

Objectives for Chapter 22

- Describe how tissues, organs, and organ systems are related.
- List 11 organ systems.
- Identify how organ systems work together to maintain homeostasis.
- Identify the major organs of the skeletal system
- Describe four functions of bones
- List three injuries and two diseases that affect bones and joints
- List three kinds of muscle tissue
- Describe how skeletal muscles move bones
- Compare aerobic exercise with resistance exercise
- Describe two muscular system injuries
- List four functions of skin
- Describe the two layers of skin
- Describe the structure and function of hair and nails
- Describe two kinds of damage that can affect skin

Body Organization

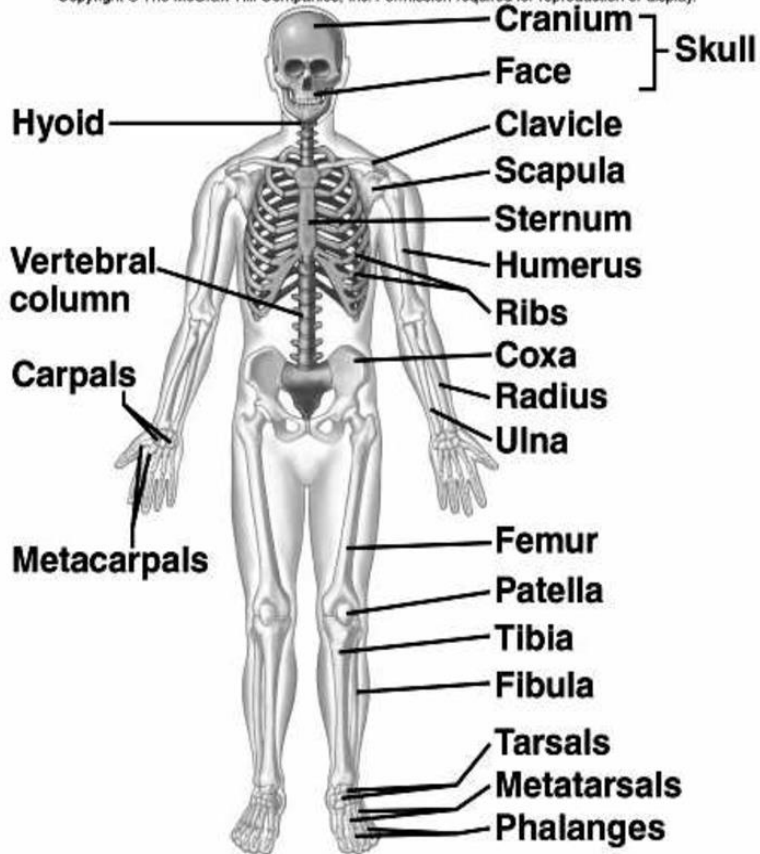
- ✎ A group of cells that work together is tissue. Tissues form organs. Organs that work together form organ systems.
- ✎ There are four kinds of tissue in the human body.
 - Epithelial- covers and protects underlying tissue
 - Nervous- sends electrical signals through the body. It is found in the brain, nerves, and sense organs.
 - Muscle- is made of cells that contract and relax to produce movement
 - Connective- joins, supports, protects, insulates, nourishes, and cushions organs. It also keeps organs from falling apart.
- ✎ There are 11 major organ systems in the human body.
- ✎ Organ systems work together to help the body maintain homeostasis.

The Skeletal System

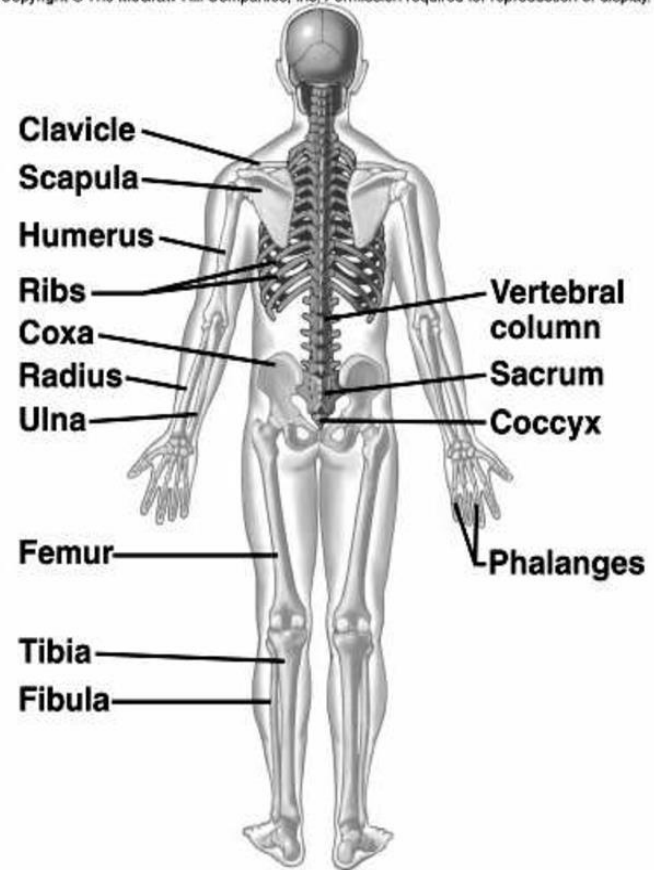
- ∞ The skeletal system includes bones, cartilage, and the connective tissue that connects the bones.
- ∞ Bones protect the body, store minerals, allow movement, and make blood cells.
- ∞ Joints are places where two or more bones meet.
- ∞ Skeletal system injuries include fractures, dislocations, and sprains. Skeletal diseases include osteoporosis and arthritis.

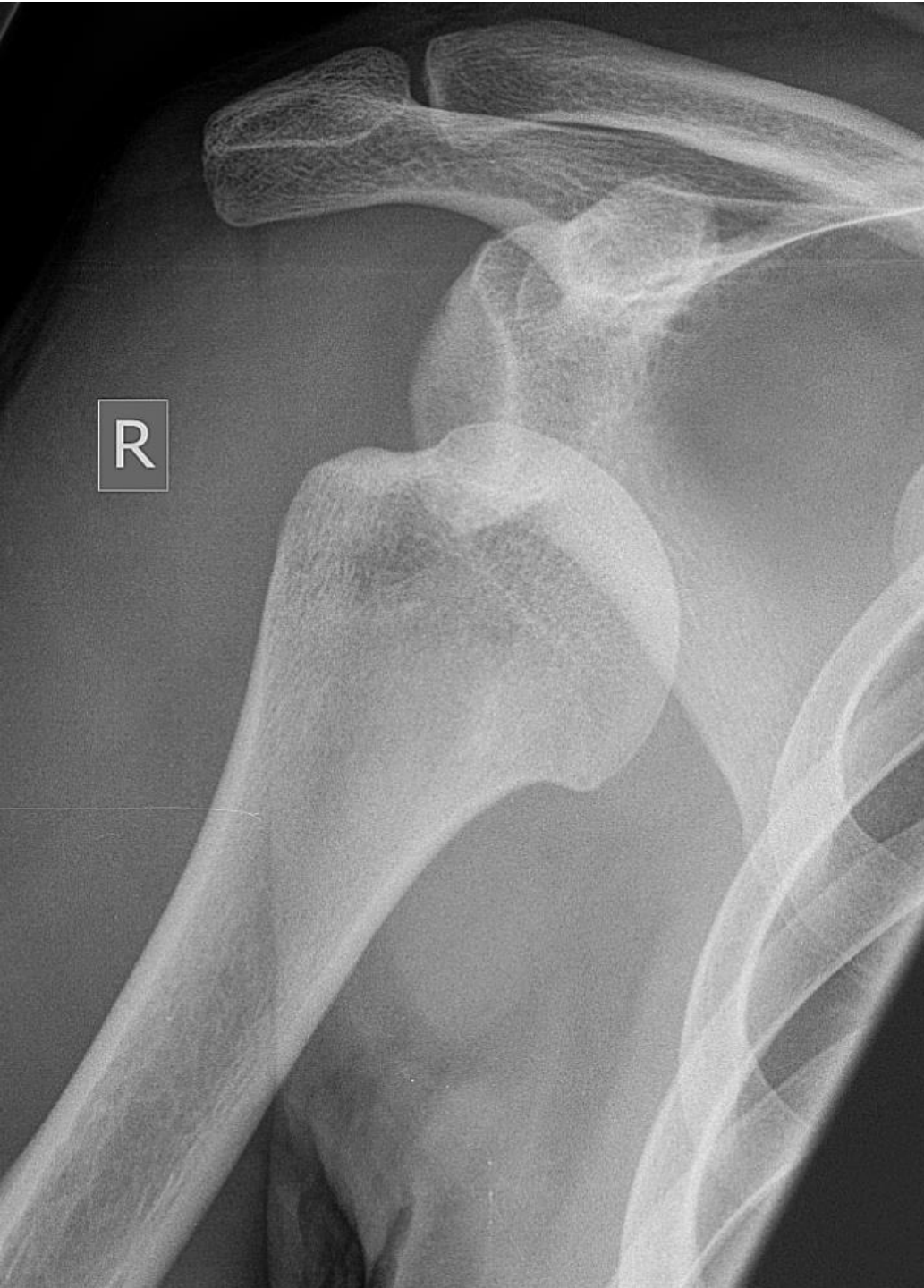
The Skeletal System

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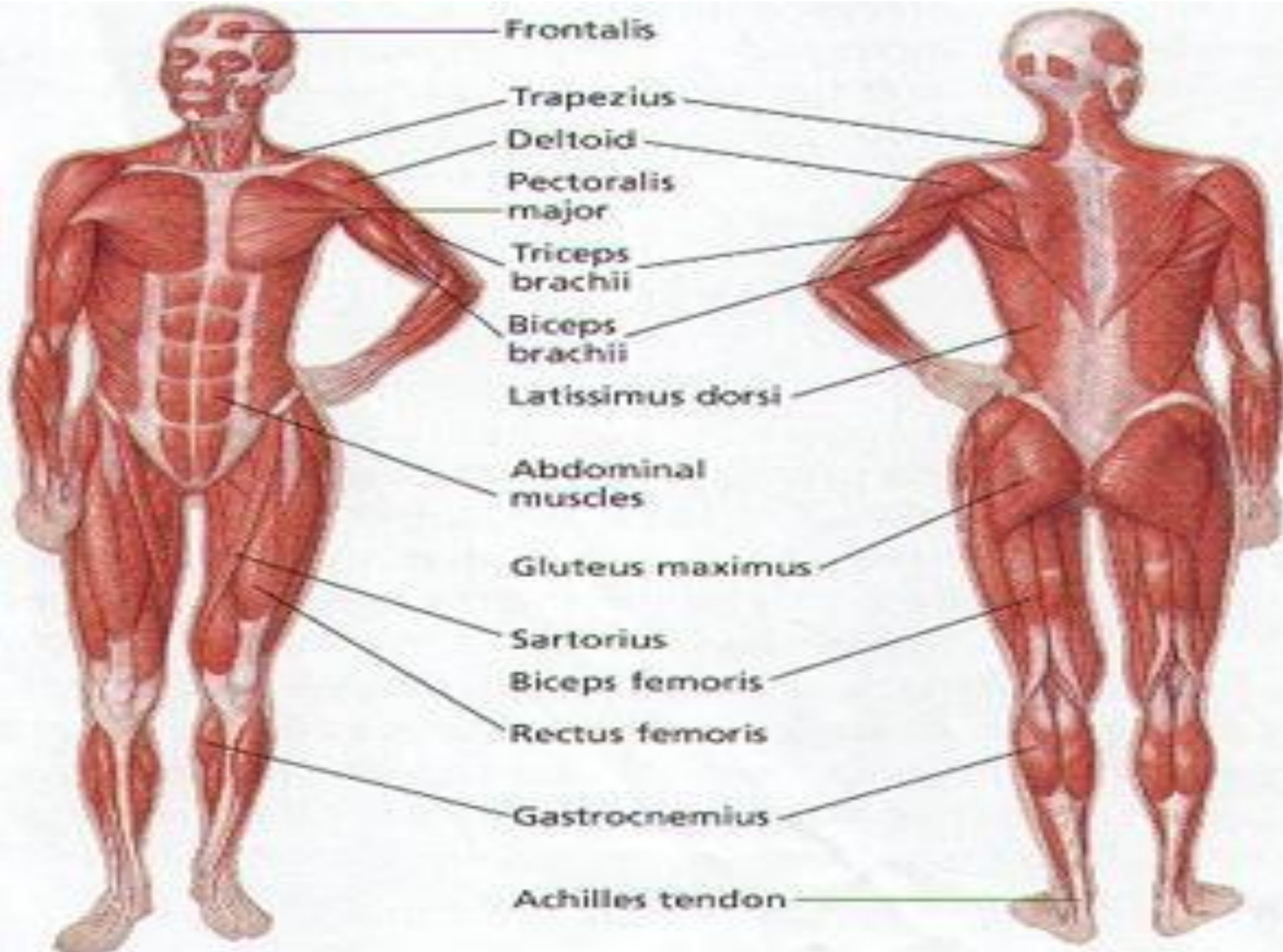
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The Muscular System

- ∞ The three kinds of muscle tissue are smooth muscle, cardiac muscle, and skeletal muscle.
- ∞ Skeletal muscles work in pairs. Skeletal muscles contract to move bones.
- ∞ Resistance exercise improves muscle strength. Aerobic exercise improves heart strength and muscle endurance.
- ∞ Strains are injuries that affect muscles and tendons. Tendinitis affects tendons.



Frontalis

Trapezius

Deltoid

Pectoralis major

Triceps brachii

Biceps brachii

Latissimus dorsi

Abdominal muscles

Gluteus maximus

Sartorius

Biceps femoris

Rectus femoris

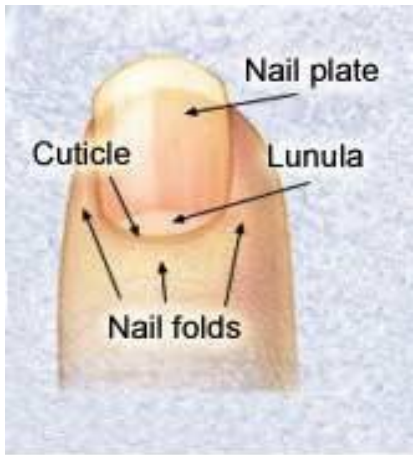
Gastrocnemius

Achilles tendon

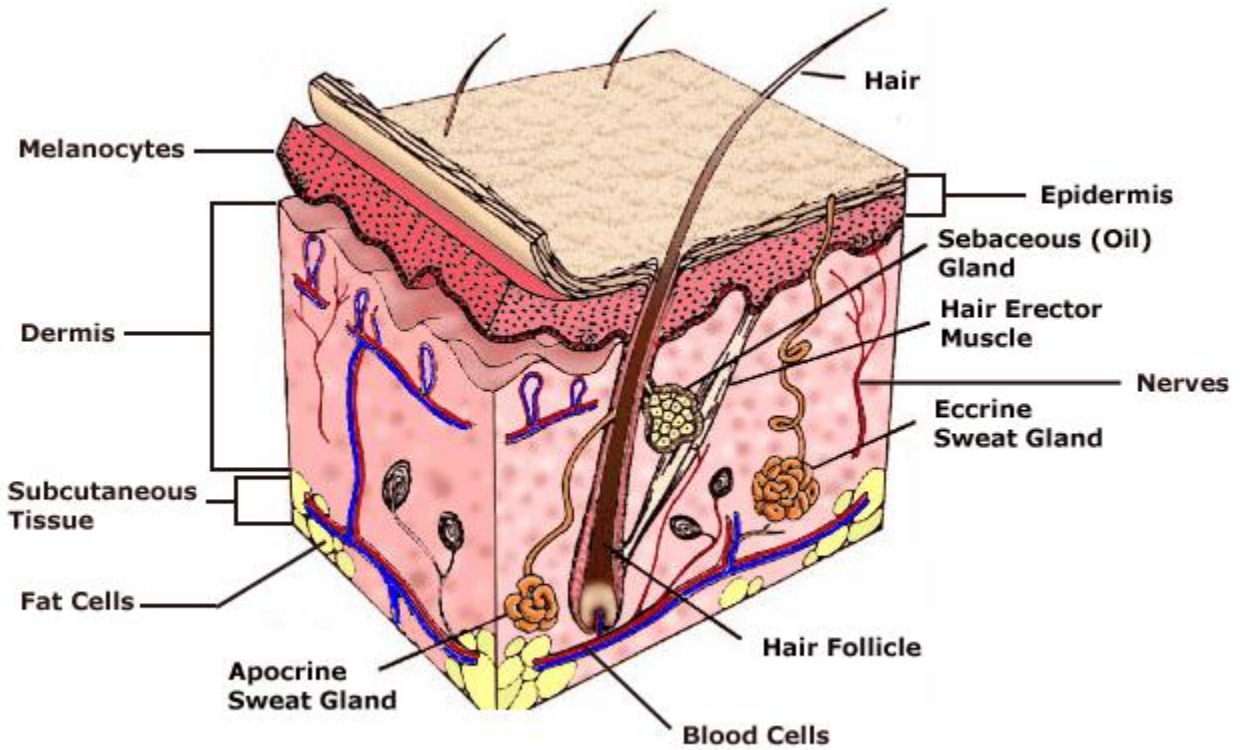
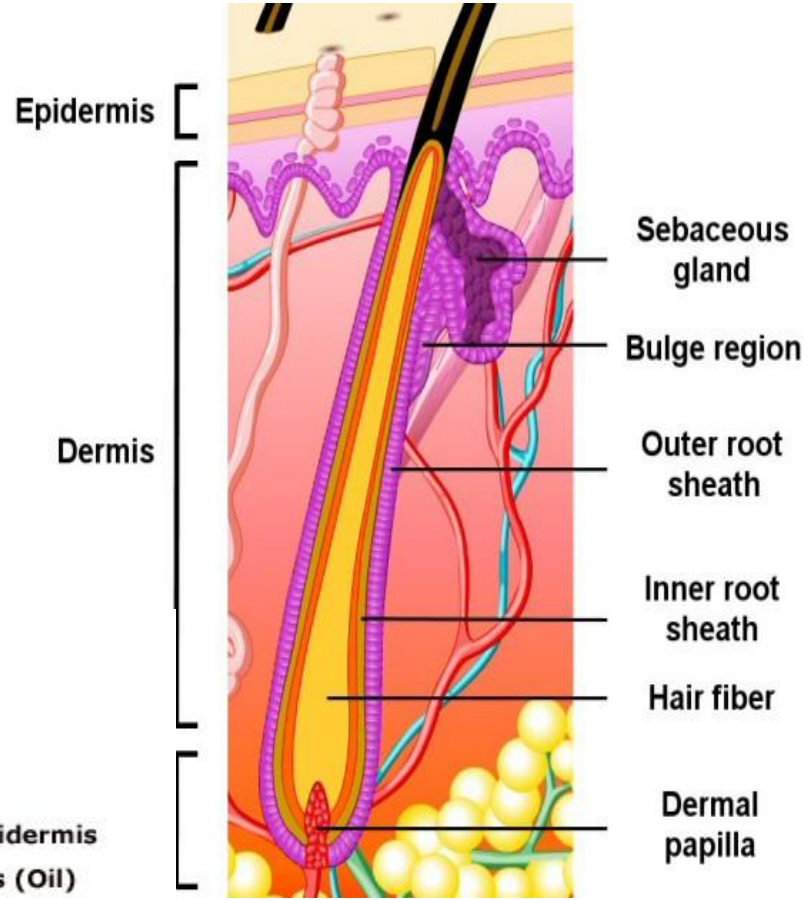


The Integumentary System

- ☞ Skin keeps water in the body, keeps foreign particles out of the body, lets people feel things around them, regulates temperature, and removes wastes.
- ☞ The two layers of skin are the epidermis and the dermis.
- ☞ Hair grows from hair follicles. Nails grow from nail roots.
- ☞ Skin may develop skin cancer. Acne may develop if skin produces too much oil.



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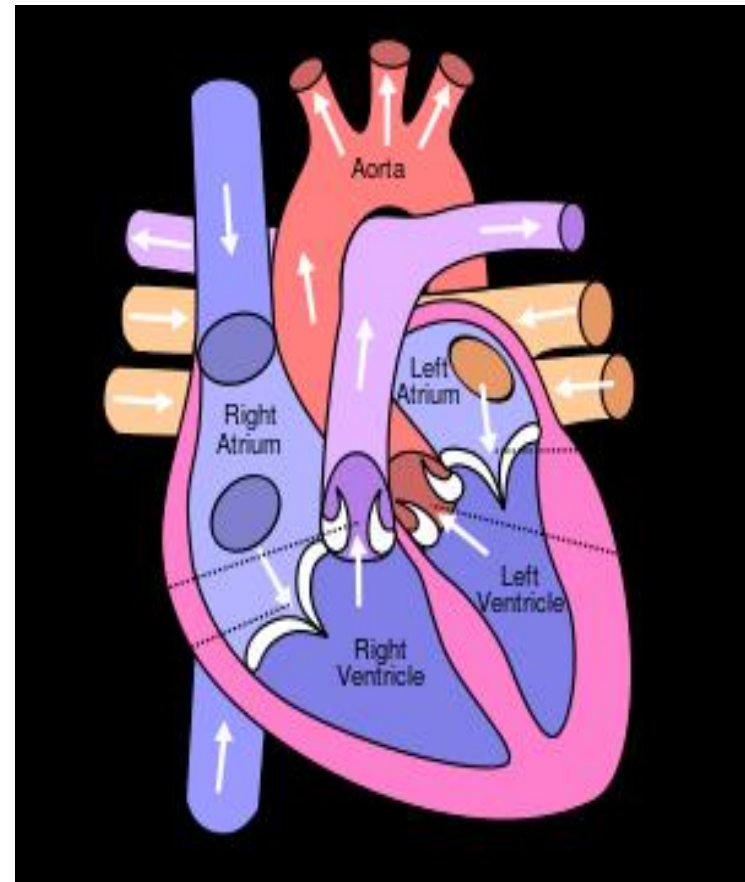
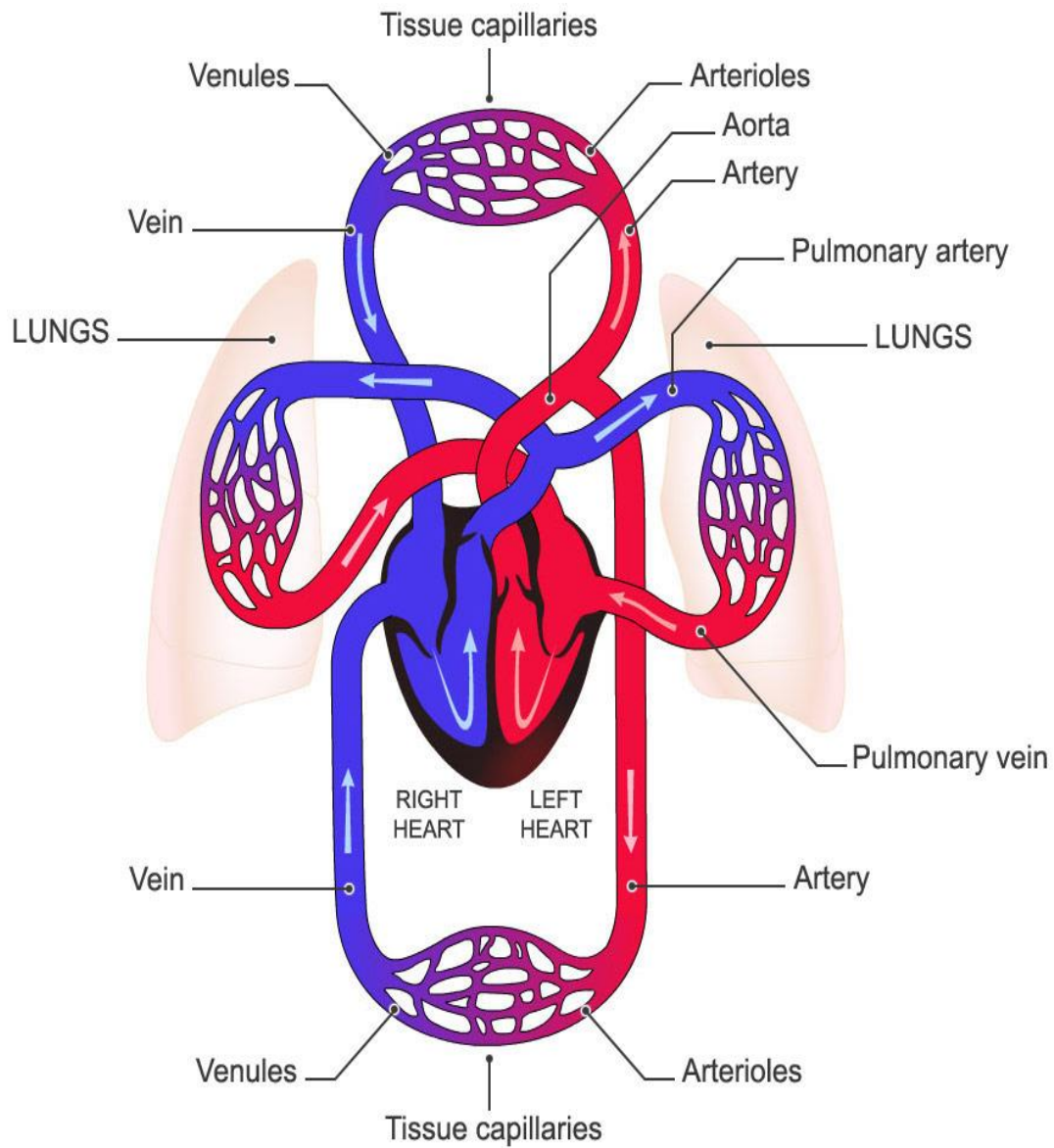


Objectives for Chapter 23

- ☞ List five main parts of the cardiovascular system, and describe their functions.
- ☞ Describe the two types of circulation of blood in the body.
- ☞ List four cardiovascular problems.
- ☞ Describe the relationship between the lymphatic system and the cardiovascular system.
- ☞ Identify six parts of the lymphatic system, and describe their functions.
- ☞ Describe the parts of the respiratory system and their functions.
- ☞ Explain how breathing happens.
- ☞ Discuss the relationship between the respiratory system and the cardiovascular system.
- ☞ Identify two respiratory disorders.

The Cardiovascular System

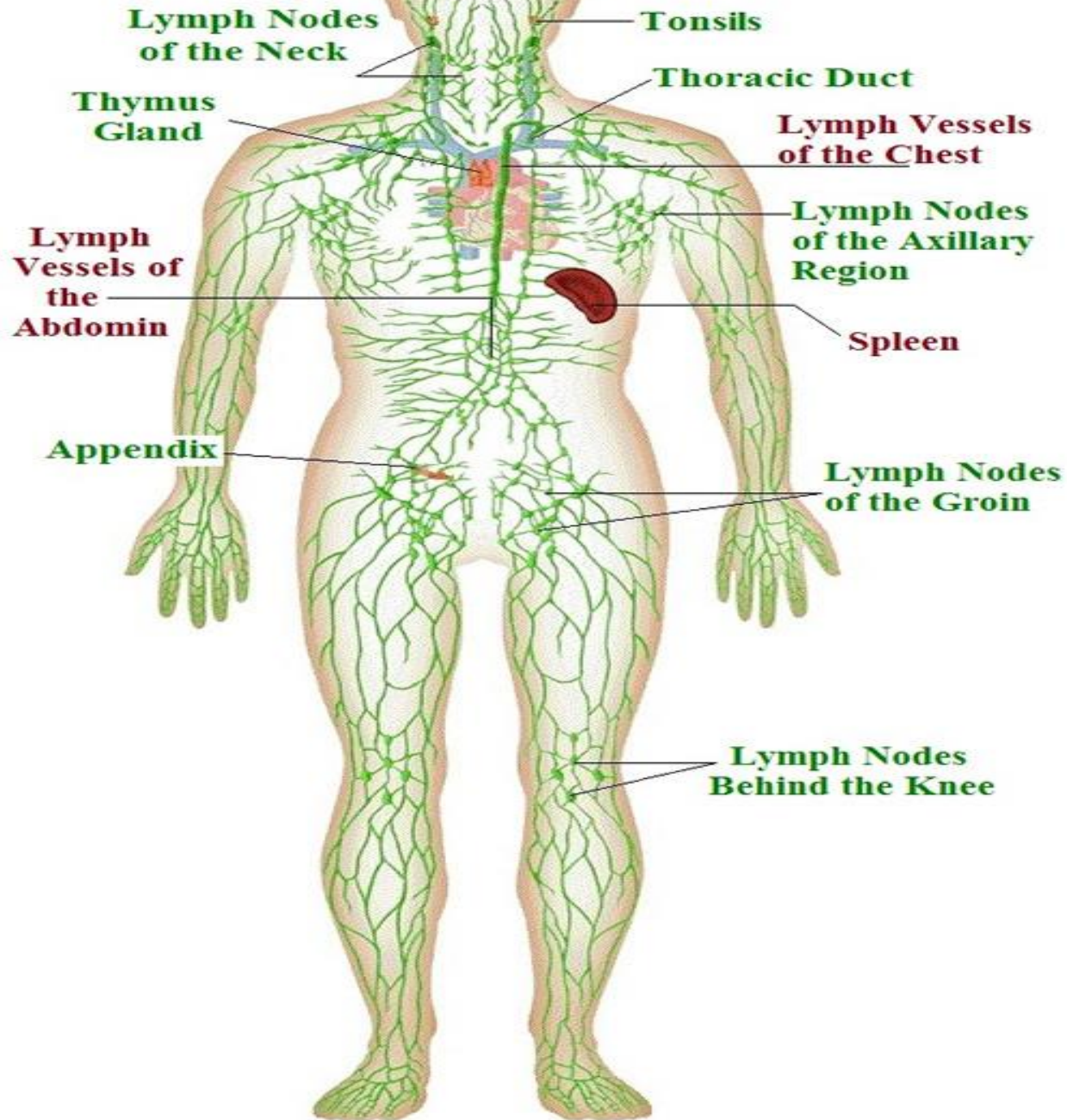
- ✎ The cardiovascular system is made up of the heart, three types of blood vessels, and blood.
- ✎ The three types of blood vessels are arteries, veins, and capillaries.
- ✎ Oxygen-poor blood flows from the heart through the lungs, where it picks up oxygen.
- ✎ Oxygen-rich blood flows from the heart to the rest of the body.
- ✎ Cardiovascular problems include atherosclerosis, hypertension, heart attacks, and strokes.



The Lymphatic System

- ∞ The lymphatic system collects fluid from between the cells and returns it to the blood.
- ∞ The lymphatic system contains cells that help the body fight disease.
- ∞ The thymus, spleen, and tonsils contain lymphocytes that help fight pathogens.

The Lymph & Immune System



The Respiratory System

- ✎ Air travels to the lungs through the nose or mouth, pharynx, larynx, and bronchi.
- ✎ In the lungs, the bronchi branch into bronchioles which branch into alveoli.
- ✎ Breathing involves lungs, muscles in the rib cage, and the diaphragm.
- ✎ Oxygen enters the blood through the alveoli in the lungs. Carbon Dioxide leaves the blood and is exhaled.
- ✎ Respiratory disorders include asthma, SARS, and emphysema.

Nasal Cavity

Pharynx

Larynx

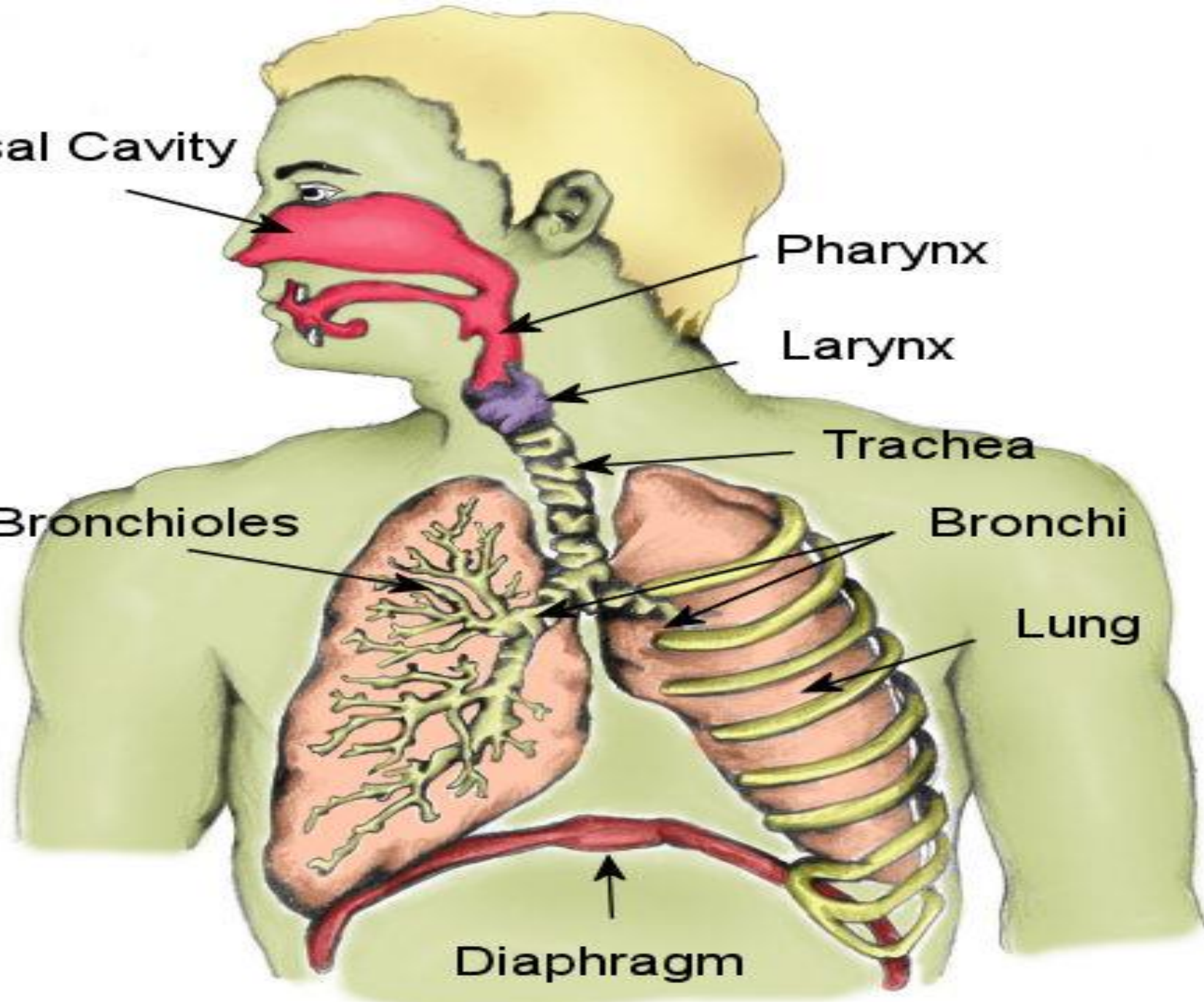
Trachea

Bronchioles

Bronchi

Lung

Diaphragm

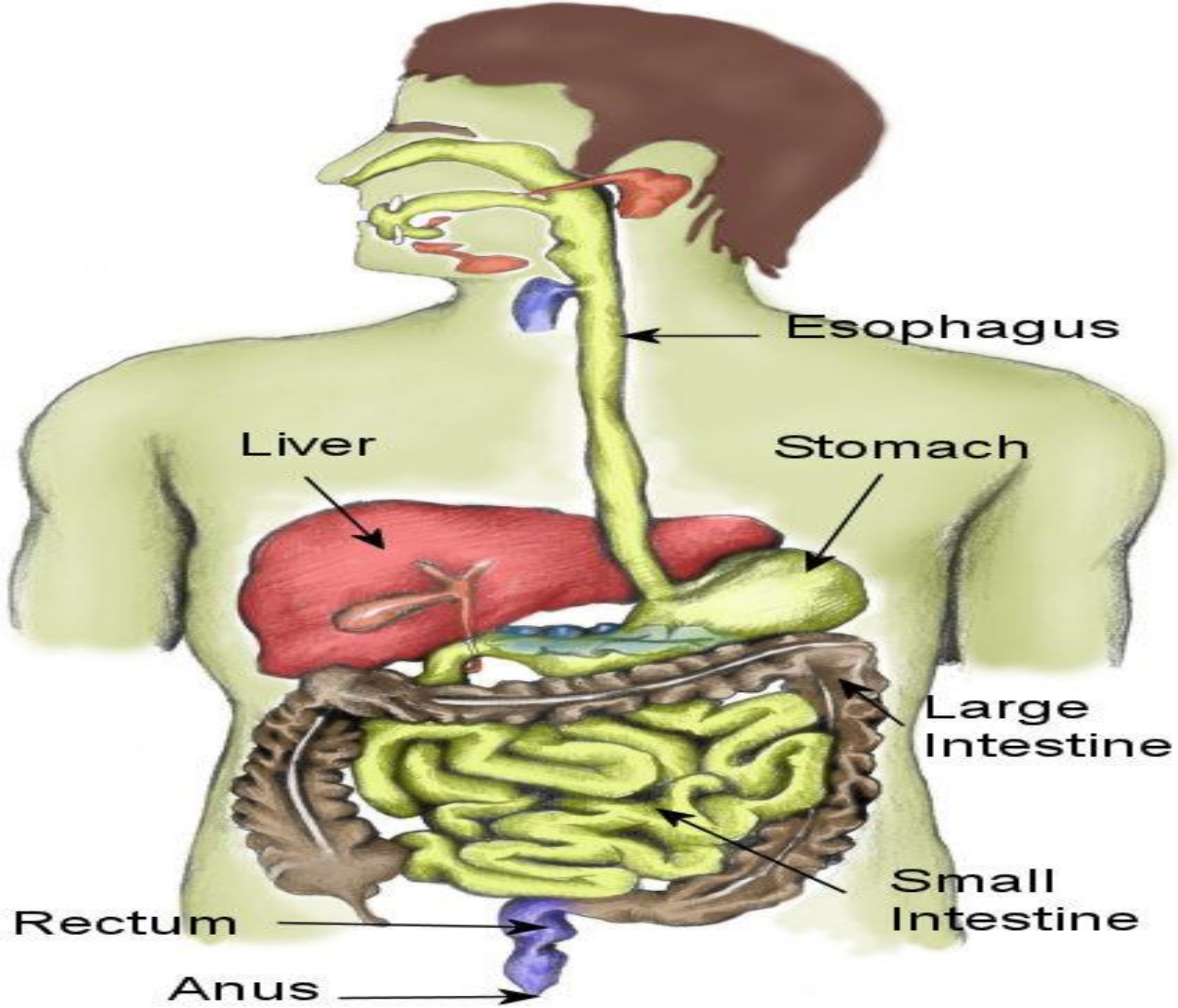


Objectives for Chapter 24

- ☞ Compare mechanical digestion with chemical digestion.
- ☞ Describe the parts and functions of the digestive system.
- ☞ Describe the parts and functions of the urinary system.
- ☞ Explain how the kidneys filter blood.
- ☞ Describe three disorders of the urinary system.

The Digestive System

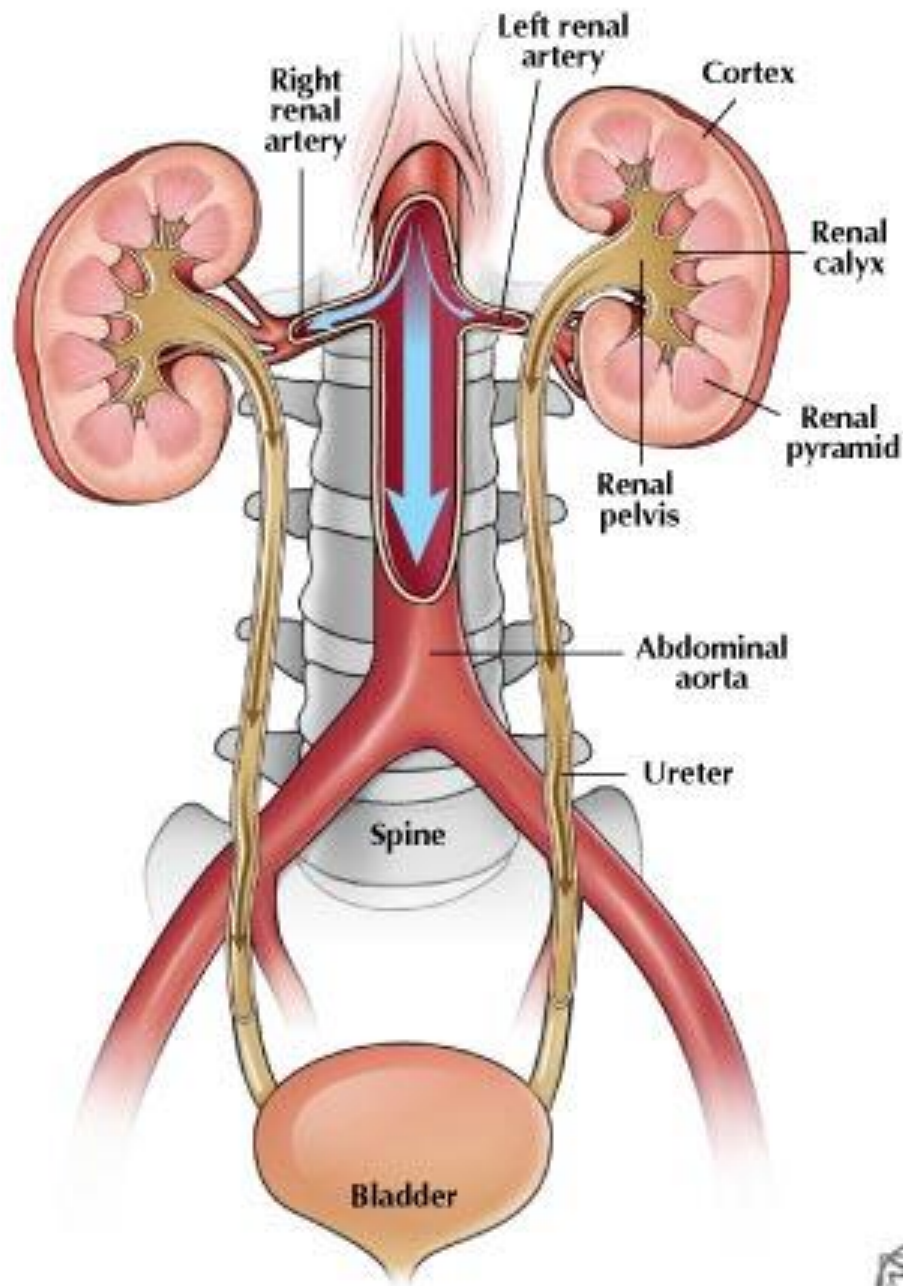
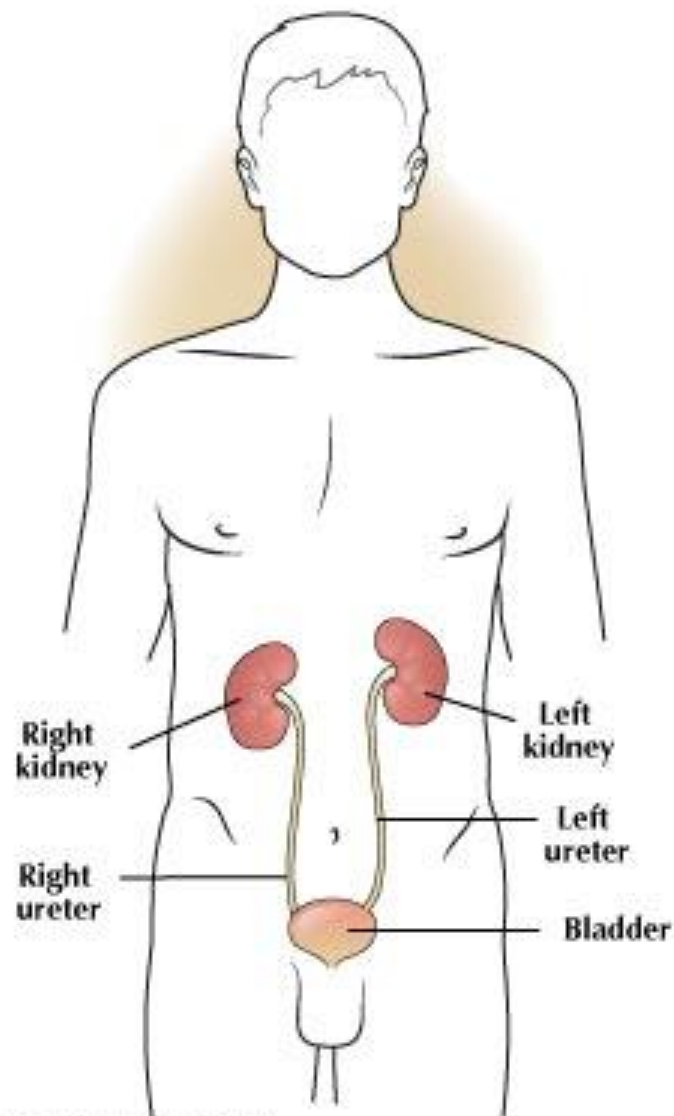
- ☞ Your digestive system is a group of organs that work together to digest food so that the nutrients from food can be used by the body.
- ☞ The breaking and mashing of food is called mechanical digestion. Chemical digestion is the process that breaks large food molecules into simpler molecules.
- ☞ The stomach mixes food with acid and enzymes that break down nutrients. The mixture is called chyme.
- ☞ In the small intestine, pancreatic fluid and bile are mixed with chyme.
- ☞ From the small intestines, nutrients enter the bloodstream and are circulated to the body's cells.
- ☞ The liver makes bile, stores nutrients, and breaks down toxins.
- ☞ The large intestine absorbs water, changing liquid waste into semisolid stool, or feces.



The Urinary System

- ✎ The urinary system removes liquid waste as urine. The filtering structures in the kidney are called nephrons.
- ✎ Most of the water in the blood is returned to the bloodstream. Urine passes through the ureter, into the bladder, and out of the body through the urethra.
- ✎ Disorders of the urinary system include infections, kidney stones, and kidney disease.

URINARY SYSTEM ANATOMY



In place of a summary, describe how body systems interact with each other.