Top 200 Drugs: Gastrointestinal and Respiratory Systems

Unit: Laws and Regulations

Problem Area: Legal Classifications of Medications

Lesson: Top 200 Drugs: Gastrointestinal and Respiratory Systems

Student Learning Objectives.

Instruction in this lesson should result in students achieving the following objectives:

1. **Describe symptoms of gastrointestinal and respiratory disorders.**
2. **Identify primary gastrointestinal and respiratory drugs.**

Resources.

The following resources may be useful in teaching this lesson:

E-unit(s) corresponding to this lesson plan. CAERT, Inc. http://www.mycaert.com.

Ballington, Don A., and Robert J. Anderson. *Pharmacy Practice for Technicians*, 6th ed. Paradigm Education Solutions, 2016.

Ballington, Don A., Mary M. Laughlin, and Skye McKennon. *Pharmacology for Technicians*, 6th ed. Paradigm Education Solutions, 2016.

"Drugs & Medications A-Z," *WebMD.* Accessed November 27, 2018. https://www.webmd.com/drugs/2/index.

Elsevier, Karen Davis, and Anthony Guerra. *Mosby's Pharmacy Technician: Principles and Practice*, 5th ed. Elsevier, 2018.

Guerra, Tony. "The Top 200 Drugs of 2017?," *PharmacyTimes*. Accessed November 27, 2018. http://www.pharmacytimes.com/contributor/tony-guerra-pharmd/2017/03/the-top-200-drugs-of-2017.

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Kane, Sean. "Top 200 Drugs of 2018: Which Ones Are Making An Impact?" *PharmacyTimes.* Accessed November 27, 2018. http://www.pharmacytimes.com/contributor/sean-kane-pharmd/2018/02/the-top-200-drugs-of-2018-which-drugs-are-making-an-impact.

"MedlinePlus," *United States National Library of Medicine*. Accessed November 27, 2018. https://www.medlineplus.gov/druginformation.html.

Equipment, Tools, Supplies, and Facilities

- ✓ Overhead or PowerPoint projector
- ✓ Visual(s) from accompanying master(s)
- ✓ Copies of sample test, lab sheet(s), and/or other items designed for duplication
- ✓ Materials listed on duplicated items
- ✓ Computers with printers and Internet access
- ✓ Classroom resource and reference materials

Key Terms.

The following terms are presented in this lesson (shown in bold italics):

- 5-aminosalycilate (5-ASA)
- 5-HT3 receptor antagonists
- absorption
- acetylcholine
- adrenal glands
- allergen
- alveoli
- anticholinergics
- antitussive
- antivirals
- asthma
- bronchitis
- chronic obstructive pulmonary disease (COPD)
- common cold
- constipation
- corticosteroids
- Crohn's disease
- decongestant
- digestion
- digestive system
- dilate
- drug
- drug class
- dyspnea
- elimination
- emesis
- emphysema
- esophagus
- expectorant
- gastric
- gastroesophageal reflux disease (GERD)
- gastrointestinal system
- generic drug
- h2-blockers
- heartburn
- histamine
- histamine2 antagonists
- inflammation
- influenza
- ingestion
- laxative
- leukotrienes
- leukotriene receptor antagonist (LTRA)
- long-acting beta-agonists (LABAs)
- nausea
- peptic ulcers
- phlegm
- proton pump inhibitor (PPI)
- respiratory system
- short-acting beta-agonists (SABAs)
- steroids
- ulcerative colitis
- vomiting

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Interest Approach. Use an interest approach that will prepare the students for the lesson. Teachers often develop approaches for their unique class and student situations. A possible approach is included here.

> *The Top 200 Drugs is a list of the largest selling pharmaceutical products by sales revenue. Americans take more prescription pills than ever before and they take medicine than people in any other country. More than half of Americans regularly take a prescription medication, four drugs on average. Learning all of the available drugs can be a difficult task. Learning how drugs are classified (drugs in the same class often have the same ending) can help you to remember more of the Top 200 Drugs. Pharmacy technicians play a key role in the dispensing of drugs and pharmacists rely heavily on them to ensure that medications are dispensed correctly.*

CONTENT SUMMARY AND TEACHING STRATEGIES

Objective 1: Describe symptoms of gastrointestinal and respiratory disorders.

Anticipated Problem: What is the gastrointestinal system? What is the respiratory system? What are symptoms of dysfunctional conditions of the gastrointestinal and respiratory systems?

I. Symptoms of gastrointestinal and respiratory disorders

A. GASTROINTESTINAL SYSTEM: The ***gastrointestinal system***, also called the ***digestive system***, is a group of organs that breaks down food, absorbs its nutrients, and eliminates the unused material. The digestive system includes the salivary glands, mouth, esophagus, stomach, liver, gallbladder, pancreas, small intestine, large intestine, colon, and rectum. The gastrointestinal system carries out four main functions in the body.

1. *Functions*
   a. ***Ingestion*** is the process by which food, drink, or other substances are taken into the body.
   b. ***Digestion*** is the process by which ingested food or other substances are broken down into a form that can then be absorbed into the tissues of the body.
   c. ***Absorption*** is the movement of nutrients and water from the digestive system into the circulatory and lymphatic systems.
   d. ***Elimination*** is the removal of the waste produced during digestion and absorption.

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2. *Gastrointestinal Conditions*
    a. ***Gastroesophageal reflux disease (GERD)*** is a condition in which the acidified liquid content of the stomach backs up into the esophagus. The ***esophagus*** is the tube connecting the throat with the stomach. The main symptom of GERD is heartburn. ***Heartburn,*** a form of indigestion, is a burning feeling in the lower chest along with a sour or bitter taste in the throat and mouth. Other symptoms include nausea or vomiting, bad breath, difficulty or pain when swallowing, wearing away of the teeth, and abdominal pain that worsens before meals and may awaken the individual from sleep.
    b. ***Peptic ulcers*** are sores on the inside of the stomach lining (gastric) or the upper part of the small intestine (duodenal). Symptoms include burning stomach pain, feeling of fullness, bloating, belching, heartburn, nausea, appetite changes, and unexplained weight loss. Blood in the feces or feces that appear dark and tarry, difficulty breathing, feeling faint or losing consciousness, and vomiting blood are severe symptoms of peptic ulcers. However, according to the Mayo Clinic, nearly 75% of people who have gastric or duodenal ulcers do not experience symptoms.
    c. ***Constipation*** is a condition in which the feces are hard and dry and bowel movements are infrequent or irregular. Abdominal pain, bloating, and feeling as if one has not completely passed the bowel movement are symptoms of constipation.
    d. ***Nausea*** is the urge to vomit. ***Emesis*** (***vomiting***) is the forcible emptying of the stomach. Most people have experienced nausea and vomiting, and it is usually an isolated event. Nausea may be triggered by odor, pain, medication, motion sickness, and even emotions.
    e. ***Ulcerative colitis*** is a chronic disease that causes inflammation and sores (ulcers) on the inner lining of the large intestine. ***Inflammation*** is a physical condition in which part of the body becomes reddened, swollen, hot, and often painful. Symptoms of ulcerative colitis are stomach pain, cramps, bloody diarrhea, or bleeding from the rectum. Some people may experience fever, loss of appetite, and weight loss. Ulcerative colitis is a type of inflammatory bowel disease (IBD).
    f. ***Crohn's disease*** is a chronic inflammatory bowel disease that causes inflammation of the digestive tract. It can affect any part of the gastrointestinal tract from the mouth to the anus. Abdominal pain, cramps, fever, diarrhea, rectal bleeding, constipation, vomiting, weight loss and malnutrition are symptoms of Crohn's disease.

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B. RESPIRATORY SYSTEM: The ***respiratory system*** is the group of organs responsible for breathing in air, absorbing oxygen, and breathing out carbon dioxide. Those organs are the nose, mouth, pharynx, larynx, trachea, bronchi, diaphragm, and lungs. The respiratory system provides oxygen to the body's cells while removing carbon dioxide, a waste product that can be lethal if allowed to accumulate. Drugs classified in the Top 200 category treat the following respiratory conditions:

1. *Cold*: The ***common cold***, the most prevalent form of respiratory tract infection, is a viral infection of the nose and throat. A runny or stuffy nose, sneezing, sore throat, cough, low grade fever, headache, and fatigue are symptoms of the common cold.
2. *Allergies*: An ***allergen*** is a substance that causes the body's immune system to produce an allergic reaction. Allergens can vary widely. Common allergens are pollens, animal dander, foods, medications, chemicals, or environmental pollutants. Allergies are an abnormal response of the immune system to an unrecognized, typically harmless substance. In some people, the allergic response can be severe to life threatening. Numerous symptoms are associated with allergies, including: wheezing, sneezing, coughing, difficulty breathing, shortness of breath, hives, vomiting, swollen lips, swollen airways, sore throat, itchy rash, watery eyes, a runny nose, nasal congestion, nausea, diarrhea, etc.
3. *Influenza*: ***Influenza*** is a severe, highly contagious viral respiratory infection. For most people, influenza resolves on its own. However, in the very young, the very old, and those with a weakened immune system, influenza may result in slow recovery or, possibly, death. Symptoms include fever, cough, sore throat, runny or stuffy nose, muscle or body aches, headache, fatigue, and, in some cases, vomiting and diarrhea. Influenza should not be confused with stomach flu.
4. *Asthma*: ***Asthma*** is a respiratory condition in which the airways are inflamed and narrowed, making breathing difficult. The secretion of mucus into the airway worsens asthma. ***Dyspnea*** is shortness of breath. Dyspnea is a symptom of asthma, along with coughing, wheezing (or whistling sound when exhaling), and chest tightness or pain.
5. *COPD*: ***Chronic obstructive pulmonary disease (COPD)*** is a respiratory lung disease that causes a restricted airflow from the lungs. The two general types of COPD are chronic bronchitis and emphysema.
    a. ***Bronchitis*** is an inflammation of the lining of the bronchial tubes, causing an obstruction of the airflow to and from the lungs. Bronchitis is usually caused by a virus. The main symptom of bronchitis is phlegm. ***Phlegm*** is a thick substance secreted by the mucus membranes of the respiratory system. Other symptoms may include a cough, shortness of breath, chest discomfort, slight fever, and chills.
    b. ***Emphysema*** is a progressive disease in which the air sacs of the lungs are damaged, resulting in shortness of breath. The air sacs of the lungs are called ***alveoli***. The main cause of emphysema is long term exposure to

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cigarette smoke or other airborne irritants. Dyspnea, chronic cough, wheezing, chest tightness, frequent respiratory infections, lack of energy, weight loss, and swelling in ankles and feet are symptoms of emphysema.

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–A to review the disorders associated with the gastrointestinal and respiratory systems. Have students visit the Quizlet website at https://www.quizlet.com and search for diseases of the gastrointestinal and respiratory systems. Have students complete the learning games, flashcards, and test and turn in the results.*

Objective 2: Identify primary gastrointestinal and respiratory drugs.

Anticipated Problem: What are primary gastrointestinal and respiratory drugs?

II. Gastrointestinal and respiratory drugs by drug class

A. DRUGS: A ***drug*** is a chemical substance (a medication or a medicine) used to treat, cure, prevent, or diagnose a disease, or to promote wellness. Commonly, a drug substance has a generic name plus one or more brand names.

1. *Generics*: A ***generic drug*** is a copy of a brand name drug with exactly the same dosage, intended use, side effects, route of administration, risks, safety, and strength as the original drug. A generic drug cannot be marketed until after the brand name drug's patent has expired. Generic names are often shorthand versions of the drug's chemical name, structure, or formula. Official governmental bodies assign generic names. For example, in the U.S. the generic name for a common pain medication is acetaminophen and in many other countries it is called paracetamol. Manufacturers select the brand names of drugs. For example, Tylenol is a common brand name for acetaminophen.
2. *Classes*: A ***drug class*** is a group of medications that have something in common (similar but not identical) and are related by their chemical structure. The drugs within the group work in the same way and they are used for the same purpose.

B. GASTROINTESTINAL DRUGS BY CLASS: Classes of drugs used in the treatment of gastrointestinal disorders are histamine2 antagonists, PPIs, laxatives, 5-HT receptor antagonists, and 5-ASAs.

1. *Histamine2 Antagonists*: ***Histamine2 Antagonists (H2-blockers)*** are medications that block histamine-induced acid secretions in the stomach. ***Histamine*** is a chemical made by the immune system in response to injuries and in allergic and inflammatory reactions. Acid secretion occurs in response to foods, caffeine, and histamines. H2 antagonists treat GERD, ulcers, and hyper secretory (the excess production of bodily secretions such as gastric acid, mucus, etc.) conditions.
2. *Proton Pump Inhibitor (PPI)*: A ***proton pump inhibitor (PPI)*** is a drug that reduces the production of acid by blocking the enzyme in the wall of the stomach that produces acid.

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3. *Laxatives*: A ***laxative*** is medicine that produces a bowel movement. Laxatives improve the ability of water in the colon to penetrate and mix with the stool. The increased water content softens the stool, making the stool easier to pass.
4. *5-HT3 Receptor Antagonists*: ***5-HT3 receptor antagonists*** are medicines that prevent and treat nausea and vomiting, especially that caused by chemotherapy, radiation therapy, or postoperatively. Cells lining the gastrointestinal tract release serotonin. This serotonin binds to certain serotonin receptors on nerves that transmit impulses to the vomiting center within the brain, which stimulate other nerves involved in the vomiting reflex. The 5-HT3 receptor antagonist prevents serotonin from binding to the 5-HT3 receptors in the small intestines thereby reducing the likelihood of nausea and vomiting.
5. *5-aminosalicylate (5-ASA)*: ***5-aminosalicylate (5-ASA)*** is a drug that reduces inflammation in the lining of the intestine. These medicines change the way cells on the lining of the intestines release certain chemicals.

C. DRUGS FOR GASTROINTESTINAL CONDITIONS: Common drugs that treat GERD and peptic ulcers are: Pepcid (famotidine), Zantac (ranitidine), Nexium (esomeprazole), Prevacid (lansoprazole), Prilosec (omeprazole). Drugs that treat GERD alone are Protonix (pantoprazole) and AcipHex (rabeprazole). Constipation is often treated with Colace (docusate). Zofran (ondansetron) treats nausea and vomiting. Phenergan (promethazine) treats nausea, vomiting, and motion sickness. Antivert (meclizine) treats only motion sickness. Asacol (mesalamine) treats ulcerative colitis and Crohn's disease. Bentyl (dicyclomine) is used to treat IBD.

D. RESPIRATORY SYSTEM DRUGS BY CLASS: Classes of drugs that are used to treat respiratory illnesses are antitussives, decongestants, antihistamines, expectorants, antivirals, corticosteroids, and LTRAs.

1. *Antitussives*: An ***antitussive*** is a cough suppressant, a medicine used to prevent or relieve a cough. Some work by soothing irritability and others work by removing congestive mucus. Antitussives either suppress the cough center in the brain or suppress the nerve receptors in the respiratory tract.
2. *Decongestants*: A ***decongestant*** is a drug used to decrease nasal congestion. The drug reduces the swelling of the nasal membranes, relieving the feeling of pressure and improving the flow of air. Shrinking the passageways also permits the sinus cavity to drain.
3. *Antihistamines*: Histamine is found in all body tissues. It causes the blood vessels to ***dilate*** (to become wider or more open). Antihistamines block the H_1 receptors in the upper respiratory tract. Antihistamines are called H_1 blockers because they prevent histamine from binding to the H_1 receptors.
4. *Expectorants*: An ***expectorant*** is a drug that loosens mucus and phlegm from the respiratory tract, causing that mucus to be expelled from the body by coughing.
5. *Antivirals*: ***Antivirals*** are drugs that inhibit viruses from reproducing inside the body. Antivirals help to fight the flu by binding to an enzyme in the virus so the infectious parts of the virus cannot be released thus preventing the virus from multiplying and spreading throughout the body.

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6. *Corticosteroids*: ***Corticosteroids*** (also known as ***steroids***) are drugs used to treat inflammation. They are synthetic versions of hormones normally produced by the adrenal glands. The ***adrenal glands*** are two small organs, located on top of each kidney, that produce hormones.
    a. Inhaled steroids reduce inflammation, swelling, and mucus production in the airways. They help to control narrowing and inflammation in the bronchial tubes.
    b. ***Short-acting beta-agonists (SABAs)*** are "rescue" medicines that provide quick relief of asthma symptoms. The airways contain beta-receptors and when these receptors are activated, the smooth muscle surrounding the airway relaxes, opening the airways.
    c. ***Long-acting beta-agonists (LABAs)*** are medications used to provide control, rather than quick relief of asthma. They are typically taken on a daily basis. LABAs activate beta-receptors to relax the muscles lining the airways and make breathing easier.
    d. ***Anticholinergics*** are drugs that reduce muscle activity by blocking the action of acetylcholine. ***Acetylcholine*** is a neurotransmitter that enable the brain to communicate with muscles. When used to treat asthma, anticholinergics cause a relaxation of the smooth muscle surrounding the airways.
7. *Leukotriene Receptor Antagonists (LTRA)*: ***Leukotriene Receptor Antagonists (LTRA)*** is a drug that prevents inflammation in airways by blocking the action of leukotrienes. ***Leukotrienes*** are a family of substances, produced by white blood cells (leukocytes), that are responsible for bronchoconstriction. Leukotrienes play a major role in causing symptoms of asthma. The release of leukotrienes causes airway constriction, increases mucus production, and causes swelling and inflammation in the lungs. LTRAs prevent leukotrienes from binding to its receptors.

E. DRUGS FOR RESPIRATORY CONDITIONS: One drug commonly used for cough and congestion is Robitussin (guaifenesin). A cough by itself may be treated with Tessalon Perle (benzonatate). Allergy symptoms may be relieved by Zyrtec (cetirizine), Xyzal (levocetirizine), Claritin (loratadine), Nasonex (mometasone), and Allegra (fexofenadine). Atarax (hydroxyzine) treats allergic itching. Colds and allergies are often treated with Benadryl (diphenhydramine) and Sudafed (pseudoephedrine). For the flu, Tamiflu (oseltamivir) may be taken. Qvar (beclomethasone), Symbicort (budesonide), Flovent (fluticasone), Ventolin (albuteral), Singulair (montelukast), and Xopenex (levalbuterol) treat asthma. Flonase (fluticasone) treats allergies and asthma. Deltasone (prednisone) treats allergies, asthma, and COPD. Advair Diskus (salmeterol) treats asthma and COPD. COPD by itself may be medicated with Spiriva (tiotropium) or Atrovent (ipratropium).

Teaching Strategy: *Many techniques can be used to help students master this objective. Use VM–B to review the drug classifications for the gastrointestinal system drugs. Use VM–C to review the drug classifications for the respiratory drugs. Have*

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students make flashcards to help learn the different classifications and their corresponding actions. Use VM–D to review the Top 200 gastrointestinal and respiratory drugs and the conditions that they treat. Have students search for the Top 200 drugs of the gastrointestinal and respiratory systems on the Quizlet website at https://www.quizlet.com. Then, have students complete the learning games, flashcards, and turn the completed test in to you. Assign LS–A.

- **Review/Summary.** Use the student learning objectives to summarize the lesson. Have students explain the content associated with each objective. Student responses can be used in determining which objectives need to be reviewed or taught from a different angle. If a textbook is being used, questions at the ends of chapters may also be included in the Review/Summary.

- **Application.** Use the included visual master(s) and lab sheet(s) to apply the information presented in the lesson.

- **Evaluation.** Evaluation should focus on student achievement of the objectives for the lesson. Various techniques can be used, such as student performance on the application activities. A sample written test is provided.

- **Answers to Sample Test:**

Part One: Matching

1. g
2. e
3. h
4. d
5. b
6. f
7. a
8. c
9. i
10. j

Part Two: Completion

1. antitussive
2. ingestion
3. expectorant
4. histamine
5. constipation
6. anticholinergics
7. bronchitis

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8. peptic ulcers
9. heartburn
10. leukotrienes

Part Three: True/False

1. F
2. F
3. T
4. T
5. T
6. F
7. T
8. T

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Sample Test

Name _____

Top 200 Drugs: Gastrointestinal and Respiratory Systems

Part One: Matching

Instructions: **Match the term with the correct definition.**

a. nausea
b. phlegm
c. elimination
d. esophagus
e. allergen
f. inflammation
g. absorption
h. asthma
i. drug
j. drug class

_____1. The movement of nutrients and water from the digestive system into the circulatory and lymphatic systems

_____2. A substance that causes the body's immune system to produce an allergic reaction

_____3. A respiratory condition in which the airways are inflamed and narrowed, making breathing difficult

_____4. The tube connecting the throat with the stomach

_____5. A thick substance secreted by the mucus membranes of the respiratory system

_____6. A physical condition in which part of the body becomes reddened, swollen, hot, and often painful

_____7. The urge to vomit

_____8. The removal of waste produced during digestion and absorption

_____9. A chemical substance (a medication or a medicine) used to treat, cure, prevent, or diagnose a disease, or to promote wellness

____10. A group of medications that have something in common (similar but not identical) and are related by their chemical structure

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Part Two: Completion

Instructions: **Provide the word or words to complete the following statements.**

1. A medicine used to prevent or relieve a cough is a/an _____.
2. The process by which food, drink, or other substances are taken into the body is _____.
3. A drug that loosens mucus and phlegm from the respiratory tract, causing that mucus to be expelled from the body by coughing is a/an _____.
4. A chemical made by the immune system in response to injuries and in allergic and inflammatory reactions is _____.
5. A condition in which the feces are hard and dry and bowel movements are infrequent or irregular is _____.
6. Drugs that reduce muscle activity by blocking the action of acetylcholine are _____.
7. An inflammation of the lining of the bronchial tubes, causing an obstruction of the airflow to and from the lungs, is called _____.
8. Sores that form on the inside of the stomach lining or the upper part of the small intestine are _____.
9. A burning feeling in the lower chest along with a sour or bitter taste in the throat and mouth is _____.
10. A family of substances, produced by white blood cells (leukocytes), that are responsible for bronchoconstriction are _____.

Part Three: True/False

Instructions: **Write *T* for true or *F* for false.**

_____1. Influenza is a mild type of viral respiratory infection.

_____2. A PPI reduces the production of acid by blocking the enzyme in the small intestine that produces acid.

_____3. Short-acting beta-agonists (SABAs) are also known as rescue medicines.

_____4. Antihistamines are called H_1 blockers because they prevent histamine from binding to the H_1 receptors.

_____5. The most prevalent form of respiratory tract infection is the common cold.

_____6. A condition in which the acidified liquid content of the stomach backs up into the esophagus is COPD.

_____7. Singulair (montelukast) is used to treat asthma.

_____8. 5-HT3 receptor antagonists are medicines that prevent and treat nausea and vomiting.

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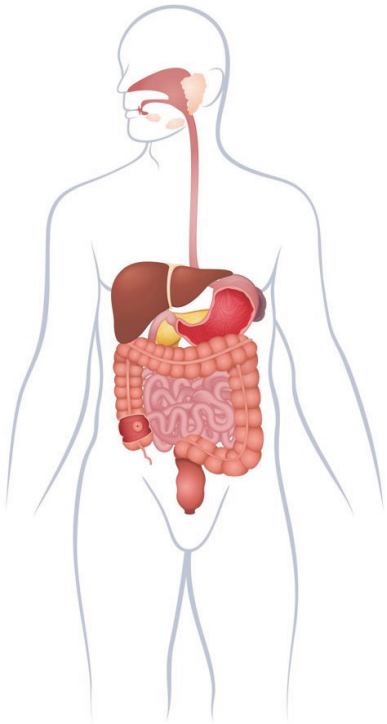
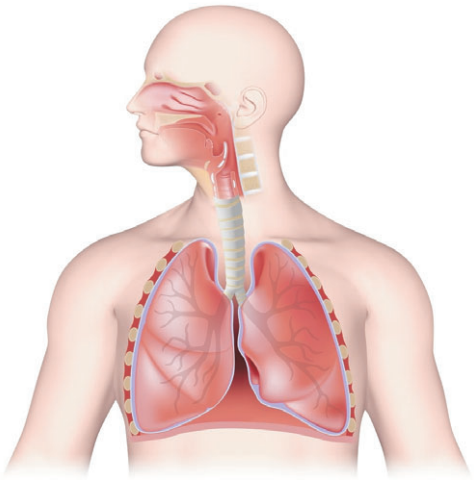
DISORDERS OF THE GASTROINTESTINAL AND RESPIRATORY SYSTEMS TREATED BY THE TOP 200 DRUGS

Gastrointestinal System	Respiratory System
Gastroesophageal Reflux Disease (GERD)	Common cold
Peptic ulcers	Allergies
Constipation	Influenza
Nausea and Vomiting	Asthma
Ulcerative Colitis	Bronchitis
Crohn's disease	Emphysema





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GASTROINTESTINAL SYSTEM DRUGS BY DRUG CLASS

Drug Class	Action
Histamine2 Antagonists	H2 antagonists bind to H_2 receptor sites thereby reducing acid secretions.
Proton Pump Inhibitors (PPIs)	PPIs reduce the production of acid by blocking the enzyme in the wall of the stomach that produces acid.
Stimulant Laxatives	Laxatives increase water content to soften the stool, thereby making the stool easier to pass.
5-HT3 Receptor Antagonists	The 5-HT3 receptor antagonist prevents serotonin from binding to the 5-HT3 receptors in the small intestines.
5-Aminosalicylates (5-ASA)	5-ASA changes the way cells on the lining of the intestines release certain chemicals.

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RESPIRATORY SYSTEM DRUGS BY DRUG CLASS

Drug Class	Action
Antitussives	Antitussives either suppress the cough center in the brain or suppress the nerves receptors in the respiratory tract.
Decongestants	Decongestants reduce/shrink swelling in nasal passageways and permit the sinus cavity to drain.
Antihistamines	Antihistamine H_1 blockers prevent histamine from binding to the H_1 receptors.
Expectorants	Expectorants break up thick mucus secretions of the lungs or bronchi so they can be easily expelled.
Antivirals	Antivirals decrease the ability of the influenza virus to reproduce; prevent virus from multiplying and spreading.
Corticosteroids	Suppress the body's immune response.
Inhaled S25teroids	Reduce inflammation, swelling, and mucus production in the airways.
Short-Acting Beta-Agonists (SABAs)	SABAs contain beta receptors; when these receptors are activated, smooth muscle surrounding the airway relaxes.
Long-Acting Beta-Agonists (LABAs)	LABAs activate beta receptors in the lungs and relax the smooth muscle and opening of the airways.
Inhaled Anticholinergics	Blocking the effects of acetylcholine leading to the relaxation of the smooth muscle surrounding the airways.
Leukotriene Receptor Antagonists (LTRAs)	LTRAs prevent leukotrienes from binding to its receptors.

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DRUGS USED TO TREAT CONDITIONS OF THE GASTROINTESTINAL AND RESPIRATORY SYSTEMS

Condition	Drug Names
GERD	Protonix, AcipHex
GERD and Peptic Ulcer	Pepcid, Zantac, Nexium, Prevacid, Prilosec
Constipation	Colace
Nausea and Vomiting	Zofran, Phenergan
Motion Sickness	Phenergan, Antivert
Ulcerative colitis and Crohn's disease	Asacol
IBD	Bentyl
Cough and Congestion	Robitussin, Tessalon, Benadryl, Sudafed
Allergy Symptoms	Zyrtec, Xyzal, Claritin, Allegra, Benadryl, Sudafed, Flonase, Nasonex, Deltasone, Atarax
Influenza	Tamiflu
Asthma	Symbicort, Flonase, Qvar, Flovent, Deltasone, Ventolin, Xopenex, Advair Disks, Singulair
COPD	Deltasone, Advair Disks, Spiriva, Atrovent

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LS–A

Name _____

Drug Pamphlet

Purpose

The purpose of this activity is to create a pamphlet that describes one gastrointestinal or respiratory system medication from this lesson.

Objectives

1. Review which of the Top 200 Drugs are used to treat disorders of the gastrointestinal and respiratory systems.
2. Conduct research to define the classification, therapeutic effects, side effects, and mechanism of action for the selected drug.
3. Participate in a class discussion of the drug pamphlet.

Materials

- lab sheet
- computer/device with word processing software and Internet and printer access

OR

- paper and colored pencils or markers

Procedure

1. Review your class notes. Choose one drug to investigate and prepare a drug information pamphlet. Ask your instructor to review and approve your choice. [NOTE: Upon approval, discuss with your instructor what additional information, if any, would be collected about the selected drug (other than that shown in Procedure 2). Add any additional information categories to Procedure 2.]

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2. Research information about the selected gastrointestinal or respiratory system drug, noting a minimum of the following facts:

    a. Trade name(s)
    b. Generic name(s)
    c. Drug classification and how the medication works
    d. Indication(s) for use
    e. Contraindications
    f. Adverse effects
    g. Dosage forms
    h. Routes of administration
    i. Recommended daily dosage
    j.
    k.
    l.

3. Conduct the research. Recognize that drugs can have beneficial and harmful effects.
4. Create an informational drug pamphlet.
5. Post/project your pamphlet in the classroom and share information about the drug with your classmates and the instructor.
6. Turn your pamphlet in and/or send your pamphlet electronically to your instructor.

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