRAL NERVOUS SYSTEM DEPRESSANTS - Medications which decrease central nervous system functions
- SEDATIVE - HYPNOTIC MEDICATIONS - Induce sleep and calm the body
- ANALGESIC MEDICATIONS - Relieve pain
- NARCOTIC MEDICATIONS - Relieve severe pain
- NON-NARCOTIC MEDICATIONS - Relieve mild-moderate pain
- ANTI-INFLAMMATORY MEDICATIONS - Relieve pain due to inflammation
- ANTIPYRETIC MEDICATIONS - Reduce body temperature

- PSYCHOTROPIC MEDICATIONS - Used to treat a variety of emotional disorders
- ANTI ANXIETY MEDICATIONS - Used to treat mild to moderate states of emotional upset
- ANTI PSYCHOTIC MEDICATIONS - Used to treat aggressive and agitated behavior
- ANTIDEPRESSANT MEDICATIONS - Used to relieve depression
- ANTICONVULSANT MEDICATIONS - Used to control seizures

## RELATED INFORMATION

The nervous system controls and coordinates all voluntary and involuntary body activities, even the production of hormones. Sensory receptors of the nervous system, such as the eye and ear, enable us to be aware of our surroundings. Special parts of the nervous system are concerned with maintaining normal day-to-day functions while other parts act during emergency situations and others control voluntary activities.

### NERVES

Many small cells are bunched together to form nerves. Sensory nerves carry sensations to the brain and spinal cord. Feeling is lost when these nerve impulses are interrupted. Motor nerves carry impulses that cause body activity. Paralysis (loss of function) occurs when these nerves are damaged.

For easier understanding, the nervous system can be divided. Remember, though, that the nervous system is one interwoven system, and if one part of it is affected, all of it is affected.

### THE CENTRAL NERVOUS SYSTEM

The term central nervous system (C.N.S.) refers to the brain and spinal cord.

### BRAIN

All mental activities, such as thinking, voluntary movements, interpreting sensations, and emotions are carried out by brain cells. In general, the right side of the brain controls the left side of the body and vice versa.

### SPINAL CORD

The spinal cord is a continuation of the brain and it is about 17 inches long, ending just above the small of the back. Nerves extend from the brain and spinal cord throughout the body.

## AUTONOMIC NERVOUS SYSTEM (A.N.S.)

The autonomic nervous system is concerned with involuntary body activities. It is made up of two parts called the sympathetic and parasympathetic systems. The center of control is in the brain stem. Nerve fibers which carry impulses to control the usual functions of heartbeat, digestion, elimination, respiration, and glandular activity are called parasympathetic.

In times of stress or danger, the heart beats faster, the lungs work harder, and certain glands increase their production. Blood pressure is increased as the body prepares for action. These activities are brought about by stimulation of the sympathetic system.

## SENSORY RECEPTORS

These are the nerve endings found in the skin, joints, nose, mouth, ears, and eyes. All of these structures help relay information to the brain.

## **MEDICATIONS THAT AFFECT THE CENTRAL NERVOUS SYSTEM (C.N.S.)**

In general, the medications that act on the C.N.S. may be divided into two groups: those that stimulate and those that depress its functions.

**CENTRAL NERVOUS SYSTEM STIMULANTS**--Medications which stimulate the C.N.S. These stimulants speed up all body functions; they:

- increase sharpness of sensation and perception
- increase body activity
- increase alertness and concentration
- suppress fatigue and inhibit sleep

C.N.S. stimulants are used for a variety of physical and mental problems. For example, many people start their day with a cup of coffee or tea. Both of these liquids contain caffeine which is a mild C.N.S. stimulant. During the course of a day when one becomes tired, one will have a cup of coffee or tea which "perks" one up. On the other hand, some people who have coffee late at night can't get to sleep.

In addition to caffeine being present in coffee, tea, chocolate and cola sodas, it is available as a medication. The side effects to be aware of include:

- inability to sleep (insomnia)
- restlessness - nervousness
- increased heart rate

Caffeine should be avoided by people who have stomach ulcers because it is irritating to the lining of the stomach.

## AMPHETAMINES

The amphetamines are C.N.S. stimulants. They have the disadvantage of producing tolerance and medication dependency. Therefore, the dosage must continuously be increased in order to achieve the same effect. The amphetamines stimulate the C.N.S. to increase: **Mental and Motor Activity**

Amphetamines are occasionally used in the treatment of depression, however, more often used to treat hyper kinetic children. This may be confusing to you as you might wonder why a stimulant would be given to someone who is already overactive. It is not known why amphetamines calm a hyper kinetic child, but it is known that when a individual is hyper kinetic, amphetamines will calm him down.

### CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING AMPHETAMINES

These medications have many side effects in addition to being habit-forming. They are medications which, when stopped, can cause severe depression. Common side effects are:

- Loss of Appetite
- Dry Mouth
- Fast Heartbeat
- High Blood Pressure
- Restlessness
- Inability to sleep

Amphetamines are also the base of many diet medications. However, because of dependency and side effects, they are not used for weight loss as much as they were in the past. Review Table 6.1 for common C.N.S. stimulants.

Table 6.1

#### Central Nervous System Stimulants

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
amphetamine sulfite	Benzedrine	Tablet	Narcolepsy disease where people fall asleep through out the day.	Restlessness, dry mouth, loss of appetite, high blood pressure	Should not be given	
dextroamphetamine sulfate	Dexadrine		weight loss		Avoid caffeine drinks, as caffeine will make these medications stronger.	
methylphenidate	Ritalin		Hyperkinetic children			

There will be more discussion of C.N.S. stimulants when we describe psychotropic medications, which are medications used for mental disturbances.

## **CENTRAL NERVOUS SYSTEM DEPRESSANTS (C.N.S.)**

C.N.S. depressants have the opposite effects of the stimulants. They decrease the central nervous system's activity:

- decreases sharpness of sensation and perception of stimuli, lessens or slows body activity
- decreases alertness and concentration
- promotes drowsiness and sleep

There are various sub-classifications of C.N.S. depressants. However, regardless of the sub-classifications, it is important to remember that they work by depressing activity.

## **SEDATIVE-HYPNOTIC MEDICATIONS**

Though these terms are often used interchangeably, there is a difference in them. A hypnotic is a medication used to provide sleep, whereas a sedative quiets and relaxes a person without producing sleep. However, due to the fact that a person who is relaxed is likely to go to sleep, hypnotics and sedatives will be described together.

There are two major classes of sedative hypnotic medications known as barbiturates and non-barbiturates. The non-barbiturates were developed in an effort to produce a sedative-hypnotic which did not have adverse effects (e.g., addiction) associated with the barbiturates. So far this goal has not been achieved. In general, both the non-barbiturates and barbiturates produced the same activity.

### **CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING SEDATIVES AND HYPNOTICS**

-- The side effects associated with the sedative-hypnotic medications are an extension of their therapeutic action.

- drowsiness
- lethargy
- dry mouth
- poor balance

These side effects can be collectively referred to as "hangover symptoms." Elderly individuals are particularly sensitive to side effects, especially loss of memory.

A major caution with these medications is the possibility of addiction. Prolonged use of sedative-hypnotics may result in increased tolerance and physical dependence. Once this develops the medication must be used continuously to avoid the onset of withdrawal symptoms.

When possible it is best for individuals to sleep without sedation. At times you may be able to calm and help a individual relax without medication. Some measures include: providing a quiet environment; glass of warm milk, and reassurance. There are many medication interactions associated with sedative hypnotic agents. They potentiate the actions of other depressant medications, leading to greater C.N.S. depression, low blood pressure and muscle relaxation. Some medication classifications which interact with sedatives and hypnotics are:

antihypertensives antihistamines  
 tranquilizers alcohol

- Alcohol is a depressant and should never be used with sedativehypnotics, as the combination of the two may lead to serious depression of the C.N.S.
- Sedative-hypnotics reduce the effectiveness of anticoagulants and oral contraceptives.
- Because of these numerous medication interactions, as with all medications, it is important to let the physician know what medications the individual is taking.
- Life threatening side effects may occur. These include:
  - slurred speech
  - tremors
  - depressed respiration's

If you observe any of these side effects, it is very important to notify the physician or nurse and not give the medication until further directed. Table 6.2 describes some common sedatives and hypnotics.

TABLE 6.2  
 SEDATIVE AND HYPNOTIC MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
<b>Barbiturates</b>	Luminal	Tablet	Induce and maintain sleep	Drowsiness, dry mouth lethargy, hang over effect.	Will increase action of anti-hypertensives, antihistamines, tranquilizers, alcohol	Major caution! Medications can become addictive.
phenobarbital (also used as an anticonvulsant)						
pentobarbital	Nembutal		.			
amobarbital	Amytal		.			
secobarbital	Seconal		.			
<b>Non-Barbiturates</b>						
chloral-hydrate	Noctec		.			
glutethimide	Doriden		.			
flurazepam	Dalmane		.			Dalmane does not leave individual with hang over effect

## **ANALGESIC (C.N.S. DEPRESSANTS)**

Pain primarily functions as a protective signal. Pain may warn the individual of imminent danger (fire) or the presence of internal disease (appendicitis, tumors). Relief from pain is desired when the intensity or duration of pain interferes with a person's ability to function in the activities of daily living. Analgesics are medications which relieve pain.

There are two major sub-classes of analgesics:

- narcotic (strong analgesics)
- non-narcotic (mild analgesics)

## **NARCOTIC ANALGESICS**

Narcotic analgesics are capable of altering or relieving severe pain and are primarily used to relieve pain of trauma, such as a broken leg, a heart attack, terminal illness and pain associated with surgery.

Narcotics are controlled substances and are placed in Schedule II of the Controlled Substance Act. You may wish to review the section on Care of Controlled Substances.

## **CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING NARCOTICS**

Narcotics are derived from opium or synthetic preparation. Morphine sulfate is the strongest narcotic and is an opium preparation. Demerol is synthetic (man-made) and is almost as strong as morphine. Narcotics have some common side effects:

- slow respirations
- nausea
- vomiting
- constipation
- sweating (diaphoresis).

Before these medications are given, the respiratory rate should be checked for 1 full minute. If respirations are below 12 breaths per minute, the medication should not be given. If you are observing an individual on narcotics, your responsibility is to check the RESPIRATORY RATE FREQUENTLY. Please see Table 6.3 on next page.

**TABLE 6.3  
NARCOTIC ANALGESICS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
morphine sulfate (opium derivative)	Same	Tablet & Injection	Severe pain	Decreased respirations, sweating nausea, vomiting, constipation.- In addition to above dizziness.	Will increase activity of all CNS depressants	Respiration's are checked before giving and while individual is on medication.
meperidine hydrochloride (synthetic)	Demerol					In general synthetic preparations have the same side effects but are less severe then opium derivatives. Give with milk or food
oxycodone hydrochloride (synthetic)	Percodan Percocet	Tablet				Same as morphine
pentazocaine hydrochloride (synthetic)	Talwin HCL	Tablet & Injection				Analgesic and antitussive
codeine sulfate (opium derivative)	Same		Analgesic and antitussive-they are part of many cough syrups			
propoxyphene hydrochloride (synthetic)	Darvon, Darvon compound, Darvocet					NOTE: LIMIT ALCOHOL WITH ALL CENTRAL NERVOUS SYSTEM DEPRESSANTS

### NON-NARCOTIC ANALGESICS (MILD ANALGESICS)

- Mild Analgesics
- Antipyretics
- Anti-Inflammatory

Mild analgesics relieve mild to moderate pain without altering consciousness or mental function. In particular these medications relieve pain associated with inflammation (arthritis and gout) and dull aches (headaches and muscle aches).

Antipyretics are medications which reduce fever.

Anti-Inflammatory are medications which reduce pain associated with inflammation.

One medication which can function in all three of these sub-classes is aspirin (acetylsalicylic acid). Aspirin is one of the most commonly used medications in the world. Salicylate is the base of aspirin and is a common preparation found in other medications.

### CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING MILD ANALGESICS AND ANTIPYRETICS

In low doses these medications relieve pain, aches and fever. However, in order to relieve the severe pain associated with arthritis and gout, the medications are administered in larger doses for longer periods of time. Large dose therapy is more frequent-

ly associated with causing side effects. The three most common side effects are:

- ringing in the ears (tinnitus)
- nausea
- headache

There is always the possibility of an allergic response and if you observe signs of this, you must notify the doctor or nurse as soon as possible.

Salicylate based medications are irritating to the stomach lining and should be administered with milk or after meals which helps decrease stomach irritation.

**TABLE 6.4  
MILD ANALGESICS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
*acetylsalicylic acid	Aspirin, Empirin, Anacin	Tablet, Liquid & suppositories	Analgesic antipyretic, anti-inflammatory	ringing in ears, nausea, vomiting, diarrhea	Give with milk to reduce gastric irritation. Increase effectiveness of anti-coagulants	Should be avoided if individual has gastric problems.
*acetaminophen	Tylenol, Datril		Analgesic, antipyretic	Drowsiness		Used for individuals who cannot take aspirin.

## ANTI-INFLAMMATORY NON-STEROID MEDICATIONS

Anti-inflammatory medications are used primarily to relieve inflammation of one or more joints which accompanies problems such as arthritis, gout and bursitis.

Review Table 6.5 for specific information on anti-inflammatory medications. As you will note, side effects are similar to the salicylates.

**TABLE 6.5  
ANTI-INFLAMMATORY AGENTS (NON-STEROID)**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
Ibuprofen	Motrin	Tablet	Rheumatoid arthritis, and Osteoarthritis	gastric upset, nausea, vomiting, constipation and/or diarrhea	Give with meals and milk to reduce gastric upset.	A non-steroid anti-inflammatory
phenylbutazone	Butazolidin	*	Arthritis, gout		Avoid antacids with high salt content.	Should not be given to individuals with a history of gastric ulcers.
Indomethacin	Indocin			As above, plus: dizziness, depression, mental confusion.		

\* motrin is also used for pain associated with menstruation.

## **ANTI-ANXIETY MEDICATIONS**

Anxiety, tension, and nervousness are symptoms caused by situations which are interpreted as being threatening or dangerous. These psychological (mental) conflicts can cause physiological (body) changes, such as trembling, sweating, nausea and increased heart rate. Most people, at some time in their lives, have experienced these uncomfortable feelings. When the cause of the conflict is removed, the body returns to a more relaxed state (autonomic nervous system controls this state). However, if for some reason the source of anxiety continues, the individual may develop a neurosis which is defined as an "accumulation of anxiety and tension." Neurosis falls under the term "mental illness", which is a broad title covering a number of emotion disturbances involving changes in personality and behavior. Psychosis, defined as a "loss of contact with reality", is also a form of mental illness. In general, psychosis or psychotic state is more severe than a neurosis or a neurotic state.

Psychotropics is a term used to cover a broad range of medications. These medications are commonly referred to as tranquilizers and the two terms are used interchangeably. Psychotropics do not cure emotional disorders, but they do help to relieve anxiety, aggressive behavior, and depression. Once these symptoms are relieved, a person is more receptive to other forms of treatment.

Anti-anxiety medications are used to treat mild to moderate states of emotional upset. These agents are widely used -- sometimes for extended periods of time.

### **CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTI-ANXIETY MEDICATIONS**

The actions of anti-anxiety medications resemble those of barbiturates but cause less drowsiness and confusion. Some of these medications are also used for their anticonvulsant properties and will be discussed later in this section.

All of these medications can cause mental and physical dependence. Because of this dependence, whenever these medications are discontinued it should be done on a gradual basis in order to prevent withdrawal symptoms.

Side effects which may occur will resemble those of many C.N.S. depressants: drowsiness, dizziness and constipation. In addition to these symptoms, others which may occur include:

- allergic reactions
- nausea/vomiting
- low blood pressure
- slurred speech

Nausea and/or vomiting can be reduced if these medications are given with or after meals.

See Table 6.6 for the more common anti-anxiety medications.

**TABLE 6.6  
ANTI-ANXIETY MEDICATIONS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
chlordiazepoxide hydrochloride	Librium	Tablet & Injection	Reduces anxiety and promotes a feeling of relaxation	Drowsiness, fatigue, nausea, constipation, confusion, excitement, slurred speech	Will increase the effectiveness of antihypertensives and all other CNS depressants including analgesics.	All of these medications can cause addiction.
diazepam	Valium		Also used for mild depressant and to relax muscles.			Use with caution in individuals with developmental disabilities.
oxazepam	Serax	Tablet				
chlorazepate	Tranxene					

NOTE: THE INDIVIDUAL SHOULD NEVER MIX ALCOHOL WITH THESE MEDICATIONS

## ANTI PSYCHOTIC MEDICATIONS

Anti psychotic medications are used for the treatment of aggressive and agitated behavior. These medications are stronger than the minor tranquilizers so, in addition to some of the common side effects of C.N.S. depressants and mild tranquilizers, there are more severe side effects which may occur.

### CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTI PSYCHOTIC MEDICATIONS

Major tranquilizers are effective across a wide range of dosages. The dosage is usually increased gradually over a period of seven to fourteen days or until symptoms are controlled or side effects occur. Due to the physical and mental dependence on these medications, they should not be stopped abruptly because withdrawal symptoms may occur.

The major (severe) side effects which occur are grouped together and called extra pyramidal symptoms (EPS). These symptoms collectively are uncontrollable muscle spasms and can be broken down to: tremors of hands and feet, shuffling walk, body rigidity, restlessness.

Extra pyramidal symptoms, for the most part, can be stopped by discontinuing the anti psychotics or if these medications can't be stopped, other medications may be used to treat these symptoms.

However, if these symptoms (EPS) are not corrected, the person can progress to Tardive Dyskinesia which is a combination of EPS and more severe, irreversible side effects. The most visible sign is around the mouth and jaws. The tongue has a snake like movement, jutting in and out. In addition, there are some internal changes which are life threatening. The liver and circulatory systems are prime areas for destruction. Visible signs of this damage may be: (1) liver damage - yellow color to the eyes and skin (jaundice), and (2) circulatory damage - blood disorder (dyscrasia).

A blood dyscrasia is either abnormal blood cell formation or absence of adequate production. The initial signs of a blood dyscrasia resemble those of a common cold: a tired, aching feeling, sore throat, fever and swollen glands in the neck.

If these signs appear and are due to a blood dyscrasia, the person needs immediate medical attention. Fortunately, most people who are on long-term anti-psychotic medications also have blood tests done on a regular basis. This helps to monitor any early liver and blood destruction which may be occurring.

It has also been noted that individuals taking the anti psychotics develop a sensitivity to sunlight. As much as possible, these people should avoid excessive exposure to sunlight and be encouraged to use a good sunscreen. Table 6.7 will supply you with additional information on specific anti psychotics.

TABLE 6.7  
ANTI PSYCHOTIC MEDICATIONS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
chlorpromazine	Thorazine	Tablets, liquids & suppositories	Restoration of emotional calm. relief of severe anxiety, agitation, and psychotic behavior.	Drowsiness, allergic reaction, dry mouth, constipation, and low blood pressure.	Will increase effectiveness of CNS depressants.	May cause photo sensitivity (change in vision) and skin sensitivity to the sun, encourage individual to use sunglasses and sunscreen
trifluoperazine	Vesprin	Tablet				
thioridazine	Mellaril	Tablet, & liquid		More severe side effects are: extra pyramidal symptoms and Tardive-Dyskinesia		
haloperidol	Haldol			.		
mesoridazine	Sereniti			.		
fluphenazine	Prolixin			.		
thiothixene	Navane	Tablet		.		
molindone	Moban			.		

NOTE: SOME OF THE ABOVE MEDICATIONS ARE AVAILABLE IN A CONCENTRATED FORM WHICH IS A LIQUID. CONCENTRATES ARE VERY HIGH DOSES IN SMALL AMOUNTS, AND SHOULD NOT BE ADMINISTERED BY PARAPROFESSIONALS.

## **ANTIDEPRESSANTS**

Mental depression is a common disturbance that affects most people at one time or another. During depression there are noticeable changes in mood and behavior, along with feelings of frustration and hopelessness. Decreased appetite and insomnia are also common symptoms of depression. The depressed individual appears unable to cope with demands or stresses of living. In severe depression, the thought of suicide may be an acceptable solution. Early recognition and treatment is essential for prevention of the serious consequences of depression. There are three (3) major types of depression.

### **REACTIVE DEPRESSION**

Caused by external factors (death, divorce, illness, change of environment and unemployment). This type of depression is time limited and may not require medication.

### **INTERNAL DEPRESSION**

It is difficult to determine the cause of this depression. It may be intermittent or constant. Internal depression almost always requires medication.

### **MANIC DEPRESSION**

Individual has alternating periods of elation and depression and is almost always treated with a specific medication called Lithium. (See next page)

Several different types of medications are available and they are generally referred to as antidepressants or mood elevators. However, they have an interesting action in that they may stimulate or depress the central nervous system. Therefore, they relieve depression and also relieve anxiety.

### **CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIDEPRESSANTS**

The most common sub-classification of antidepressants used are the tricyclic antidepressants which relieve depression and insomnia that accompany a depressed condition. The side effects:

- dry mouth
- constipation
- low blood pressure
- drowsiness

Review Table 6.8 for additional information on the tricyclic medications.

**TABLE 6.8  
TRICYCLIC ANTIDEPRESSANT AGENTS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
imipramine hydrochloride	Tofranil Presamine	Tablet	Depression, gradual improvement of mood and relief of emotional depression	Dry mouth, constipation, urinary retention, low blood pressure, drowsiness	Interactions will occur with most other medications effecting the nervous system.	After 2-3 weeks, the Tricyclic Antidepressants elevate the mood, improve appetite and increase alertness in about 80% of individuals with depression
amitriptyline	Elavil, Endep		.	.		
doxepin hydrochloride	Sinequan, Adapin		.	.		
desipramine hydrochloride	Pertofrane, Norpramin		.	.		
nortriptyline	Aventyl		.	.		
protriptyline	Vivactil		.	.		

### MONAMINE OXIDIZE INHIBITORS (MAO<sup>1</sup> ANTIDEPRESSANTS)

These medications are not as common as the tricyclic antidepressants. However, under rare circumstances you may have to administer one of these medications. Some significant points to remember with these medications are the Food/Medication Interactions. Foods rich in tyramine (wine, cheese, beer and canned fish) are restricted.

### LITHIUM (Anti-Manic Drug)

Lithium is a drug which is used to treat people who have been diagnosed as having a particular mental disturbance known as manic-depressive behaviors. Lithium is highly individualized and there will be specific directions to follow when administering this medication. Also, individuals who take Lithium need to have routine blood tests, which helps the physician monitor the dosage of Lithium. Avoid situations of severe sweating if taking this drug. May result in toxicity. It is important to maintain adequate salt intake and fluid intake.

### EPILEPSY & ANTICONVULSANT MEDICATIONS

Epilepsy means a tendency to have recurrent seizures. The seizures are not always accompanied by convulsions, but most do involve a temporary interruption of consciousness. The seizures reflect a sudden unruly pattern of brain waves which is manifested in several ways. An individual with epilepsy may always have the same

type of seizure or he may experience a variety of types. An aura or warning is experienced by about 50% of individuals with epilepsy.

The aura is an ill-defined sensation experienced through one of the following senses:

Sight changes - seeing spots in front of one's eyes or a blinding light.

Taste - especially a bitter taste in the mouth.

Hearing - hearing a strange noise.

Smelling - smelling a distinctive odor.

There are three (3) major types of epilepsy. They are:

1. Generalized Tonic-clonic (grand mal)
  - a. aura
  - b. loss of consciousness
  - c. "tonic" phase - spasm of muscles
  - d. "clonic" phase - alternate contraction and relaxation of muscles
  - e. individual sometimes voids involuntarily during convulsion
  - f. individual has no recollection of attack
  - g. often followed by headache and exhaustion and frequently sleeps for several hours
2. Generalized Absence (petit mal)
  - a. brief interruption of consciousness
  - b. sometimes accompanied by twitching of head, eyes or hand
  - c. sometimes seizures are so brief that they go unnoticed
  - d. more common among children than adults
3. Complex-partial (temporal lobe or psychomotor)
  - a. autonomic, purposeless movements that may seem voluntary
  - b. perceptual distortion, e.g., hallucinations
  - c. emotional experience, e.g., sudden intense fear or elation
  - d. memory distortions
  - e. may show stereotyped behavior that is inappropriate for the situation
  - f. individual is not aware of his action--will not remember them

The names in parenthesis had been in use for many years until new understanding brought about new terminology. It will be helpful for you to be familiar with both names, as people tend to use both the old and new names.

## CARE OF INDIVIDUAL DURING A SEIZURE

When an individual has a seizure, the biggest danger faced is injury during the fall or during the clonic phase of the seizure. It is your responsibility to protect the individual from injuring him or herself: loosen any constrictive clothing such as a tie or belt; do not try to constrict the movements of the individual during the seizure as it may result in injuring the individual or yourself; do not try to put anything such as a spoon or tongue blade into the mouth of the individual--he cannot swallow his tongue. If he should develop breathing difficulty, attempt to put him on his side so the tongue blocking the airway is moved forward. Above all, never leave an individual alone during a seizure.

## OBSERVATIONS TO REPORT AND RECORD

- if any aura was experienced, if there was a loss of consciousness
- the way the individual fell (direction), time and length of seizure
- the parts of the body involved, movement of eyes
- skin color, respiration rate, incontinence if any
- type of muscle response (tonic or clonic), any injury that occurred
- how the individual was after the seizure

## CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTICONVULSANTS

The anticonvulsant agents are used for the control of chronic seizures, involuntary muscle spasms or movements characteristic of certain neurological diseases. They are most frequently used in the treatment of epilepsy. Therapeutic agents cannot cure these convulsive disorders, but are used to control seizures without impairing the normal functions of the C.N.S.

Since there are many types of epilepsy, some medications are designed to control all types, while others are more individualized. Barbiturates and tranquilizers are effective anticonvulsants and may be used alone or in conjunction with other anticonvulsants.

Anticonvulsant therapy begins with a small dose of medication which is then increased until either the seizures disappear or medication toxicity occurs. If one medication decreases the frequency of seizures, but does not completely prevent them, a second medication may be added. For example, Phenobarbital, a barbiturate, is sometimes given with phenytoin (anticonvulsant). When you administer anticonvulsants, your responsibilities include observing for possible side effects:

dizziness  
visual disturbances

skin rash  
 increased hair growth  
 gum overgrowth (gum hyperplasia)  
 gastric distress

The increased hair growth is most visible on the upper lip and about the face in the female individual. This is not a harmful side effect and there is little that can be done to prevent it. However, good oral hygiene will help prevent gum overgrowth and subsequent dental problems.

Gastric distress can be minimized by giving large amounts of fluid or giving the medication after a meal.

Table 6.9 list some common anticonvulsants you may use in your agency.

TABLE 6.9  
 ANTICONVULSANT AGENTS (ANTI-EPILEPTIC AGENTS)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
<u>Barbiturates</u> phenobarbital Mephobarbital (Controlled substance)	L u m i n a l, Mebaral	Tablet, & liquid	Control of seizures	Drowsiness, dizziness, visual disturbance, skin rash, increase hair growth about the face.	Give after meals to reduce gastric upset.	Also may cause folic acid deficiency <u>Symptoms of folic acid deficiency:</u> Sore mouth, diarrhea, mental confusion  <u>Source of folic acid:</u> Fruits liver, vegetables
phenytoin	Dilantin			Gum overgrowth, gastric upset, fever headache		Good oral hygiene will help gum overgrowth.
valproic acid	Depakene			Nausea, vomiting, indigestion, diarrhea or constipation		
clonazepam	Clonopin	Tablet				
carbamazepine	Tegretol					
ethosuximide	Zarontin					
trimethadione	Tridione					

## MEDICATIONS BY CLASSIFICATION

### A. Anti anxiety drugs (minor tranquilizers)

1. Action--relieve anxiety and tension
2. Uses--central nervous system depressant, skeletal muscle relaxant, anticonvulsant
3. Examples
  - a. Chlordiazepoxide HCl (Librium)
  - b. clorazepate dipotassium (Tranzene)
  - c. diazepam (Valium)
  - d. lorazepam (Ativan)
4. Adverse effects
  - a. Hypotension
  - b. Slurred speech
  - c. Tachycardia
  - d. Impaired reflexes
  - e. Loss of mental activity
  - f. Drowsiness
5. Special considerations
  - a. Possibility of abuse or addiction occurring
  - b. Warning individual to avoid combining drug with alcohol or other depressants

### B. Antidepressants

1. Tricyclic
  - a. Action--increase the transmitters norepinephrine or serotonin
  - b. Use--treat depression
  - c. Examples
    - i. amitriptyline HCl (Elavil)
    - ii. doxepin HCl (Sinequan)
    - iii. imipramine HCl (Tofranil)
  - d. Adverse effects
    - i. Orthostatic hypotension
    - ii. Constipation
    - iii. Dry mouth
    - iv. Blood disorders
    - v. Tinnitus
    - vi. Confusion

- vii. Nightmares
- viii. Hallucinations
- ix. Restlessness
- x. Increased risk of suicide
- e. Special consideration--drug must be given for one to four weeks before an effect is noticed.

2. Monamine Oxidase Inhibitors (MAO)

- a. Action--decrease the amount of norepinephrine destroyed by metabolism and permits the level to increase in the brain
- b. Use--treat depression
- c. Examples
  - i. phenelzine sulfate (Nardil)
  - ii. isocarboxazid (Marplan)
  - iii. tranylcypromine sulfate (Parnate)
- d. Adverse effects
  - i. Muscle tremors
  - ii. Heart irregularities
  - iii. Diarrhea
  - iv. Sweating
  - v. Constipation
- e. Special consideration--to prevent a hypertensive crisis when taking MAO inhibitors, avoid foods that contain high amounts of tyramine, such as cheese, fish, liver, baked potatoes, yogurt, beer, wine.

C. Antipsychotics (major tranquilizers)

- 1. Action--blocks the neurotransmitter dopamine or affects the metabolism of serotonin
- 2. Uses--control nausea and vomiting, agitation in organic brain syndrome, symptoms of psychoses
- 3. Examples
  - a. chlorpromazine (Thorazine)
  - b. haloperidol (Haldol)
  - c. thioridazine (Mellaril)
  - d. thiothixene (Navane)
  - e. trifluoperazine HCL (Stelazine)
- 4. Adverse effects
  - a. Abnormal movement of the tongue
  - b. Involuntary muscle contractions that cause bizarre, uncontrolled movements of the face, neck, tongue, and back.

- c. Akinesia
  - d. Akathisia
  - e. Dyskinesia
  - f. Tardive dyskinesia
  - g. Urinary retention
  - h. Respiratory distress
  - i. Hypo/hyperglycemia
  - j. Hypotension
5. Special considerations
- a. The most effective way to treat adverse effects (especially tardive dyskinesia) is to prevent it from occurring.
  - b. Do not combine tranquilizers with alcohol.
  - c. Some adverse effects are irreversible and life threatening, individuals on strong tranquilizers should be watched closely.

#### D. Anti-Manics

- 1. Action--alters chemical transmitters in the central nervous system
- 2. Use--prevent mood swings of manic-depressive illness
- 3. Example--lithium carbonate (Carbolith, Lithotabs)
- 4. Adverse effects
  - a. Tremors
  - b. Thirst
  - c. Drowsiness

### **ADDITIONAL INFORMATION CONCERNING PSYCHOTHERAPEUTIC DRUGS**

- A. Encourage the individual to drink fluids.
- B. Provide for the individual's safety.
- C. Observe the individual for tremors, convulsions, or insomnia.
- D. Provide the individual with a calm environment.
- E. Help reorient the individual as needed.
- F. Chart and report accurately:
  - 1. Recent memory loss
  - 2. Abrupt changes in mood
  - 3. Changes in speech patterns
  - 4. Insomnia
- G. Therapeutic response to the medication may take several weeks.
- H. Can become sensitive to the sun.

## **ADDITIONAL INFORMATION CONCERNING COMMONLY ORDERED MEDICATIONS**

### **A. chlordiazepoxide (Librium)--mild tranquilizer**

1. Action--thought to produce calming effect by enhancing action of one of the nerve transmitters
2. Use--provide short-term relief of mild anxiety
3. Adult dosage
4. Adverse effects
  - a. Expected--drowsiness, lethargy, unsteadiness
  - b. Unexpected--allergic reactions (skin rash), dizziness, fainting, blurred vision, double vision, slurred speech, sweating, nausea
5. Special considerations
  - a. Should not be discontinued abruptly if taken continuously for more than four weeks
  - b. If taken in conjunction with some over the counter drugs that contain antihistamines (allergy and cold preparations and sleep aids), can cause excessive sedation in some individuals.

### **B. diazepam (Valium)**

1. Action--suppresses the spread of seizure activity and depresses the central nervous system
2. Uses--provide short-term relief of mild to moderate anxiety, relieve symptoms of withdrawal, relieve skeletal muscle spasm, provide short-term control of certain types of seizures
3. Adverse effects--allergic reactions, dizziness, faintness, blurred vision, double vision, slurred speech, sweating, nausea, menstrual irregularity
4. Special considerations
  - a. Do not discontinue drug abruptly if taken continuously for more than four weeks; dosage should be tapered off gradually.
  - b. Combining diazepam with some over-the-counter drugs containing antihistamines (allergy and cold preparations, sleeping aids) can cause excessive sedation in some individuals.
  - c. This drug can produce psychological and/or physical dependence if used in large doses for an extended period of time.

**C. amitriptyline (Elavil)**

1. Action--slowly restores to normal levels certain constituents of brain tissue that transmit nerve impulses
2. Use--relieve symptoms associated with depression
3. Adverse effects--allergic reactions, swelling of face or tongue, headache, dizziness, fainting, tremors, peculiar taste in mouth, irritation of tongue or mouth, nausea, indigestion, breast enlargement, milk formation, swelling of testicles
4. Special considerations
  - a. Psychological or physical dependence is rare and unexpected.
  - b. Discontinue this drug gradually; abrupt withdrawal after long-term use can cause headaches, nausea and malaise.

**D. haloperidol (Haldol)--strong tranquilizer**

1. Action--not completely known but thought that this drug interferes with the action of dopamine as a nerve transmitter in the brain and thereby reduces anxiety and agitation and improves coherence and thinking
2. Uses--control acute psychosis of unknown nature, treat hyperactivity in children, may be used to control Tourette's Syndrome
3. Adult dosage
4. Adverse effects
  - a. Expected--mild drowsiness, low blood pressure, blurred vision, dry mouth, constipation, Parkinson-like reactions
  - b. Unexpected--allergic reactions (skin rash, hives), dizziness, weakness, agitation, insomnia, loss of appetite, indigestion, nausea, vomiting, diarrhea, urinary retention
5. Special considerations
  - a. Use smallest dose that is effective for long-term treatment.
  - b. Use with caution in epilepsy (can alter pattern of seizures).

**E. chlorpromazine (Thorazine)--strong tranquilizer**

1. Action--not completely known, though to act to correct an imbalance of nerve impulse transmissions
2. Use--treat agitated depression and states of mental dysfunction
3. Adult dosage

4. Adverse effect
    - a. Expected--drowsiness, blurred vision, dry mouth, nasal congestion, constipation, impaired urination, discoloration of urine (pink or purple--not significant)
    - b. Unexpected--allergic reactions (skin rash, hives, low grade fever), increased appetite and weight gain, weakness, agitation, insomnia, impaired vision, chronic constipation
  5. Special considerations
    - a. Many over-the-counter drugs react unfavorably with this drug, consult physician.
    - b. Obtain prompt evaluation of any changes or disturbances in vision.
- F. thioridazine (Mellaril)--strong tranquilizer
1. Action--not completely known, thought to correct an imbalance of nerve impulse transmissions
  2. Use--manage moderate to marked depression with significant anxiety and severe behavioral problems in children
  3. Adult dosage
  4. Adverse effects
    - a. Expected--drowsiness, blurred vision, dry mouth, nasal congestion, constipation, impaired urination, discoloration of urine (pink or purple--not significant)
    - b. Unexpected--allergic reactions (skin rash, hives, low grade fever), increased appetite and weight gain, weakness, agitation, insomnia, impaired vision, chronic constipation
  5. Special considerations
    - a. Many over-the-counter drugs react unfavorably with this drug; consult physician.
    - b. Obtain prompt evaluation of any changes or disturbances in vision.

Answer Self-Test Questions--Lesson 10: Section 6--Medications That Affect The Nervous System

**LESSON 10  
SECTION 6**

**INSTRUCTOR'S NOTE**

SEE SUPPLEMENT #7 THROUGH #13 FOR ADDITIONAL INFORMATION ON PSYCHOTHERAPEUTIC MEDICATIONS, TRANQUILIZERS AND THE NERVOUS SYSTEM

**RECOMMENDATIONS:**

ONLY BLANK SELF TEST QUESTIONS ARE IN TRAINEE'S MANUAL

COMPLETION OF THE SELF TEST SHOULD BE GIVEN AS A HOMEWORK ASSIGNMENT

THE TEST WILL BE REVIEWED AT THE BEGINNING OF THE NEXT CLASS AND CORRECT ANSWERS GIVEN AT THAT TIME

INSERT SELF TEST ANSWERS FOR CLASS REVIEW  
THE ANSWERS ARE FOUND AT THE END OF THE INSTRUCTOR'S MANUAL

**LESSON 10: MEDICATION CLASSIFICATION**  
**SECTION 7. MEDICATIONS THAT AFFECT THE ENDOCRINE SYSTEM**  
**OBJECTIVES**

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the endocrine system.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities, other than observation for side effects, when administering medications for specific classifications.
4. Describe the difference between insulin shock and diabetic coma and your responsibilities for each.

The medication classifications which will be discussed in this lesson are:

- **INSULIN** - Medication by injection, used to treat diabetes mellitus.
- **ORAL HYPOGLYCEMICS** - Oral medications used to treat diabetes mellitus.
- **STEROIDS** - Medications used to decrease inflammation.
- **ORAL CONTRACEPTIVES** - Medications used to prevent pregnancy (birth control) and relieve problems associated with menstruation.

**RELATED INFORMATION**

Endocrine glands produce chemicals called hormones which enter the bloodstream directly and are quickly carried to all parts of the body. The hormones regulate and control body activities and growth. There are seven endocrine glands, some of which are in pairs.

There is a wide variety of medications which affect the endocrine system. The medications are prepared to duplicate the actions of hormones or to interfere with the hormonal activity. People who have some type of hormonal deficiency may require medication therapy. For example, the child who is born with a deficiency of growth hormones (produced by pituitary) may stay small in stature unless the hormone is replaced.

Medications which duplicate hormone activity may also be given to treat various body disorders. For example, a person who has arthritis may benefit from medications called steroids. The actions of steroids resemble actions of the hormone, cortisone, which is produced by the pituitary gland.

The following chart (7.1) presents a brief description of some of the gland's activity, specific medications, therapeutic use and side effects.

Gland Activity  
Chart 7.1

Gland	Hormone Action	Medications	Therapeutic Use	Side Effects
Thyroid	Stimulates the metabolism. Lowers calcium and phosphates	Prophythiouracil Tapazole	Over active thyroid (Hyperthyroidism)	Weight loss, overactivity
		Thyroid Synthroid	Underactive thyroid, (hypothyroidism)	Weight gain, underactivity
Parathyroids	Regulates blood calcium level	Calcitonin Calcium salts	Muscle weakness	Headache, poor appetite, thirst
Testes	Development of sexual maturity	Testosterone	Immature sexual development, cancer in females.	When given to females may cause masculinization

## DIABETES MELLITUS

Diabetes is a metabolic disease (condition that interferes with the use of nutrients after digestion). About two million people in this country are known diabetics and an estimated million more have not been diagnosed. The number of diabetics is expected to increase as more people live to old age.

Diabetes is a condition characterized by the body's inability to efficiently burn carbohydrates (starches and sugars). If the body does not burn carbohydrates, it is deprived of the energy needed to lead an active life.

In order for the body to burn sugar for energy, insulin must be present. Insulin is a substance which is produced by specialized cells in the pancreas called the Islets of Langerhans. Insulin promotes five (5) bodily functions:

- 1) transports sugar into cells
- 2) controls the rate of sugar used for energy
- 3) stores sugar in the body for use later
- 4) assists with storage of fat
- 5) stimulates protein tissue growth

When a person does not manufacture enough insulin, they will have symptoms of diabetes. The symptoms may be so gradual that the person may not realize anything is wrong. Occasionally, especially in children, the onset is dramatic. At one extreme the individual may complain of begin chronically tired; at the other, the first sign may be a diabetic coma.

Symptoms of diabetes mellitus are:

- increased thirst\*
- increased urine output\*
- slow wound healing
- fruity odor to breath

\* The most common symptoms are increased thirst and urine output.

### ORAL HYPOGLYCEMICS

Oral hypoglycemics are medications which resemble insulin activity. They are used primarily for adult onset diabetes (Type II). The reactions discussed in relation to insulin therapy are rare with oral hypoglycemics. However, the possibility of reactions does exist and one must always be alert for signs of shock or coma.

Side effects of oral hypoglycemics may include, stomach upset, itching, and hives. As with any side effects, they should be reported and documented.

TABLE 7.2  
ORAL HYPOGLYCEMICS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
tobutamide	Orinase	Tablet	Gastric upset	Use with caution if individual has an allergy to the sulfa medications.  Pruritis, redness, signs of low sugar, weakness sweating, shaking. If they occur and persist, medications should be stopped.		Reaction is rare, but possibly does exist. Be aware of the signs and symptoms in order to institute first aid.
chlorpropamide	Diabinese					
acetohexamide tolazamide	Dymelor Tolinase					

Individuals who take insulin or oral hypoglycemics should be instructed that these medications do not cure diabetes mellitus, they only control it. Diabetics should follow a prescribed diet, control their weight, be followed by a physician, and have a form of identification stating they are a diabetic.

## COMPARISON OF DIABETIC COMA AND INSULIN SHOCK

### INSULIN SHOCK (Hypoglycemic reaction)

Causes: too much insulin  
too little food  
excessive exercise  
vomiting

Onset: Sudden, within minutes

Signs: Skin pale, moist, weak,  
hungry,  
nervousness, headache,  
dizziness,  
visual changes, alterations  
in consciousness, fainting,  
seizures,  
coma (late stages)

Blood Sugar: Low, body lacks sugar

First aid: Treat for shock, orange  
juice, sugar by  
mouth\*, candy  
under tongue.

### DIABETIC COMA (Hyperglycemic reaction)

Causes: too little insulin  
too much food  
illness-increased demand  
on body

Onset: slow, hours to develop

Signs: Skin warm, flushed, dry,  
eyeball soft  
respirations deep, rapid  
(Kussmaul)  
fruity odor to breath  
nausea, vomiting,  
abdominal  
pain  
alteration in level of  
consciousness  
lethargic coma (late  
stages)

Blood Sugar: High, too much sugar

First aid: immediate transfer to  
hospital

\*Never give anything by mouth unless individual is awake and able to swallow.

### STERIODS

The adrenal glands secrete the hormones which control inflammation. When irritation or inflammation is present anywhere in the body, there is an increase in the production of these hormones. If the inflammation is very severe, the adrenals may be unable to secrete an adequate supply to control the inflammation. Additional hormones, called steroids, may be needed when a person has rheumatoid arthritis, bursitis, allergic reactions and other problems.

Steroids will not cure the problem, but merely suppress the symptoms. Upon stopping the medication, the symptoms may once again appear. Steroids are used to treat a wide variety of disease processes and do not necessarily affect only the endocrine system.

### CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING STEROIDS

Steroids decrease inflammation and the body's resistance to infection. Therefore, one of your responsibilities is to be alert to signs of infection.

Steroids should not be given to individuals with stomach ulcers, tuberculosis or other severe infections. If such a condition exist, contact nurse. When administering steroids, responsibilities include:

- observe for signs of infection
- administer steroid with milk or food
- report any signs of stomach distress
- give medication on time

There are a number of possible side effects if the individual is on steroids for a long period of time. Some side effects are:

- puffy face "moon face"
- changes in mood
- muscular weakness
- easy bruising of skin
- abnormal hair growth
- acne

Steroids tend to hold salt and water in the body. Therefore, the "moon face" may be a sign of fluid retention. This medication should not be stopped abruptly but dosage should be tapered. Check with nurse immediately should individual refuse medication.

**TABLE 7.3  
ANTI-INFLAMMATORY MEDICATIONS  
(steroids)**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
cortisone acetate	Cortone acetate	Tablet & ointment	Rheumatoid arthritis, Bursitis, Skin Conditions, Acne, Muscle weakness	Moon face, mood changes, abnormal hair growth	Should avoid foods high in salt.	Some of these medications cause gastric distress. Antacids are sometimes ordered to be given. Also give these medications after meals and with milk. NEVER STOP MEDICATION ABRUPTLY.
hydrocortisone	Hydrocortisone Cortef Cortril					
prednisone	Deltason Meticorten Paracort		Delayed wound healing			
methyl-prednisolone	Medrol	Tablet	Hypertension, Peptic Ulcer			
prednisolone						
triamcinolone	Aristocort Kenacort	Tablet & ointment				

## BIRTH CONTROL MEDICATION

There are many different preparations available and each one has specific directions for use. When administering the medication, a major responsibility is to read the label for directions. Dangerous side effects to be alerted to are:

- Abdominal Pain
- Chest Pain
- Headache
- Eye Problems
- Severe Leg Pain

### A-C-H-E-S

The word ACHES will help you remember these symptoms as each symptom begins with the letters used to spell "aches".

Review Table 7.4 for additional information on birth control pills.

**TABLE 7.4  
BIRTH CONTROL MEDICATIONS**

	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
mestranol	Ortho-Novum	Tablet	Inhibit ovulation by suppressing Estrogen secretion	Approximately 40% of women on these medications have side effects: nausea, vomiting, weight gain, breast fullness, irregular menstruation, depression, vaginitis	<p>Oral contraceptives effectiveness may be diminished when these medications are used; Dilantin, Mysolin, INH, Penicillin, Sulfonamides</p> <p>Oral contraceptives decrease effectiveness of: Anticoagulants, Anticonvulsants, Antihypertensives</p>	Oral contraceptives should not be used if a person has: Cardiovascular problems Cancer Liver Problems Pregnancy Hypertension Diabetes Gall Bladder Disease Over age 35 Asthma Seizure Disorder Depression Blood Disorders
ethinyl estradiol	Lo/Ovral Ovulcon Norlestrin Zorane Demulen	Tablet				

Answer Self Test Question - Lesson 10: Section 7-- Medications That Affect The Endocrine System

**LESSON 10  
SECTION 7**

**INSTRUCTOR'S NOTE**

**SEE SUPPLEMENT #14 FOR STRUCTURE AND FUNCTION OF THE ENDOCRINE SYSTEM**

**RECOMMENDATIONS:**

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## LESSON 10: MEDICATION CLASSIFICATION

### SECTION 8. MEDICATIONS THAT AFFECT THE GASTROINTESTINAL SYSTEM OBJECTIVES

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the gastrointestinal system.
2. Given a specific medication classification, list at least two (2) side effects.
3. State responsibilities, other than observation for side effects, when administering medications in these classifications.
4. List three (3) common causes of constipation.

The medication classifications which will be discussed in this Section are:

- **ANTACIDS** - Medications which are used to neutralize excess stomach acid.
- **EMETICS** - Medications used to cause vomiting.
- **ANTI EMETICS** - Medications which relieve nausea and vomiting.
- **CATHARTICS** - Medications used to relieve constipation.
- **ANTIDIARRHEALS** - Medications used to stop diarrhea.

#### RELATED INFORMATION

The gastrointestinal system is also called the G.I or digestive tract. It extends from the mouth to the anus and is lined with mucous membrane. The organs of this system change food into simple forms able to pass through the walls of the small intestine into the circulatory system. The circulatory system carries the nutrients to the body. The non digestible portions of what we eat are moved along the intestines until they are finally excreted from the body as feces. Many organs contribute to the digestive process.

**ANTACIDS**--Antacids are medications used to neutralize excess stomach acid.

Hydrochloric acid produced in the stomach is necessary for proper digestion. Ordinarily the stomach lining is resistant to breakdown, but under certain conditions (e.g., excessive or prolonged secretion of hydrochloric acid during period of worry or stress) a small area of the lining may break down and form a stomach ulcer. Antacids can be used to prevent ulcer formation as well as to treat ulcers and common indigestion referred to as heartburn.

Signs and symptoms of excess stomach acid include:

- burning in stomach
- burping
- upset stomach

As you may recall, many medications are irritating to the stomach and the doctor may order an antacid to help reduce stomach irritation. However, it is important to note that antacids may also decrease the absorption of a medication which may change the medication's effectiveness. Do not give water after medication is administered.

### CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTACIDS

These medications are available in liquid or tablet form. Liquid preparations are generally more effective.

Side effects are minimal, but constipation and/or diarrhea has occurred when antacids are used over an extended period. Responsibilities include giving the medications on time and in proper relationship to meals. Table 8.1 list specific antacids.

**TABLE 8.1**  
**ANTACIDS**  
(non-prescription medications)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
aluminum hydroxide	Amphojel, Creamalin	Tablet & Liquid	Treatment and/or prevention of gastric ulcers.	Rare, but may cause constipation	Given between or before meals.	Should only be used when prescribed by a physician.
aluminum hydroxide & magnesium trisilicate	Gelusil		Also used for indigestion	.	Antacids may interfere with absorption of other medication.	Tablet preparations are to be chewed.
aluminum magnesium hydroxide	Maalox			.	Many antacids contain salt. Individuals on low salt diets should only use low salt antacids.	

### EMETICS

Emetics are used to cause vomiting and are used primarily as a first aid measure when prompt emptying of the stomach is essential, as with accidental poisoning.

The use of emetics should be avoided in cases of corrosive poisoning since tissue damage of the mouth and throat is increased by the second passage of material over these structures. Most cleaning agents are corrosive and have directions if accidental swallowing happens.

One medication which can be used is Syrup of Ipecac. This medication works quickly. Directions for dosage are on the label and should be read very carefully. Many people with children keep Ipecac on hand for emergencies.

Contact Poison Control Center, based on agency policy, should you suspect poisoning before any action is taken.

### **ANTI EMETICS**

These medications relieve nausea and vomiting. Numerous preparations have been used, but ordinarily the most effective treatment must be chosen with due respect to the cause of nausea. Some medications previously discussed in the respiratory and nervous system sections may be used as antiemetics.

Some antihistamines, such as Phenergan and Dramamine are also used as antiemetics.

Compazine which is a mild tranquilizer is also used as an antiemetic. In general, side effects of antiemetics are:

- drowsiness
- dry mouth

Nausea and vomiting may also be treated with household remedies, such as coca cola and warm tea.

### **CATHARTICS AND LAXATIVES**

Cathartics and laxatives are used interchangeably. Laxatives are milder, cathartics stronger. These medications are used in treatment of constipation, which is the condition that occurs when fecal material remains too long in the large intestine. The feces becomes hard and causes distention in the lower bowel.

Constipation usually results from one or more of the following causes:

- improper diet
- poor fluid intake
- tension and worry
- lack of exercise

In most cases, the correction of one or more of these simple health rules will take care of the constipation problem. In other cases, however, cathartics may be ordered. It is important to remember that there is no set time limit between bowel movements.

## CAUTION AND/OR RESPONSIBILITIES WHEN ADMINISTERING CATHARTICS AND LAXATIVES

These medications should never be given if an individual is complaining of abdominal pain, nausea or vomiting. These signs could indicate more serious problems than constipation, such as appendicitis.

Cathartics and laxatives may cause the following side effects:  
 abdominal cramps  
 nausea  
 abdominal pain

Review Table 8.2 on cathartics and laxatives.

**TABLE 8.2**  
**CATHARTICS & LAXATIVES**  
 (All are non-prescription medications)

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
dioctyl sodium	Dialose Colace Pericolace	Tablet	Constipation	Rare, with over use could cause diarrhea	May interfere with adequate nutrition.	Takes 8-10 hours to work
dioctyl calcium	Surfax				When individuals are taking any CNS depressants, they may also be ordered to take Dialose or Colace which reduces constipation due to depressants.	
psyllium hydrophillic bisacodyl	Metamucil Ducolax	Granules Tablets & Suppositories		Abdominal cramps		Suppositories work faster than tablets.

## ANTIDIARRHEALS

Antidiarrheals are used to treat diarrhea, which is a symptom of a disorder of the bowel associated with rapid passage of feces.

Some causes of diarrhea are:

contaminated or partially digested food; intestinal infection  
 nervous disorder  
 circulatory disturbances  
 certain allergic disorders

In view of these numerous causes, the treatment of diarrhea varies greatly. In some cases, a cathartic that brings about emptying the entire contents of the bowel may be the means to relieve diarrhea because it removes the irritating material.

Simple diarrhea is most frequently due to:

poor eating habits  
emotional stress

**CAUTIONS AND/OR RESPONSIBILITIES WHEN ADMINISTERING ANTIDIARRHEALS**

The best situation is to try and prevent or rectify the cause of diarrhea. However, medications treatment may be necessary. Most of the antidiarrheals are relatively non-toxic to organs other than the intestines because they are not absorbed into the general circulation. The most frequent side effect produced by antidiarrheal medications is constipation.

Antidiarrheals should not be administered for more than a few days. Many of these medications are non-prescription. Review Table 8.3.

**TABLE 8.3  
ANTIDIARRHEAL AGENTS**

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
diphenoxylate	Lomotil	Tablet & liquids	Treat diarrhea	Fatigue, Vertigo	Increases action of CNS depressants.	If over used may cause constipation.
bismuth subsalicylate	Pepto-Bismol	Liquids				
kaolin & pectin	Kaopectate Par-gel					
kaolin, pectin, mixtures	Donagel					

Answer Self Test Questions - Lesson 10: Section 8 -- Medications that Affect the Gastrointestinal System

**LESSON 10  
SECTION 8**

**INSTRUCTOR'S NOTE**

**SEE SUPPLEMENT # 16 FOR STRUCTURE, FUNCTION AND DISORDERS OF  
THE GASTROINTESTINAL SYSTEM**

**RECOMMENDATIONS:**

**ONLY BLANK SELF TEST QUESTIONS ARE IN TRAINEE'S MANUAL**

**COMPLETION OF THE SELF TEST SHOULD BE GIVEN AS A HOMEWORK  
ASSIGNMENT**

**THE TEST WILL BE REVIEWED AT THE BEGINNING OF THE NEXT CLASS AND  
CORRECT ANSWERS GIVEN AT THAT TIME**

**INSERT SELF TEST ANSWERS FOR CLASS REVIEW  
THE ANSWERS ARE FOUND AT THE END OF THE INSTRUCTOR'S MANUAL**

**LESSON 10: MEDICATION CLASSIFICATIONS**  
**SECTION 9. MEDICATIONS THAT AFFECT THE SKIN**  
**AND MUCOUS MEMBRANES**

**OBJECTIVES**

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the skin and mucous membrane.
2. Given a specific medication classification, list at least one (1) side effect.
3. State responsibilities when administering various topical medications.

**RELATED INFORMATION**

The skin<sup>2</sup> tells us much about the general health of the body. A fever may be indicted by unusual redness or flushing of the skin. Pallor (less color than normal) is a sign associated with many conditions. The oxygen content of the blood can be noted quickly by the color of the skin. When the oxygen content is very low, the blood is darker and the skin appears bluish (cyanotic).

**STRUCTURE AND FUNCTION**

The skin is one of the most important organs in the body. The integumentary system includes the skin and accessory structures, the hair, nails, nerves, and the sweat and oil glands. The top layer is constantly being washed or worn away as it is renewed from the lower layer.

**MUCOUS MEMBRANES**

The mucous membranes are continuous with the skin and line all body openings. The mucous membranes secrete mucous, which tends to cover the surface of the membranes, protecting them from foreign bodies and waste materials.

Medications applied to the skin serve many functions and may be intended either for a local effect or for a general effect following absorption through the skin and/or mucous membrane.

The medications may conveniently be divided into the following classifications. Medication described in each classification are available without a prescription.

## EMOLLIENTS

Oily substance applied to soothe the skin or mucous membranes. The oily layer protects the skin from irritants and makes the skin softer due to penetration of the emollient into the surface layer. Some commonly used emollients are Vaseline, various lotions, and cold creams.

**DEMULCENTS.** These protective agents are used primarily to alleviate irritation, particularly of mucous membranes. They are generally applied to the surface in a thick (viscid) preparation. Demulcents may be incorporated in lozenges to soothe oral and throat mucous membranes. A common demulcent base is glycerin which is found in many external lotions and is a base in some cough syrups and drops.

**ASTRINGENTS.** Astringents are medications which have a tendency to lessen secretions and stop minor bleeding. They shrink swollen and inflamed tissues. Witch hazel and rubbing alcohol are two common astringents and are used as a base in many skin preparations.

**COUNTER IRRITANTS.** Counter irritants are medications which are used to irritate unbroken skin areas in order to relieve pain in deeper tissues. Common examples are Ben-Gay, and Oil of Wintergreen.

**ANTIPRURITICS.** Antipruritics are agents that relieve itching. Various preparations are used, but the cause of itching determines the medication to be used. For example, the itching caused by poison ivy can be relieved by Calamine Lotion.

**LOCAL ANESTHETICS.** Agents which numb a specific area. Many ointments contain local anesthetics and are applied topically for minor conditions, such as: sunburn, insect bites, as well as for more serious conditions, such as burns and hemorrhoids. Some examples are: Surfacaine, Benzocaine and Nupercaine.

**ANTISEPTICS.** Agents that destroy or prevent the growth of bacteria on the skin. Some antiseptics may be used to treat a skin infection and/or prevent an infection from occurring.

## CAUTION AND/OR RESPONSIBILITIES WHEN APPLYING SKIN PREPARATIONS

Most skin preparations can be obtained without a prescription, but this does not negate the seriousness of these preparations. Always read the labels for directions. The major caution is that they are external medications and should never be taken internally. Most of the labels will include directions in case of accidental swallowing. In addition, you should be aware of the poison control number in your area.

Chart 9.1

ANTISEPTICS

Generic Name	Trade Name	Preparation	Therapeutic Use	Side Effects	Food/Medication Interactions	Comments
bacitracin	Bacitracin	Antibiotic ointment	Infections of the skin	Rare, may include skin rash, redness and puritus		Should never be taken by mouth.
gentamicin	Garamycin	.	.	.		
benzalkonium chloride	Zephiran Chloride	Solution	Irrigations and used to sterilize materials when necessary			Use mainly on surgical instruments.
benzoin tincture	Benzoin	Ointment & Liquid	Promotes healing			
boric acid	Boric Acid	Ointment, solution & powder	Skin antiseptic			May be used to irrigate eyes
hydrogen peroxide	Hydrogen Peroxide	Solution	Skin antiseptic			
Iodine tincture	Iodine	Solution	Skin antiseptic			
Providone-Iodine	Betadine	Ointment & concentrate Liquid soap	Skin antiseptic			Ointment will stain clothes
phisoderm	Phisoderm		Skin antiseptic			

Answer Self Test Questions - Lesson 10: Section 9 -- Medications that Affect the Skin and Mucous Membranes

**LESSON 10  
SECTION 9**

**INSTRUCTOR'S NOTE**

SEE SUPPLEMENT #17 FOR FUNCTIONS OF THE SKIN

**RECOMMENDATIONS:**

ONLY BLANK SELF TEST QUESTIONS ARE IN TRAINEE'S MANUAL

COMPLETION OF THE SELF TEST SHOULD BE GIVEN AS A HOMEWORK ASSIGNMENT

THE TEST WILL BE REVIEWED AT THE BEGINNING OF THE NEXT CLASS AND CORRECT ANSWERS GIVEN AT THAT TIME

INSERT SELF TEST ANSWERS FOR CLASS REVIEW  
THE ANSWERS ARE FOUND AT THE END OF THE INSTRUCTOR'S MANUAL

**LESSON 10: MEDICATION CLASSIFICATIONS**  
**SECTION 10. MEDICATIONS THAT AFFECT THE EYE AND EAR**  
**OBJECTIVES**

At the completion of this lesson, you will be expected to:

1. Define the classifications of medications which affect the eyes.
2. Define the classifications of medications which affect the ears
3. Discuss procedure for administering eye drops.
4. Describe procedure for administering ear drops to an adult.

**THE EYE**

A number of medications are instilled in the eye via ointments and drops. There are also some medications used to irrigate the eyes in case of infection.

Proparacine (Ophytaine) is used for relief of pain. It is available in eye drops only.

Miotics are a group of medications which constrict the pupil. Miotics are used in the treatment of glaucoma (common eye problem in the elderly). Most miotics are administered as eye drops.

neostigmine oromide	Prostigmin	eye drops
carbachol	Doryl	eye drops
physostigmine	Eserine	eye drops & tablets

**OPHTHALMIC OINTMENTS**

Many of the antibiotics are prepared as ophthalmic ointments. e.g., Bacitracin, Aureomycin and Neosporin.

The major responsibilities are to be sure you are administering the drops to the designated eye and maintain clean techniques (washing your hands before and after administering any medication).

- A. To instill ointment, pull down the lower eyelid as the individual looks upward. Squeeze the ointment into the lower eyelid. Avoid touching the tube to the eye or lid.
- B. The individual should tilt face upward to receive an eye drop. Use an absorbent tissue to prevent excess drops and tears from flowing down the individual's face.

### Procedure for Instilling Eye Drops and Ointments

1. Wash your hands and/or have the individual wash their hands.
2. Place the individual's head on a suitable support, such as a pillow. Direct his face toward the ceiling.
3. Instruct the individual to fix his gaze on a point above his head.
4. If secretions are present, remove them by gently wiping the eyelid from the inner corner to the outer corner.
5. Apply gentle traction to the lid lashes at the bony rim of the eye; do not apply pressure to the eyeball.
6. Approach the eye from below with the dropper or ointment tube, outside of the individual's field of vision; do not touch the eye with the dropper or tube.
7. **FOR EYE DROPS:** Always warm drops to room temperature. ( You may warm drops by holding bottle between your hands and rolling bottle back and forth ) Always hold the dropper with the tip straight down. Release the prescribed number of drops into the conjunctival sac; do not allow drops to fall more than 1 inch. Avoid letting the drops fall onto the eyeball as this is painful.

Apply gentle pressure inward and downward against the bones of the nose for about 2 minutes. This prevents the medication from entering the lacrimal (tear) duct and being absorbed through the nasal cavity.

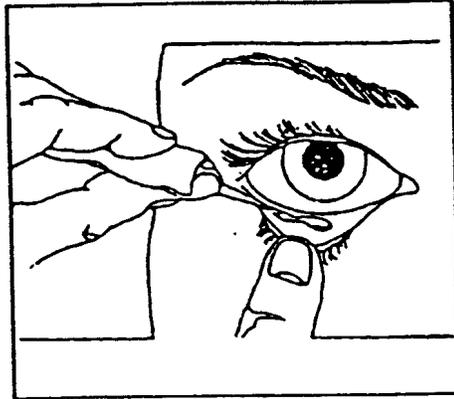
Discard any drops left in a dropper.  
If the dropper touches the eye, wash it with soap and water



**FOR EYE OINTMENT:** Squeeze a small amount of medication along the **INSIDE** of the lower eyelid. Instruct the individual to keep eye closed for 1 - 2 minutes to allow the medicine to spread and be absorbed.

8. Wash hands.

9. Record on the medication record.



## THE EAR

Just as the eye is sensitive to light, the ear is sensitive to sound. The ear has three parts: the outer ear, the middle ear and the inner ear.

Since it is impossible to reach the inner ear due to the eardrum, conditions such as otitis media (infection in the inner ear) must be treated by oral antibiotics. However, the pain caused by external and middle ear infections may be treated with medications administered as ear drops. Dibucaine has an anesthetic action and is used to relieve ear pain. Some mild oral analgesics may also be ordered.

Nausea and vomiting are associated with problems in the inner ear. As you recall, this area helps us maintain a sense of balance. It is thought that the reason people develop motion sickness is due to a disturbance in the middle ear. Anti emetics previously discussed, such as Bonine and Dramamine may be used.

The primary responsibilities when working with ear drops are:

- to maintain clean technique.
- to warm ear drops to body temperature.
- to avoid touching the ear with the dropper.

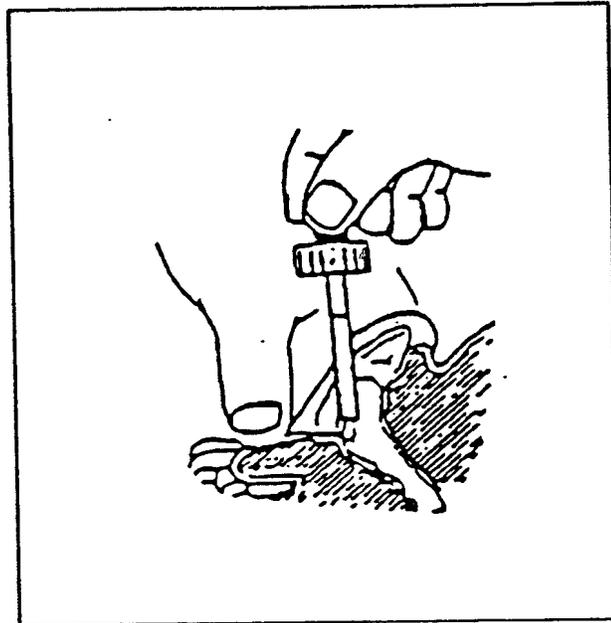
Following the procedure will assure proper installation of ear drops.

### Administration of Ear Drops

1. Allow drops to warm to body temperature by holding the bottle in your hand for a few minutes. Hold the bottle yourself it is unsafe for the individual to do so.
2. Have the individual lie on his side with the ear to be treated upward.
3. Shake the medicine, if required, and draw up into the dropper.
4. To allow the drops to run in:
  - a. Adults - pull the pinna (earlobe) back and up and allow the drops to fall in the external canal.
  - b. Children - pull the pinna (earlobe) back and down and allow the drops to fall in the external canal. (under the age of 3)
5. Do not insert the dropper into the ear and do not allow the dropper to come into contact with any portion of the ear.

6. Have the individual remain on his side for a few minutes to allow the medication to reach the eardrum.
7. Insert a soft cotton plug if ordered. Never pack the plug tightly into the ear.

Caution: Monitor carefully so that individual does not tamper with cotton in ear.



Answer Self Test Questions - Lesson 10: Section 10 -- Medications that Affect the Eye and Ear

**LESSON 10  
SECTION 10**

**INSTRUCTOR'S NOTE**

SEE SUPPLEMENT #18 AND #19 FOR MORE INFORMATION ON THE EYE AND EAR.

**RECOMMENDATIONS:**

ONLY BLANK SELF TEST QUESTIONS ARE IN TRAINEE'S MANUAL

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**MEDICATION ADMINISTRATION COURSE**

**PART II**

**GLOSSARY**

**REVISED - 1998**

## GLOSSARY

### A

**Abdominal distention**--Enlarged abdomen.

**Absorption**--The taking up of fluids or other substances by the skin, mucous surfaces, or absorbent vessels.

**Acetylcholine**--Chemical present in many organs and tissues of the body that has important physiological functions, i.e., transmission of a nerve impulse across a synapse - neurotransmitter.

**Acne**--A disorder of the hair follicles and oil-producing glands of the skin.

**Adverse effect**--Side effect of a medication; undesirable reaction.

**Affective psychosis**--Psychotic reaction in which a person exhibits wide swings in emotional feelings.

**AIDS**--Acquired Immune Deficiency Syndrome is a disease that affects the body's ability to fight infection. AIDS is spread through the body fluids of an infected person by sexual intercourse (vaginal, anal, oral), sharing IV needles, infected mothers passing the disease to the fetus, transfusion of blood or blood products.

**Akathisia**--Motor restlessness-inability to sit or lie down quietly. Continuous movement of the hands, mouth, picking at self, rocking in a chair, and drumming fingers, pacing the floor, rocking when standing.

**Akinesia**--Fatigue and weakness of the arms and legs. Apathetic, disinclined to initiate or to expend energy to complete a task.

**Alcohol**--Any beverage that contains ethyl alcohol (ethanol), the intoxicating sedative-hypnotic in fermented and distilled liquors. A CNS depressant, depending on the amount consumed, alcohol acts as an analgesic, tranquilizer, sedative-hypnotic, soporific, intoxicant, anesthetic, or narcotic.

**Allergen**--A substance that causes a hypersensitive reaction (an allergy).

**Allergic effect**--Sensitivity to any substance contacted by touch, inhalation, ingestion, or injections such as poison ivy, pollen, insect bites, foods, or medications; causes sneezing, itching, swelling, difficulty in breathing.

**Anaphylactic reaction**--Life-threatening allergic reaction caused by an allergen. Characterized by respiratory problems, fainting, itching, welts on the skin.

**Androgens**--Male hormones.

**Anemia**--A condition in which the blood is deficient either in quantity or in quality.

**Anesthetics**--Medications that cause a loss of sensation.

**Angina**--Any disease in which spasmodic and painful suffocation or spasms occur.

**Anorexia**--Lack or loss of appetite for foods.

**Antacid**--Given to neutralize excessive acid in stomach. (Example: Maalox).

**Antagonistic effect**--An agent, such as a remedy or a drug, which tends to nullify the action of another agent.

**Anthelmintic**--Given to kill worms in gastrointestinal tract. (Example: Povan).

**Antianxiety drugs**--Minor tranquilizers, also used for prevention and treatment of convulsions.

**Antiasthmatic and Bronchodilator**--Given for asthma and lung congestion (example: Tedral, Isuprel)

**Antibiotics**--Substances produced by certain fungi, bacteria, and other organisms that are effective in inhibiting the growth of or destroying microorganisms--e.g. penicillin.

**Antibiotic and Antibacterial**--Given to control infections (example: Penicillin).

**Anticonvulsants**--Medications used to stop or prevent convulsions or seizures.

**Antidepressants**--Alleviate the symptoms of depression.

**Antidiabetic agent**--Given for treatment of diabetes (example: Diabinese).

**Antidiarrheal preparation**--Given to control diarrhea (Example: Kaopectate, Paregoric).

**Antiemetics**--Drugs used to treat and prevent nausea and vomiting.

**Antihistamines**--Drugs that are used to reduce the effects associated with histamine production in allergies and colds.

**Anti-inflammatory**--Medications used to reduce swelling, pain, and tenderness caused by inflammation.

**Atherosclerosis**--A deposit or degenerative accumulation of cholesterol and lipid material in the arteries.

**Antipsychotics**--Major tranquilizers, used to control symptoms of psychoses and organic brain syndrome; can change behavior but does not cure disease.

**Antipyretic**--Given to lower a temperature that is above normal (example: Aspirin, Tylenol).

**Antiseptic**--A substance that inhibits the growth of germs. Antiseptic solutions are used as

cleaning agents to prevent the spread of infection.

**Antitussives**--Medications that relieve coughing.

**Anuria**--No urinary output.

**Anxiety neurosis**--Frequent feeling of uneasiness or fear with no apparent cause - associated with somatic symptoms and without organic disease.

**Apathetic**--Lack of concern or caring.

**Aphasia**--Defect or loss of the power of expression (speech, writing, or signs), or of comprehending spoken or written language, due to injury or disease of the brain centers.

**Arrhythmia**--A change in the time or force of the rhythm of the heartbeat.

**Arteriosclerosis**--Thickening and hardening of arterial walls caused by calcium build-up that interferes with blood circulation.

**Arthritis**--Inflammation of a joint.

**Aseptic**--Free of infection. Often refers to proper handwashing and other measures taken to prevent the spread of infection.

**Aspiration**--The taking of foreign matter (such as food) into the lungs during the respiratory cycle.

**Assault and battery**--The threat to use force upon another person and the carrying out of the threat.

**Asthma**--A chronic respiratory disease, often from allergies, and accompanied by labored breathing, chest constriction, and coughing.

**Athlete's foot**--A contagious fungus infection of the feet.

**Atomizer**--A device used to deliver a fine spray of medicine.

**Auditory canal**--Tubular passages or ducts that assist in hearing or in the sense of hearing.

**Autonomic Nervous System (ANS)**--The division of the vertebrate nervous system that regulates involuntary action (intestines, heart, and glands) and makes up the sympathetic and parasympathetic nervous systems.

## B

**Blood pressure**--The force exerted by the heart against the arterial walls when the heart contracts (systolic) or relaxes (diastolic).

**Bradycardia**--Slowness of the heartbeat; less than 50 beats per minute.

**Back sinus**--An air cavity in one of the cranial bones that connects with the nose.

**Bronchitis**--Inflammation or swelling of the bronchial tubes.

**Bruise**--Black and blue area caused by an injury to the surface of the skin.

**Buccal**--Medication is placed between the teeth and the mucous membrane of the cheek.

**Bulbourethral glands**--Small structures about halfway between the bladder and the end of the penis that secrete sperm protectant.

**Burns**--Injury to the skin by strong chemicals, electricity, high temperatures, or radiation.

**Bursitis**--Inflammation of a bursa, usually at the shoulder, elbow, or knee joints.

### C

**Caffeine**--A white, bitter, crystalline substance that has stimulant effects and constricts blood vessels in the brain.

**Caffeinism**--Excessive ingestion of large amounts of caffeine, usually in coffee or tea, for prolonged periods.

**Capsules**--Medication in small cylinder-like containers.

**Carbohydrates**--Sugars, starches, and cellulose.

**Cardiotonics**--Medications used to strengthen the activities of the heart.

**Cataracts**--The lens or capsule of the eye loses its transparency or translucency causing partial or total blindness.

**Chills**--Shivering or shaking.

**Chronic kidney failure**--Reduction in kidney function.

**Chronic Obstructive Lung Disease (COLD)**--Chronic airway obstruction.

**Cirrhosis**--Chronic liver damage caused by previous disease.

**Cocaine**--From the coca plant, a short-acting but very powerful stimulant. Heavy usage can lead to "paranoid syndrome" in which the user is highly suspicious or nervous.

**Code of Ethics**--A voluntary set of rules that influence relationships between people.

**Comatose**--Cannot be aroused; unconsciousness.

**Common cold**--Communicable viral disease.

**Competent**--Well-qualified or capable.

**Conjunctival sac**--Mucous membrane that lines the inner surface of the lower eyelid.

**Conjunctivitis**--Inflammation of the mucus membrane that lines the inner surface of the eyelid and the exposed surface of the eyeball.

**Constipation**--Difficult, incomplete or infrequent bowel movements.

**Contaminated**--When something is impure or dirty, when it has germs or bacteria on it that may cause disease or infection.

**Contracture**--Permanent shortening of a muscle that produces a deformity.

**Convulsions**--Abnormal, uncontrolled movement of all parts of the body.

**Creams**--Medication applied to the skin or mucous membrane that is more easily absorbed by the skin than ointments.

**Cumulative dose**--If the body does not use all of drug does the drug may remain in the body and build up with each new dose; when the drug builds up it can lead to harmful and dangerous side effects that must be watched for. To help prevent this the resident should be given many liquids to drink. Also the regularity of bowel movements should be checked; if the person is constipated the drug may not be passing out the body like it should.

**Cumulative effect**--Build-up of medication in the body due to slow excretion that could lead to a toxic effect.

**Cyanosis**--A bluish discoloration of the skin caused by the lack of oxygen in the blood.

**Cystitis**--Inflammation of the urinary bladder.

## D

**Daydream**--A dreamlike musing or fantasy while awake.

**Decubitus ulcer**--An open wound that is caused by the pressure of lying or sitting in one position for a long period of time. Also called a pressure sore or bedsore.

**Dehydration**--Excessive loss of water from the body.

**Depressants**--Medications used to decrease mental and physical activity.

**Depression**--A lowering or decrease of activity functioning with the following symptoms: lack of interest in life, insomnia, loss of appetite due to inability to cope with one's life.

**Dermis**--A layer of skin.

**Desired effects**--The normal effect of a drug; the reason for which the drug was given.

**Diabetes**--A disorder of carbohydrates, protein, and fat metabolism that prevents the body from properly converting foods into energy for carrying out vital functions.

**Diarrhea**--Frequent, loose bowel movements.

**Disinfectant**--Substance used to destroy microorganisms.

**Diuretic**--Given to rid the body of excess fluid by urination (Example: Diuril, Dyazide).

**Dopamine**--Chemical present in many parts of the body that has important physiological functions, i.e., transmission of a nerve impulse across of synapse - neurotransmitter. Dopamine is a product of norepinephrine.

**Drug Interaction**--The action of one medication interferes with the action of another; the effects of two or more medications.

**Duodenum**--The first portion of the small intestine.

**Duty of Care**--Performance of services that meet common standards.

**Dyskinesia**--Abnormal movements of the body such as a dramatic onset of spasms, oculogyric crisis (begins with a stare, rolling of eyes, tilting of head, facial expressions), protrusion of the tongue, stiff neck, inability to swallow, stammering speech (dysarthria), labored breathing, and involuntary muscle movements.

**Dysphagia**--Difficulty in swallowing.

**Dyspnea**--Difficulty in breathing.

**Dysuria**--Painful or difficult urination.

## E

**Eczema**--A noncontagious inflammation of the skin, marked mainly by redness, itching, and the outbreak of lesions that discharge fluid and become encrusted and scaly.

**Edema**--Swelling caused by large amounts of fluid in the tissues.

**Emaciated**--Thin, underweight.

**Emesis**--Vomiting.

**Emphysema**--A condition of the lungs resulting in labored breathing and increased susceptibility to infection.

**Enema**--Used to cleanse the lower bowel, relieve constipation; some types will relieve gas or act an emollient (soothing irritated tissues of the colon), and administer medication.

**Epidermis**--The outer protective layer of the skin.

**Epididymis**--Coiled structure that stores and matures sperm cells.

**Epilepsy**--Chronic disorder characterized by recurring seizures that last from a few seconds to several minutes and require specific medication for prevention and control.

**Estrogen**--Female hormones.

**Excoriation**--A scratch on the skin, usually covered with a scab.

**Excretion**--Eliminating waste, such as sweat, urine, or feces from the body.

**Expectorant**--Medication that assists in liquefying the mucus to make it easier to cough up.

**Extrapyramidal**--Outside of the pyramidal tracts.

## F

**Fecal impaction**--A collection of 'putty-like' or hardened feces in the rectum.

**Feces**--Waste excreted from the bowels

**Fever**--Body temperature above normal.

**Fibrillation**--Very rapid irregular contractions of the muscle fibers of the heart resulting in the heartbeat and the pulse not beating simultaneously.

**Flushing**--Redness of the skin.

**Flutter**--Very rapid rhythmic contractions of the heart muscles.

**Fracture**--Broken bone.

**Friction**--The rubbing of one thing against another. For example, when you wash your hands aseptically you create friction by rubbing them together in a brisk, back-and-forth motion.

## G

**Gallbladder**--Sac in which the bile from the liver is stored.

**General effects or Systemic effects**--Caused by drugs that circulate in the bloodstream through the entire system and effect the whole body.

**Generic**--Commonly available drugs that are not protected by trademark.

## H

**Hematemesis**--Vomiting blood.

**Hemiplegia**--Paralysis on only one side of the body.

**Hepatitis**--Inflammation of the liver.

**Histamine**--A white crystalline compound found in plant and animal tissue. It is a stimulator of gastric secretion, and is used medicinally as a vasodilator to increase the blood supply to the brain.

**Hives**--Red, swollen, itchy areas.

**Hormone**--A chemical substance secreted into the body fluids by an endocrine gland, which has a specific effect on the activities of other organs.

**Hyperglycemia**--An abnormally high level of sugar in the blood.

**Hypertension**--High blood pressure.

**Hypnotics**--Medications used to produce sleep.

**Hypoglycemia**--An abnormally low level of sugar in the blood.

**Hypokalemia**--An abnormally low level of potassium in the blood.

**Hypotension**--Low blood pressure.

## I

**Idiosyncrasy**--Unusual or unexpected effects from a medication.

**Immunity**--Resistance of the body to a particular disease.

**Incident report**--Written account of an error in documentation or medication administration, injury to an individual, or injury to a staff member or visitor.

**Incontinence**--Loss of bladder and/or bowel control.

**Infection**--Activity of disease-producing bacteria, virus, or fungus in the body and the reaction of the body to the microorganisms and their products.

**Infectious hepatitis**--Contagious infection of the liver.

**Inflammation**--Localized heat, redness, swelling, and pain as a result of irritation, injury, or infection.

**Influenza**--An acute highly contagious infection. Flu.

**Inhalation**--To draw in by breathing.

**Inhaler**--A device used to administer medication by the act of breathing in.

**Initial or Attack Dose of Medication**--This is the first main dose of a drug given to the person; this dose may be larger than the ones that follow it.

**Inner canthus**--The corner of the eyelid closest to the nose.

**Insertion**--Medication is placed into a specific area of the body, usually with the fingers.

**Insomnia**--Inability to sleep.

**Instillation**--The process of administering a liquid - usually drop by drop.

**Insulin**--A preparation derived from the pancreas of the pig, ox, or developed from semi-synthetic human insulin that is used in the medical treatment of diabetes.

**Iron deficiency anemia**--Low iron levels in the blood due to inadequate diet or blood loss.

**Ischemia**--Temporary decrease in the amount of blood being delivered to a part of the body; mainly due to the contraction of the blood vessel.

## J

**Jaundice**--Yellowish discoloration of tissues and body fluids with bile pigment caused by any of several pathological conditions in which normal processing of bile is interrupted.

## K

**Ketoacidosis**--Result of fat being used for energy resulting in an acidotic state. Form of acidosis in which sodium, potassium, and ketone bodies are lost in the urine; found in individuals who have diabetes mellitus.

## L

**Labia**--Folds of skin or mucus membrane that surround the vagina.

**Laceration**--A wound made by tearing.

**Laxative**--Given to cause a bowel movement (example: Exlax, Senokot).

**Lethargic**--Not alert, drifts off into sleep, drowsy, sluggish.

**Libel**--Any written statement that damages a person's character.

**Liniment**--A solution used as a vehicle to distribute medication.

**Liver**--organ of the body that secretes bile and causes changes in many of the substances in the blood.

**Local action**--Medication acting at the site of administration, on the skin or mucous membrane.

**Lotions**--Watery preparations that contain medication; are to be patted on, not rubbed in.

## M

**Maintenance dose of medication**--The doses following the initial dose.

**Malpractice**--Improper, injurious or negligent professional treatment or care of an individual.

**Marijuana**--The dried leaves and flowering tops of the pistillate hemp plant that yield THC and is usually smoked.

**Medical asepsis**--Cleaning measures taken to prevent the spread of infection in a doctor's office, hospital, or long-term care agency.

**Medication**--Any substance used in the diagnosis or treatment of disease or the relief of pain or other symptoms.

**Medicine dropper**--A small glass or plastic tube usually capped by a hollow rubber bulb at one end that is used for measuring and administering medication.

**Metabolism**--The physical and chemical processes involved in the maintenance of life.

**Miotics**--An agent that causes contraction of the pupil of the eye.

**Mons pubis**--Soft fatty tissue covering the joint of the pubic bones.

**Mood stabilizers**--Used to stabilize mood swings (elation or depression).

**Mucous membrane**--The inner lining of the mouth and labia minora.

**Muscle relaxant**--Medication that helps muscle tissue relax and be less tense and painful.

**Muscle spasm**--Condition of the muscles in which there is a sudden and violent tightening of the muscle.

**Muscle strain**--Condition in which the muscle is stretched.

**Mydriatics**--A drug that produces dilation of the pupils.

## N

**Nausea**--Feeling the need to vomit.

**Negligence**--Omission or neglect of any reasonable precaution, care, or action.

**Neuron**--A nerve cell.

**Neurotransmitters**--Chemical substances that assist an electrical nerve impulse to travel across the synapse.

**Nonsteroidal anti-inflammatory agents (NSAIA)**--Medications used to reduce symptoms of inflammation.

**Norepinephrine**--Chemical present in the adrenal glands.

## O

**Obese**--Extremely overweight.

**Ointment**--Mixtures of medications with a fatty base, soft enough to spread at room temperature or melt at body temperature.

**Oliguria**--Secretion of a diminished amount of urine in relation to the fluid intake.

**Ophthalmic medication**--Medication that is used exclusively in the eyes.

**Oral**--By mouth.

**Oral-hypoglycemics**--Stimulate specialized cells in the pancreas to produce insulin.

**Orthopnea**--Inability to breathe except in an upright position.

**Osteoporosis**--Abnormal porousness of the bone caused by the enlargement of its canals or the formation of abnormal spaces. Causes brittleness.

**Otic Preparation**--Any medication placed in the ears, usually to clean the ear or to treat ear infections (example: Cortisporin Otic Drops)

**Outer canthus**--The outer corner of the eyelid.

## P

**Pallor**--Paleness of the skin.

**Pancreas**--A large gland that secretes digestive enzymes and the hormone insulin.

**Paranoia**--Slower, progressive psychosis characterized by suspicions or ambition and delusions of persecution or of grandeur.

**Paraplegia**--Paralysis of the legs and lower part of the body; caused by disease or injury to the spine.

**Parenteral**--Introducing medication or food into the body by injection.

**Parkinsonism**--Varying degrees of loss of associated movements--rigidity of limbs, tremors, gait and posture disturbances, drooling, and skin changes.

**Pediculosis**--A contagious infestation of the hair, body, and pubic area caused by lice.

**Penis**--Cylinder-shaped vascular structure on the outside of the male body. Houses the external portion of the urethra, and is the male organ of copulation.

**Perineal**--The area between the thighs that includes the anus and vulva in the female and the anus and penis in the male.

**Pernicious anemia**--Vitamin b<sub>12</sub> deficiency.

**Perineum**--The area between the anus and the posterior part of the external genitalia.

**Petechia**--A small spot on the body surface caused by a minute hemorrhage.

**Phlebitis**--Inflammation of a vein.

**Phobia**--A persistent, illogical, or intense fear of something.

**Physical dependency**--State in which withdrawal of a drug produces specific symptoms such as muscle cramps, vomiting, or tremors.

**Pneumonia**--An acute or chronic disease marked by inflammation and infection in the lungs.

**Polyuria**--Large amounts of urinary output.

**Powder**--Solid medication that has been ground into fine particles and used in that form.

**Primary effect**--Reason a medication was ordered.

**Prostate**--Doughnut-shaped gland, in the male, composed of muscular and glandular tissue that surrounds the urethra at the bladder and adds alkaline substance to sperm.

**Psoriasis**--A chronic, noncontagious disease characterized by inflammation, reddened lesions, and white scaly patches.

**Psychological dependency**--An emotional need or craving for a drug.

**Psychosis**--any severe mental disorder, with or without organic damage, characterized by deterioration of normal intellectual and social functioning and by partial or complete withdrawal from reality.

**Psychotropics**--Drugs that affect moods.

**Pulse**--Rhythmical throbbing of the arteries caused by the heartbeat.

**Pyelonephritis**--Inflammation of both the kidney and the lining of the pelvis.

**Pyorrhea**--Inflammation of the gum and tooth sockets leading to loosening of the teeth.

## R

**Range of motion**--Moving a joint its full range in an attempt to prevent muscle contractions and joint deformity.

**Rash**--A skin eruption, usually reddened and raised.

**Rationalization**--To devise self-satisfying but incorrect reasons for one's behavior.

**Reasonable care**--Doing only those things that you have been trained to do; acting as others would act in the same or similar situations.

**Rectum**--The lowest or last, segment of the large intestine that ends at the anus.

**Regression**--Returning to an earlier less mature behavior pattern.

**Respiration**--Process of breathing.

**Rhinitis**--Inflammation and swelling of the lining of the nose.

**Rubella**--Known as German Measles; an acute infectious disease spread by droplet infection.

## S

**Scabies**--A contagious skin condition caused by mites that burrow under the skin; characterized by tiny, thread-like blisters that itch.

**Schizophrenia**--Sever emotional disorder, characterized by misinterpretation, retreat from reality, experiences of delirium, hallucination; individual loses ability to tell fact from imagination.

**Sclera**--White tissue covering all of the eyeball except the cornea.

**Scrotum**--Sac-like structure, located behind the penis, which holds the testicles.

**Secondary effect**--Additional effect of the medication besides the one for which it was intended.

**Sedative**--A drug having a calming effect, relieves anxiety and tension, being replaced by tranquilizer (less likely to cause drowsiness or dependency).

**Sediment**--Solid particles in the urine.

**Seminal vesicles**--Pouch-like structures, behind the bladder, which store sperm.

**Sensory system**--Receives outside sensations and relates these sensations to the proper nerves.

**Side effects**--Effects other than the effects for which a drug was given. These effects can be normal and expected or they can be abnormal and dangerous. Side effects can range from drowsiness to rashes, swelling, and vomiting.

**Sinus**--Air cavities in the skull that open into the nasal cavities.

**Slander**--A malicious statement of report.

**Somnolence**--Drowsiness, sleepiness.

**Sprain**--Wrenching of a joint, with partial rupture of its ligaments. More severe than a strain and requires longer recuperation.

**Standard of Care**--A description of conduct that illustrates what a reasonably prudent person would have done, or would not have done, under similar circumstances.

**Sterile**--When it has no germs or bacteria on it.

**Stimulant**--An agent that promotes the activity of a body system of function (example: amphetamines and caffeine).

**Strep throat**--A severely inflamed and infected throat.

**Stress**--Circumstances, physical or mental, that cause strain or tension.

**Suppositories**--a solid medication designed to melt within a body cavity other than the mouth.

**Syncope**--A brief loss of consciousness.

**Systemic action/infection**--Affecting the entire body.

## T

**Tablet**--Dried, powdered medication pressed into shape.

**Tachycardia**--Excessively rapid heartbeat, usually applied to a pulse rate above 100 per minute.

**Taridave Dyskinesia**--Involuntary, repetitive useless movements such as spasms, oculogyric crisis, protrusion of the tongue, stiff neck, and inability to swallow that occur almost continuously during waking hours but cease during sleep.

**Testicles**--Also called testes, produces testosterone and sperm cells for reproduction.

**Tetanus**--Known as Lockjaw; an acute infectious disease often caused by puncture wounds. Often fatal.

**Thrombophlebitis**--Inflammation of a vein that results in the formation of a clot.

**Tic Douloureux**--Spasm of a nerve in the face.

**Tinnitus**--A sound in the ears, such as buzzing, ringing, or whistling.

**Tolerance**--The ability to withstand the effects of a drug, after single or multiple administrations, without showing adverse effects.

**Topical**--pertaining to a particular spot; local.

**Toxic effect**--Effects of medications that become poisonous to the body.

**Trade name**--The name, given to a manufacturer, by which a medication is known.

**Tranquilizers**--A drug that produces a calming effect, relieving anxiety and tension.

**Transdermal patch**--Adhesive bandage containing medication.

**Tremor**--Involuntary trembling or shaking.

**Tuberculosis**--Communicable acute or chronic infection caused by mycobacterium tuberculosis.

**Turgor**--Normal fullness and elasticity of the skin.

## U

**Universal precautions**--Treatment of all blood and bodily fluids as if they were contaminated (blood and bodily fluid isolation), proper disposal of needles.

## V

**Vagina**--The canal leading from the vulva to the uterus in the female.

**Vas deferens (ductus deferens)**--Tube that carries sperm to the seminal vesicles.

**Vasodilators**--Drug that increases the blood supply to the brain and other parts of the body.

**Vertigo**--Dizziness.

**Voiding**--Eliminating urine.

## W

**Withdrawal**--The physiological readjustment that takes place upon the discontinuation of a medication.

**MEDICATION ADMINISTRATION COURSE**

**PART III**

**SELF-TEST STUDY GUIDES**

**REVISED - 1998**

## INTRODUCTION

### SELF TEST QUESTIONS

#### TRUE OR FALSE

- \_\_\_\_\_ 1. The CMA may only administer those medications ordered by a physician or dentist.
- \_\_\_\_\_ 2. The CMA may administer medication by Intramuscular, intravenous and subcutaneous routes.
- \_\_\_\_\_ 3. The CMA may receive and assume responsibility for reducing to writing oral or telephone orders from a physician.
- \_\_\_\_\_ 4. The CMA should record in the clients chart, doses delivered to and/or administered to client.
- \_\_\_\_\_ 5. The CMA is responsible to chart dry effects and side effects: obtain vital signs as indicated or ordered.
- \_\_\_\_\_ 6. The CMA may not administer medication by the oral inhalant route unless administering a pre-measured dosage unit provided by the manufacturer.
- \_\_\_\_\_ 7. The CMA may deliver pro-re-nata, PRN, as needed, medications when authorized by a licensed physician, dentist or registered nurse. This documentation must be documented in writing within 24 hours.
- \_\_\_\_\_ 8. The CMA may not alter medication doses as delivered from the pharmacy unless authorized by a physician or dentist.
- \_\_\_\_\_ 9. The CMA may administer medication in an acute care unit funded or operated by the Department of Health and Hospitals and/or Department of Social Services.

**RESPONSIBILITIES IN THE AREA OF  
MEDICATION ADMINISTRATION AND LEGAL MANDATES**

**SELF-TEST QUESTIONS - Lesson 1**

1. Malpractice is \_\_\_\_\_  
\_\_\_\_\_
2. Negligence is \_\_\_\_\_  
\_\_\_\_\_
3. List the six medication "Rights"  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. List three conditions that can cause medication errors.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 5 Your signature on a chart means that \_\_\_\_\_  
\_\_\_\_\_
- 6 Give four words that describe ethical behavior. \_\_\_\_\_  
\_\_\_\_\_
7. The first things to do if you make an error is \_\_\_\_\_ and  
\_\_\_\_\_.
8. \_\_\_\_\_ are medications that produce or sustain either  
mental or physical dependence.
9. There are many commonly used medications which \_\_\_\_\_ alike and  
\_\_\_\_\_.

## BASIC PHARMACOLOGY

### SELF TEST QUESTIONS - Lesson 2

1. \_\_\_\_\_ is the commonly used name for a drug.
2. \_\_\_\_\_ is the manufacturer's name.
3. Medication Therapy may be defined as the use of substances that \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ disease.
- 4 Name the four sources of medication: \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
5. Name the three systems of measurement used when ordering medication \_\_\_\_\_, \_\_\_\_\_ and \_\_\_\_\_.
6. Match the following:

a) po	1) 1 cc
b) stat	2) by mouth
c) 1 ml	3) 1 tsp
d) 5 ml	4) immediately
e) 1000 ml	5) 1 quart
f) 30 cc	6) 1 grain
g) 60 mg	7) 1 fluid ounce
7. The only tablets which may be broken are those that are \_\_\_\_\_.
8. \_\_\_\_\_ tablets are treated so they can pass through the stomach unchanged and then disintegrate in the intestine. They must NEVER be \_\_\_\_\_.

9. Match the following:

- |        |                           |
|--------|---------------------------|
| a) bid | 1) four times a day       |
| b) tid | 2) everyday               |
| c) qid | 3) every other day        |
| d) qd  | 4) before meals           |
| e) hs  | 5) twice a day            |
| f) qod | 6) after meals            |
| g) ac  | 7) three times a day      |
| h) pc  | 8) at bedtime             |
| i) qhs | 9) every night at bedtime |

10. Match the following

- |             |  |
|-------------|--|
| a) qh       | 1) if necessary, one time only                             |
| b) q2h      | 2) every three hours                                       |
| c) q3h      | 3) as needed, usually ordered with a certain time interval |
| d) q4h      | 4) every hour  |
| e) ad lib   | 5) every four hours  |
| f) s.o.s.   | 6) every two hours   |
| g) prn      | 7) as desired  |
| h) gtt      | 8) nothing by mouth  |
| i) mg       | 9) blood pressure  |
| j) mcg      | 10) milliliter   |
| k) ml       | 11) drop   |
| l) NPO, npo | 12) microgram  |
| m) gr       | 13) milligram  |
| n) B/P      | 14) grain  |
| o) ss       | 15) one half   |

11. Most drugs are metabolized in the \_\_\_\_\_.

12. List four factors which may result in a change of dosage of a medication.

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## FUNDAMENTALS OF MEDICATION THERAPY

### SELF-TEST QUESTIONS - Lesson 3

1. The most common routes of administration are \_\_\_\_\_ and \_\_\_\_\_.
2. Define:  
Capsule: \_\_\_\_\_
4. Never \_\_\_\_\_, \_\_\_\_\_, or \_\_\_\_\_ timed released capsules before administration.
5. Define:  
Tablet: \_\_\_\_\_
6. Suspensions must be \_\_\_\_\_ before use.
7. Define:  
Suppository: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
8. Suppositories melt at \_\_\_\_\_ temperature.
9. Define:  
Lotions: \_\_\_\_\_  
\_\_\_\_\_
10. Define:  
Desired effect: \_\_\_\_\_
11. Define:  
Side effects: \_\_\_\_\_  
\_\_\_\_\_
12. Side effects may be \_\_\_\_\_ or \_\_\_\_\_.

- 13. If medications do not appear to work, the \_\_\_\_\_ should be notified.
- 14. Food/Medication interactions can be the same as \_\_\_\_\_.
- 15. Define:  
Synergistic: \_\_\_\_\_.
- 16. Define:  
Antagonistic: \_\_\_\_\_.
- 17. Define:  
Medication Allergy: \_\_\_\_\_.
- 18. Define:  
Cumulation: \_\_\_\_\_.
- 19. Define:  
Addictive effect: \_\_\_\_\_.
- 20. A medication may be stopped but effects can last \_\_\_\_\_.

**PRINCIPLES AND FUNDAMENTALS OF ADMINISTERING MEDICATIONS**

**SELF TEST QUESTIONS - Lesson 4**

1. Describe the RULE OF THREE

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2. Chart medications only \_\_\_\_\_ you have given them.

3. Obtain ordered vital signs \_\_\_\_\_ administering medications.

4. List three precautions that aid in preventing errors when administering medications:

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5. List three precautions that aid in preventing errors when preparing medications.

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6. The omission of a medication should be reported to the nurse.

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7. Describe the procedure to follow when an individual refuses medication:

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8. State at least four reasons other than refusal when medications might be omitted.

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9. Never flush wasted or contaminated controlled substances \_\_\_\_\_  
\_\_\_\_\_
10. Medication must be stored in a \_\_\_\_\_ cabinet.
11. Topical medications must be stored \_\_\_\_\_ from oral medications.
12. Suppositories are to be stored in \_\_\_\_\_  
\_\_\_\_\_
13. Medications stored in the refrigerator must be kept in a \_\_\_\_\_  
\_\_\_\_\_
14. Labels on medication bottles must always be \_\_\_\_\_ and \_\_\_\_\_
15. When receiving medications from the pharmacy you must \_\_\_\_\_, check it against the list of medications \_\_\_\_\_ and \_\_\_\_\_ it correctly.
17. Never pour medication into your \_\_\_\_\_.
18. After pouring a liquid medication always \_\_\_\_\_ the outside of the bottle with a clean wet cloth.
19. The single most important step to take to prevent the spread of infection is \_\_\_\_\_
20. Define Universal Precautions:  
\_\_\_\_\_  
\_\_\_\_\_
21. The best means of protection from direct exposure to blood or visibly contaminated body fluids is to wear \_\_\_\_\_
22. Gloves shall be \_\_\_\_\_ and \_\_\_\_\_ after contact with each client.
23. Scientific evidence indicates that only \_\_\_\_\_ contact with semen, vaginal secretions, blood, or visibly blood contaminated body fluids carries a potential risk for HIV transmission

**THE MEDICATION CYCLE**  
**A. OBSERVING FOR PHYSICAL AND**  
**BEHAVIOR PROBLEMS AND/OR CHANGES**

**SELF TEST QUESTIONS - Lesson 5-A**

1. The individuals who have the most contact with the clients are:  
\_\_\_\_\_
  
2. Define:  
Objective Symptoms: \_\_\_\_\_  
Subjective Symptoms: \_\_\_\_\_
  
3. When observing the individual report \_\_\_\_\_  
to the staff nurse
  
4. When charting an Axillary temperature add \_\_\_\_\_ after the reading.
  
5. When charting the general appearance of the client's skin color, note:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
  
6. When charting the emotional status of an individual, it is always important to describe in detail his \_\_\_\_\_.

**THE MEDICATION CYCLE**  
**B. REPORTING AND RECORDING PHYSICAL AND**  
**BEHAVIOR PROBLEMS AND/OR CHANGES**

**SELF TEST QUESTIONS-Lesson 5-B**

- 1 List some emergency conditions: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
2. Get \_\_\_\_\_, but stay with the individual until \_\_\_\_\_ arrives.
3. Can you think of some non-emergencies? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. If you are in doubt as to whether a situation is an emergency, your best bet is to: \_\_\_\_\_  
\_\_\_\_\_
5. When should an emergency situation be reported?  
\_\_\_\_\_

**THE MEDICATION CYCLE**  
**C. ASSISTING IN VISIT TO THE PHYSICIAN AND PHARMACIST**

**SELF TEST QUESTIONS-Lesson 5-C**

1. List information you need to tell and/or give the physician:

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2. List questions you should ask about a medication:

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3. Describe Unit Dose: \_\_\_\_\_

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Refer back to Clara Barton, Prescription Label and answer the following questions:

4. Is phenytoin a generic or trade name? \_\_\_\_\_

5. How many times a day does Clara receive her medication? \_\_\_\_\_

6. How many capsules does Clara take each time? \_\_\_\_\_

7. How many capsules will be given per day? \_\_\_\_\_

8. How many times can the prescription be refilled? \_\_\_\_\_

9. List some questions you may have to ask the pharmacist about the medication \_\_\_\_\_

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10. List some ways to assure the individual receives medication when out of the residence: \_\_\_\_\_

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**THE MEDICATION CYCLE**  
**D. RECORDING AND STORAGE OF MEDICATIONS**

**Self Test Questions-Lesson 5-D**

1. Drug supplies for each individual must be stored under the proper conditions of: \_\_\_\_\_ and \_\_\_\_\_.
2. Bottles must always be \_\_\_\_\_ when not in use to prevent deterioration of the medicine.
3. List the 3 conditions which must be met before over the counter drugs may be administered:  
(1) \_\_\_\_\_  
(2) \_\_\_\_\_  
(3) \_\_\_\_\_
4. Any drug container having a detached or unreadable label must be:  
\_\_\_\_\_
5. The area in which medications for external use are stored, must be marked:  
\_\_\_\_\_

**MEDICATION ADMINISTRATION**  
**SELF-TEST QUESTIONS - Lesson 6**

1. List the "Six Rights" of Medication Administration:

- (1) \_\_\_\_\_
- (2) \_\_\_\_\_
- (3) \_\_\_\_\_
- (4) \_\_\_\_\_
- (5) \_\_\_\_\_
- (6) \_\_\_\_\_

2. Describe procedure to determine right individual:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Describe procedure to determine right medication:

\_\_\_\_\_  
\_\_\_\_\_

4. Describe procedure to determine right dosage:

\_\_\_\_\_  
\_\_\_\_\_

5. Medications should be administered as

\_\_\_\_\_  
\_\_\_\_\_

6. If a medication is to be administered at 9:00 a.m., it can be given from \_\_\_\_\_ to \_\_\_\_\_.

7. Describe procedure to determine right route:

\_\_\_\_\_  
\_\_\_\_\_

8. Documentation that a medication was given is done: \_\_\_\_\_ administration.

9. List some DO's and DON'Ts of medication administration: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

10. The \_\_\_\_\_ is a record that describes the medications used by the individual, the dose, the route and the times the medication is to be taken.
11. A medication that is given "as needed" is a \_\_\_\_\_ medication.
12. When a medication error occurs you must \_\_\_\_\_ and \_\_\_\_\_ the error.
13. A medication error occurs when any one or more of the \_\_\_\_\_ of medication administration is violated.
14. List examples of violations in medication administration which result in medication errors: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
15. List four occasions when not to give medications:  
(1) \_\_\_\_\_  
(2) \_\_\_\_\_  
(3) \_\_\_\_\_  
(4) \_\_\_\_\_

## DOCUMENTATION

### SELF-TEST QUESTIONS - Lesson 7

- T or F 1. Legibility is not very important on the chart.
- T or F 2. You may use white out or liquid paper on the record.
- T or F 3. The date and time of an entry are very important parts of the record.
- T or F 4. Chart what you see, hear, smell, touch and what you think or feel.

5. Every medication given must be charted for the correct individual and include the following information:

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

6. Name the parts of a medication order.

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7. Routine medications are charted by putting your \_\_\_\_\_ in the appropriate box on the medication record, and by \_\_\_\_\_ your complete name and title in the appropriate space.

8. The effects of \_\_\_\_\_ medications must be charted after an appropriate period of time.

9. If a medication is not charted and legible, it is \_\_\_\_\_

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## INTRODUCTION TO THE USE OF MEDICATION REFERENCES

### SELF-TEST QUESTIONS - Lesson 8

1. The initials PDR stands for:  
\_\_\_\_\_
2. The PDR is divided into \_\_\_\_\_ sections.
3. Which section of the PDR would you find a color picture of the drug product? \_\_\_\_\_
4. Which section lists drug products alphabetically by brand names?  
\_\_\_\_\_
5. A \_\_\_\_\_ is a list of drugs most commonly used in your agency and developed by the pharmacist.
6. A package brochure must accompany each package of the drug product and be approved by the \_\_\_\_\_ before the product is released for marketing.

## MEDICATION CLASSIFICATIONS - OVERVIEW

### SELF-TEST QUESTIONS - Lesson 9

1. Define the term classification: \_\_\_\_\_
  
2. Give the action of the following classifications:
  - a. antacids \_\_\_\_\_
  - b. steroids \_\_\_\_\_
  - c. urinary antiseptics \_\_\_\_\_
  - d. diuretics \_\_\_\_\_
  
3. List two adverse effects of the following classifications:
  - a. antidiarrheals \_\_\_\_\_
  - b. saline laxatives \_\_\_\_\_
  - c. non-steroidal anti-inflammatory agents \_\_\_\_\_
  - d. adrenergic blocking agents \_\_\_\_\_
  
4. Give the classification for each drug:
  - a. Propoxyphene (Darvon) \_\_\_\_\_
  - b. Nalidixic acid (NegGram) \_\_\_\_\_
  - c. Furosemide (Lasix) \_\_\_\_\_
  - d. Magnesium salts (Milk of Magnesia) \_\_\_\_\_
  - e. Levodopa-carbidopa (Sinemet) \_\_\_\_\_
  - f. Auralgan \_\_\_\_\_
  - g. Methyldopa (Aldomet) \_\_\_\_\_
  - h. Diphenhydramine (Benadryl) \_\_\_\_\_
  - i. Folic Acid \_\_\_\_\_
  - j. Kenalog \_\_\_\_\_
  - k. Indomethacin (Indocin) \_\_\_\_\_
  - l. Dexamethasone (Decadron) \_\_\_\_\_
  - m. Loperamide (Imodium) \_\_\_\_\_
  - n. Meperidine HCl (Demerol) \_\_\_\_\_
  - o. Ortho-Novum \_\_\_\_\_

**MEDICATION CLASSIFICATIONS - SPECIFICS**

**VITAMINS AND MINERALS**

**SELF-TEST QUESTIONS - Lesson 10, Section 1**

1. Eating a \_\_\_\_\_ diet will provide adequate vitamins and minerals.
2. List four periods when additional vitamins and minerals may be required.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
3. List your responsibilities when administering vitamins and minerals.  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
4. Define:  
Hematinic: \_\_\_\_\_  
\_\_\_\_\_
5. List two (2) side effects of Hematinics.  
1. \_\_\_\_\_  
2. \_\_\_\_\_
6. Side effects can be reduced if: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
7. Liquid iron preparations should be given through a \_\_\_\_\_.

**MEDICATIONS THAT AFFECT THE RESPIRATORY SYSTEM**  
**SELF-TEST QUESTIONS - Lesson 10, Section 2**

1. List the symptoms of an allergic response: \_\_\_\_\_  
\_\_\_\_\_
2. Symptoms of anaphylactic shock are: \_\_\_\_\_  
\_\_\_\_\_
3. Anaphylactic shock may be caused by \_\_\_\_\_  
\_\_\_\_\_
4. Define. Antihistamine: \_\_\_\_\_  
\_\_\_\_\_
5. Antihistamines are used for: \_\_\_\_\_  
\_\_\_\_\_
6. Most common side effects of antihistamines are: \_\_\_\_\_  
\_\_\_\_\_
7. Define. Expectorant: \_\_\_\_\_  
\_\_\_\_\_
8. Define. Antitussives: \_\_\_\_\_  
\_\_\_\_\_
9. Two cautions to observe: \_\_\_\_\_  
\_\_\_\_\_
10. List three (3) side effects of cough preparations:  
(1) \_\_\_\_\_  
(2) \_\_\_\_\_  
(3) \_\_\_\_\_

11. Define. Bronchodilators: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
12. List the side effects of bronchodilators: \_\_\_\_\_  
\_\_\_\_\_
13. Antitubercular medications are used to treat: \_\_\_\_\_
14. List side effects of antitubercular medications \_\_\_\_\_  
\_\_\_\_\_
15. The possibility of nausea and vomiting may be \_\_\_\_\_ by giving  
medications \_\_\_\_\_ meals.

**MEDICATION CLASSIFICATIONS  
GENERAL AND LOCAL ANTI-INFECTIVES  
SELF-TEST QUESTIONS - Lesson 10, Section 3**

1. Antibiotic medications are used to \_\_\_\_\_ or control bacteria.
2. Some antibiotics are \_\_\_\_\_ for certain bacteria.
3. Bacteria can be gram \_\_\_\_\_ or gram \_\_\_\_\_.
4. Broad spectrum antibiotics have a \_\_\_\_\_ of activity.
5. Narrow spectrum antibiotics have a narrow \_\_\_\_\_ of activity.
6. If a individual is seriously ill, he/she may be given a \_\_\_\_\_ antibiotic prior to lab results.
7. Always read label for \_\_\_\_\_ directions.
8. Before giving \_\_\_\_\_ check the \_\_\_\_\_ date.
9. Antibiotics should not be used for \_\_\_\_\_ infections. With frequent use of antibiotics a body can become \_\_\_\_\_.
10. An allergic reaction is the body's reaction to \_\_\_\_\_ substance.
11. Toxic effect can be \_\_\_\_\_ and leave permanent \_\_\_\_\_.
12. Toxic reactions are \_\_\_\_\_ but are \_\_\_\_\_ when they occur.
13. Possible signs of toxic reactions are: \_\_\_\_\_  
\_\_\_\_\_
14. Never administer an antibiotic unless you are sure the individual has never had an \_\_\_\_\_ reaction.
15. If a individual has had an \_\_\_\_\_ it must be \_\_\_\_\_ and reported.

16. List responsibilities when administering antibiotics:

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17. Define. Antifungal Agents: \_\_\_\_\_

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18. Define. Amebicides: \_\_\_\_\_

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19. Define. Trichomonacides: \_\_\_\_\_

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20. List responsibilities when administering:

(a) Amebicides: \_\_\_\_\_

(b) Trichomonacides: \_\_\_\_\_

21. Kwell should never be used on \_\_\_\_\_ skin areas.

22. List the forms that Kwell comes in: \_\_\_\_\_

23. List directions for use of Kwell for scabies or lice on: \_\_\_\_\_

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24. List directions for use of Kwell for head lice: \_\_\_\_\_

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25. List cautions: \_\_\_\_\_

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26. Define. Anthelmintics \_\_\_\_\_

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List side effects of Anthelmintics: \_\_\_\_\_

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## MEDICATIONS THAT AFFECT THE CARDIOVASCULAR SYSTEM

### SELF-TEST QUESTIONS - Lesson 10, Section 4

1. What is the action of Digitalis? \_\_\_\_\_
2. Digitalis preparations have \_\_\_\_\_ spelling.
3. If the pulse is \_\_\_\_\_ or below, you should request further guidance before administering Digitalis preparations.
4. List side effects of Digitalis preparations: \_\_\_\_\_  
\_\_\_\_\_
5. Define. Antiarrhythmic Medications: \_\_\_\_\_  
\_\_\_\_\_
6. Two responsibilities when administering antiarrhythmic medications include: \_\_\_\_\_  
\_\_\_\_\_
7. List possible side effects of Antiarrhythmics: \_\_\_\_\_  
\_\_\_\_\_
8. Vasodilators may be used to prevent \_\_\_\_\_ pain and increase \_\_\_\_\_.
9. Define. Sublingual: \_\_\_\_\_
10. List side effects of Vasodilators: \_\_\_\_\_  
\_\_\_\_\_
11. Salt can contribute to \_\_\_\_\_
12. Diuretics \_\_\_\_\_ urine and salt excretion.
13. Potassium is necessary for \_\_\_\_\_ and \_\_\_\_\_ function.
14. Signs of potassium depletion are: \_\_\_\_\_
15. Responsibilities when administering diuretics are: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

16. Define: Antihypertensives: \_\_\_\_\_
17. Major caution with Antihypertensives is to monitor \_\_\_\_\_.
18. List possible side effects of Antihypertensive medications: \_\_\_\_\_  
\_\_\_\_\_
19. Two Most common side effects are: \_\_\_\_\_  
\_\_\_\_\_
20. a. Anticoagulants are medications which \_\_\_\_\_  
\_\_\_\_\_.
- b. Coagulants \_\_\_\_\_ clot formation.
21. Signs of hemorrhage are: \_\_\_\_\_  
\_\_\_\_\_
22. When an individual is on \_\_\_\_\_ therapy,  
\_\_\_\_\_ should be done routinely and whenever stopping and starting another medication.

**MEDICATION CLASSIFICATIONS**  
**MEDICATIONS THAT AFFECT THE URINARY SYSTEM**

**SELF-TEST QUESTIONS - Lesson 10, Section 5**

1. Sulfonamides are used to treat \_\_\_\_\_
2. List two responsibilities: \_\_\_\_\_
3. List side effects: \_\_\_\_\_
4. Once an individual has urinary tract infection, it is likely to \_\_\_\_\_
5. Urinary antiseptics may \_\_\_\_\_ the color of urine and cause stomach \_\_\_\_\_.
6. List your responsibilities:  
\_\_\_\_\_  
\_\_\_\_\_
7. When a urinary antiseptic has AZO before the name, \_\_\_\_\_ has been added.
8. Urecholine \_\_\_\_\_ urinary retention.
9. Side effects associated with urecholine include:  
\_\_\_\_\_  
\_\_\_\_\_

11. Can you think of ways to calm a individual other than drugs?

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12. Sedative-hypnotics will interact with \_\_\_\_\_

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13. Alcohol is a C.N.S \_\_\_\_\_

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14. Sedative hypnotics reduce effectiveness of: \_\_\_\_\_

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15. Major life threatening side effects of sedative hypnotics:

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16. If you observe life threatening signs, immediately \_\_\_\_\_ the  
physician or nurse.

17. Define:

Analgesics: \_\_\_\_\_

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18. Two classes of analgesics are: \_\_\_\_\_

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19. Narcotic analgesics are capable of \_\_\_\_\_  
severe pain.

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20. Common side effects of narcotics are: \_\_\_\_\_

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21. When individuals are taking narcotics, the \_\_\_\_\_ rate should be  
checked.

22. Define:

Antipyretics: \_\_\_\_\_

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Anti-inflammatory \_\_\_\_\_

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23. List side effects of analgesics: \_\_\_\_\_

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23. List side effects of analgesics: \_\_\_\_\_  
\_\_\_\_\_
24. When possible, administer salicylates with \_\_\_\_\_  
or after \_\_\_\_\_.
25. Define: Anti-Anxiety Medications: \_\_\_\_\_  
\_\_\_\_\_
26. Anti-Anxiety Medications can cause \_\_\_\_\_ and  
\_\_\_\_\_ dependence.
27. List side effects of Anti-Anxiety Medications: \_\_\_\_\_  
\_\_\_\_\_
28. When taking antianxiety medication, stomach distress can be minimized by:  
\_\_\_\_\_
29. Define: Antipsychotic Medications: \_\_\_\_\_  
\_\_\_\_\_
30. List the severe side effects of antipsychotics: \_\_\_\_\_  
\_\_\_\_\_
31. Define: Tardive Dyskinesia: \_\_\_\_\_  
\_\_\_\_\_
32. List some signs of a blood dyscrasia: \_\_\_\_\_  
\_\_\_\_\_
33. Antidepressants will relieve \_\_\_\_\_ and \_\_\_\_\_
34. List side effects of Antidepressants: \_\_\_\_\_  
\_\_\_\_\_
35. \_\_\_\_\_ should be avoided when an individual  
is taking MA01 medications.

36. \_\_\_\_\_ is a medication used for individuals who are diagnosed as manic-depressives.
37. Anticonvulsants are used to control: \_\_\_\_\_
38. List side effects of anticonvulsants: \_\_\_\_\_  
\_\_\_\_\_
39. A way to decrease gum overgrowth is: \_\_\_\_\_
40. Always give anticonvulsants with large amounts of \_\_\_\_\_  
or after \_\_\_\_\_

**MEDICATION CLASSIFICATIONS**  
**MEDICATIONS THAT AFFECT THE ENDOCRINE SYSTEM**

**SELF-TEST QUESTIONS - Lesson 10, Section 7**

1. Define: Diabetes Mellitus: \_\_\_\_\_  
\_\_\_\_\_
  
2. List the functions of insulin: \_\_\_\_\_  
\_\_\_\_\_
  
3. List the most common signs of Diabetes Mellitus: \_\_\_\_\_  
\_\_\_\_\_
  
4. Complete the Chart:  
**Causes of Insulin shock:** \_\_\_\_\_  
**Onset:** \_\_\_\_\_  
**Signs:** \_\_\_\_\_  
\_\_\_\_\_  
**First aid measure for shock:** \_\_\_\_\_  
\_\_\_\_\_  
  
**Causes of Diabetic Coma:** \_\_\_\_\_  
**Onset:** \_\_\_\_\_  
**Signs:** \_\_\_\_\_  
\_\_\_\_\_
  
5. Oral hypoglycemics resemble \_\_\_\_\_ activity.

6. List side effects of oral hypoglycemics: \_\_\_\_\_  
\_\_\_\_\_

7. Steroids may be used for: \_\_\_\_\_  
\_\_\_\_\_

8. Define: Steroids: \_\_\_\_\_  
\_\_\_\_\_

9. List responsibilities when administering steroid medication:  
\_\_\_\_\_  
\_\_\_\_\_

10. List side effects to steroids:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

11. When giving birth control medications, always \_\_\_\_\_ label for directions.

12. List dangerous side effects of the birth control pills:  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**MEDICATION CLASSIFICATIONS**  
**MEDICATIONS THAT AFFECT THE GASTROINTESTINAL SYSTEM**  
**SELF-TEST QUESTIONS - Lesson 10, Section 8**

1. Define:  
Antacid: \_\_\_\_\_
  
2. Signs of excess stomach acid are: \_\_\_\_\_
  
3. Define:  
Emetic: \_\_\_\_\_
  
4. Do not give emetics if the poison is: \_\_\_\_\_
  
5. A medication used to cause vomiting is: \_\_\_\_\_
  
6. Define:  
Antiemetics: \_\_\_\_\_
  
7. Antihistamines may be used as: \_\_\_\_\_
  
8. Side effects of antiemetics may include: \_\_\_\_\_  
\_\_\_\_\_
  
9. Household remedies for nausea and vomiting are: \_\_\_\_\_  
\_\_\_\_\_
  
10. Carthartics and laxatives are used for: \_\_\_\_\_

11. List causes of constipation: \_\_\_\_\_  
\_\_\_\_\_
12. Cathartics and laxatives should not be given if individual complains of:  
\_\_\_\_\_
13. List side effects of laxatives: \_\_\_\_\_  
\_\_\_\_\_
14. List causes of diarrhea: \_\_\_\_\_  
\_\_\_\_\_
15. Simple diarrhea is due to: \_\_\_\_\_
16. Most frequent side effects of antidiarrheal medications is:  
\_\_\_\_\_

**MEDICATION CLASSIFICATIONS**  
**MEDICATIONS THAT AFFECT THE SKIN AND MUCOUS MEMBRANES**

**SELF-TEST QUESTIONS - Lesson 10, Section 9**

1. Medications applied to skin may have a \_\_\_\_\_ or \_\_\_\_\_ effect.

2. Define:

Emollient: \_\_\_\_\_

Demulcent: \_\_\_\_\_

Astringent: \_\_\_\_\_

Counterirritants: \_\_\_\_\_

Antipruritics \_\_\_\_\_

3. Define:

Antiseptics: \_\_\_\_\_

4. Always read \_\_\_\_\_ for directions.

**MEDICATION CLASSIFICATIONS**  
**MEDICATIONS THAT AFFECT THE EYE AND EAR**

**SELF-TEST QUESTIONS - Lesson 10, Section 10**

1. Define:

Miotics: \_\_\_\_\_

2. List two antibiotic ophthalmic ointments: \_\_\_\_\_

\_\_\_\_\_

3. What are your major responsibilities when working with eye medications: \_\_\_\_\_

\_\_\_\_\_

4. \_\_\_\_\_ are used for ear infections.

5. Nausea and vomiting may be relieved by: \_\_\_\_\_