CHAPTER 27

LESSON 1

Organization of the Human Body

READING TOOL **Main Idea and Details** As you read your textbook, identify the main ideas and details or evidence that support the main ideas. Use the lesson headings to organize the main ideas and details. Record your work in the table. Two examples are entered for you.

Heading	Main Idea	Details/Evidence
Organization of the Human Body		
Organization of the Body • Cells • Tissues • Organs • Organ Systems	The levels of organization in the human body are cells, tissues, organs, and organ systems.	
Homeostasis		
Feedback Inhibition • A Nonliving Example • A Living Example		Body temperature is regulated by feedback inhibition. If the body gets too hot, it will sweat to bring the temperature back down.
The Liver and Homeostasis		

Lesson Summary

As you read, circle the answers to each Key Question. Underline any words you do not understand.

Organization of the Body

KEY QUESTION *How is the human body organized?*

The levels of organization in the body include cells, tissues, organs, and organ systems. At each level of organization, these parts of the body work together to carry out the major body functions.

Cells A cell is the basic unit of structure and function in living things. Individual cells in multicellular organisms tend to be specialized. Specialized cells, such as bone cells, blood cells, and muscle cells, are uniquely suited to a specific function.

Tissues A group of cells that perform a single function is called a tissue. There are four basic types of tissues in the human body.

Epithelial Tissue The tissue that lines the interior and exterior body surfaces is called **epithelial tissue**. Your skin and the lining of your stomach are both examples of epithelial tissue.

Connective Tissue A type of tissue that provides support for the body and connects its parts is **connective tissue**. This type of tissue includes fat cells, bone cells, blood cells, cartilage, and ligaments.

Nervous Tissue Nerve impulses are transmitted throughout the body by **nervous tissue**. Neurons, the cells that carry these impulses, are bundled together to form a nerve.

Muscle Tissue Movements of the body are possible because of **muscle tissue**. Some muscles are responsible for the movements you control, while others are responsible for movements you cannot control.

Organs A group of different types of tissues that work together to perform a single function or several related functions is called an organ.

Organ Systems An organ system is a group of organs that perform closely related functions. For example, the brain and spinal cord are organs of the nervous system. The organ systems interact to maintain homeostasis in the body.

BUILD Vocabulary

epithelial tissue type of tissue that lines the interior and exterior body surfaces

connective tissue type of tissue that provides support for the body and connects its parts

nervous tissue type of tissue that transmits nerve impulses throughout the body

muscle tissue type of tissue that makes movements of the body possible

homeostasis relatively constant internal physical and chemical conditions that organisms maintain

feedback inhibition process in which a stimulus produces a response that opposes the original stimulus; also called negative feedback

Root Words The root word *stasis* means "a state of balance or equilibrium." Organisms must maintain a state of equilibrium, or homeostasis, in order to stay alive.

☑ **Give an example of one way that the human body works to maintain homeostasis, and describe what would happen if homeostasis were not maintained.**

Homeostasis

KEY QUESTION *What is homeostasis?*

Your body works constantly to maintain a controlled, stable internal environment. This process is called **homeostasis**, which means "keeping things the same." Homeostasis describes the relatively constant internal conditions that organisms maintain despite changes in internal and external environments.

Feedback Inhibition The systems of the body work to keep internal conditions within a certain range. Feedback inhibition is one way the body maintains homeostasis and prevents conditions from going too far one way or the other.

A Nonliving Example One way to understand homeostasis is to look at a nonliving system that keeps conditions within a certain range, like a home heating system.

Homeostasis is controlled by feedback inhibition. **Feedback inhibition**, or negative feedback, is the process in which a stimulus produces a response that opposes the original stimulus. Systems controlled by feedback inhibition are generally very stable.

READING TOOL

Make Connections The liver plays a key role in maintaining homeostasis in the human body. It maintains glucose levels when blood glucose gets too high or too low. ☑ **Describe a second way in which the liver promotes homeostasis.**

_____

_____

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_____

A Living Example The body regulates temperature by a mechanism that is remarkably similar to that of a home heating system. A part of the brain called the hypothalamus contains nerve cells that monitor body temperature.

If the nerve cells sense that the core temperature has dropped much below 37°C, the hypothalamus produces chemicals that signal cells throughout the body to speed up their activities. Heat produced by this increase in activity causes a rise in body temperature, which is detected by nerve cells in the hypothalamus. If body temperature rises too far above 37°C, the hypothalamus slows down cellular activities to reduce heat production.

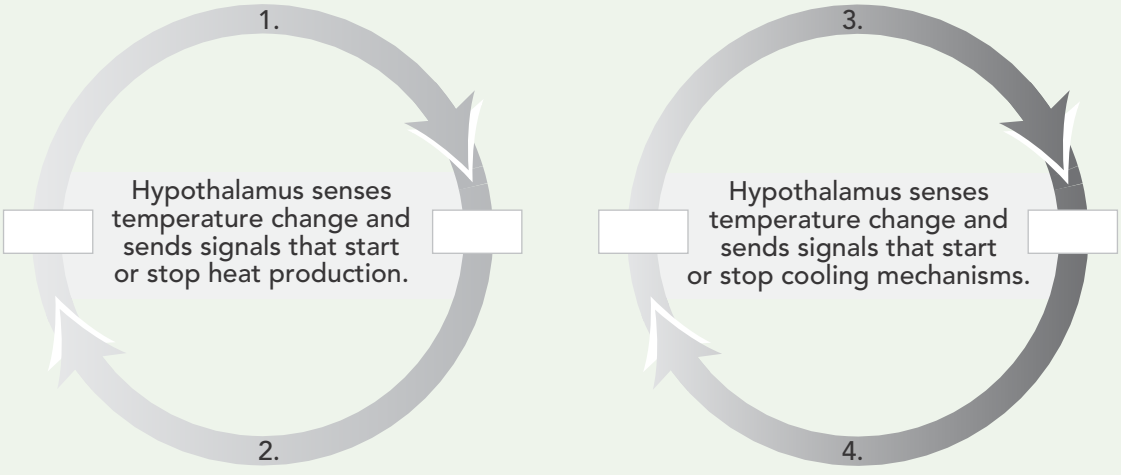
The Liver and Homeostasis

The liver is one of the body's most important organs for homeostasis. When proteins are broken down for energy, ammonia, a toxic byproduct, is produced. The liver converts ammonia to urea, which is much less toxic. The liver also converts many dangerous substances, including some drugs, into compounds that can be removed from the body safely.

One of the liver's most important roles involves regulating the level of glucose. By taking glucose out of the blood, the liver keeps the level of glucose from rising too much. As the body uses glucose for energy, the liver releases stored glucose to keep the level of the sugar from dropping too low.

Visual Reading Tool: Body Temperature Control

In the human body, temperature is controlled through various feedback inhibition mechanisms. In each of the diagrams below, fill in the words START and STOP in the appropriate boxes. Then complete the sentences below so that each numbered sentence correctly describes its corresponding number in the diagram.



1. _____ environment causes body temperature to _____.

2. Body temperature _____.

3. _____ environment and exercise cause body temperature to _____.

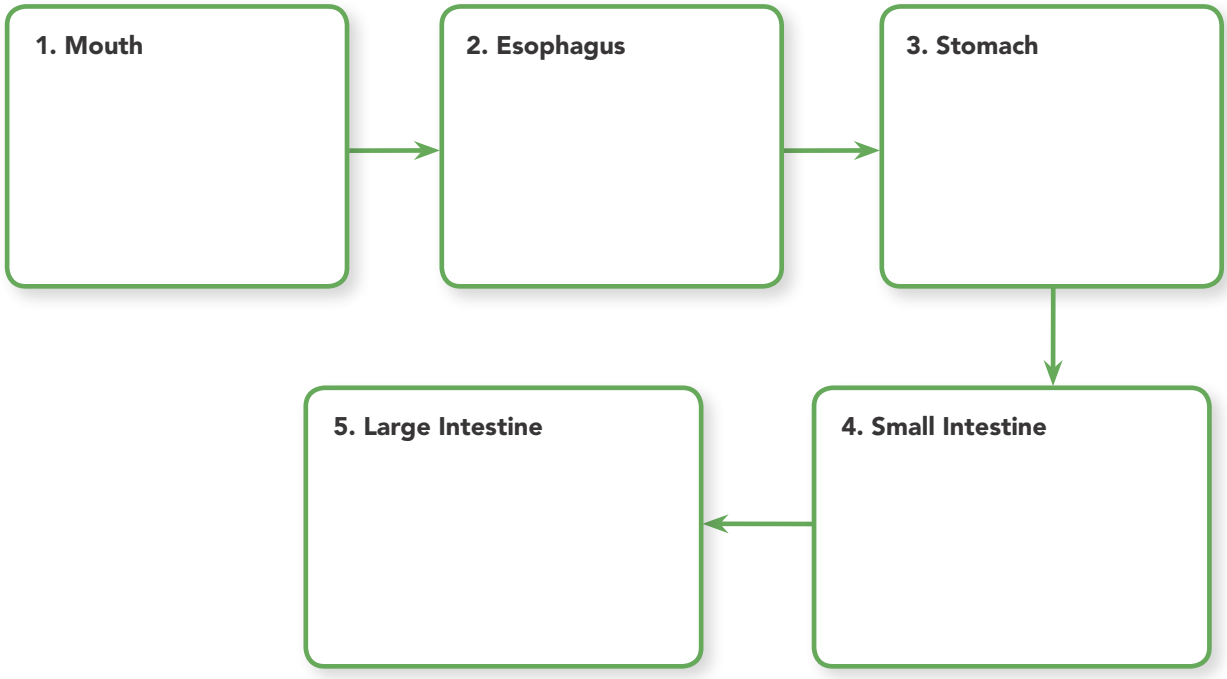
4. Body temperature _____.

CHAPTER 27

LESSON 2

Human Systems I

READING TOOL **Sequence of Events** As you read your textbook, identify the sequence of events in which food is digested. Fill in the flowchart with details about the events that involve each main structure associated with digestion.



Lesson Summary

The Digestive System

KEY QUESTION *What are the structures and functions of the digestive system, excretory system, circulatory system, lymphatic system, and respiratory system?*

As you read, circle the answers to the Key Question. Underline any words you do not understand.

The digestive system converts food into small molecules that can be used by the cells of the body.

Digestion Food in the digestive system is broken down by mechanical and chemical digestion. Mechanical digestion is the physical breakdown of large pieces of food into smaller pieces by the teeth and stomach. During chemical digestion in the mouth, stomach, and small intestine, enzymes break down food into molecules that can be absorbed.

Absorption From the Small Intestine The small intestine's folded surface provides a large surface area for absorption. Its fingerlike projections, called villi, are covered with tiny projections known as microvilli, which absorb the nutrients.

Absorption and Elimination The primary function of the large intestine is to remove water from the material that is left. The concentrated waste material, called feces, forms after most of the water has been removed. Feces passes into the rectum and is eliminated from the body through the anus.

READING TOOL

Connect to Visuals

Nephrons are the functional unit of the kidneys. View Figure 27-8 to examine the complex structure that filters, reabsorbs, and excretes. ☑ **What substances get reabsorbed by the nephrons and why?**

The Excretory System

The process by which metabolic wastes are eliminated is called excretion. The excretory system includes the skin, lungs, liver, and kidneys.

Skin The skin removes excess water, salts, and a small amount of urea in sweat.

Lungs The blood transports carbon dioxide, a waste product of cellular respiration, from the body cells to the lungs.

Liver One of the liver's principal activities is to convert dangerous nitrogen-based wastes into urea. Urea is then transported through the blood to the kidneys for elimination from the body.

Kidneys The kidneys remove excess water, urea, and metabolic wastes from the blood. The kidneys produce and excrete a waste product known as urine.

The Circulatory System

The circulatory system transports oxygen, nutrients, and other substances throughout the body, and it removes wastes from tissues.

Circulation Blood is pumped through the body by the heart. The right side of the heart pumps oxygen-poor blood from the heart to the lungs. Carbon dioxide diffuses from the blood, and oxygen is absorbed into the blood. Oxygen-rich blood then flows to the left side of the heart. The left side of the heart pumps oxygen-rich blood to the rest of the body. Cells absorb the oxygen that they need and load the blood with carbon dioxide by the time it returns to the heart.

Arteries Large vessels, or arteries, carry blood away from the heart to the tissues of the body.

Capillaries The smallest blood vessels are the capillaries. Their thin walls allow oxygen and nutrients to diffuse from blood into tissues and allow carbon dioxide and other waste products to move from tissues into blood.

Veins After blood passes through the capillaries, it returns to the heart through veins. Many veins contain valves, which ensure that blood flows in one direction through these vessels toward the heart.

Blood Components of blood help regulate body temperature, fight infections, and produce clots to minimize the loss of body fluids from wounds. About 55 percent of total blood volume is plasma. Plasma is made up of water, dissolved gases, salts, nutrients, enzymes, plasma proteins, cholesterol, and other compounds. Plasma proteins transport substances and are necessary for blood to clot.

The most numerous cells in blood are red blood cells. The main function of red blood cells is to transport oxygen. White blood cells guard against infection, fight parasites, and attack bacteria. Platelets and plasma proteins cause blood to clot.

The Lymphatic System

As blood circulates, some blood cells and plasma leak out through the capillary walls. Most of this fluid, known as lymph, is reabsorbed into capillaries, but the rest goes into the lymphatic system. The lymphatic system is a network of vessels, nodes, and organs that collects the lymph that leaves capillaries, "screens" it for microorganisms, and returns it to the circulatory system.

Role in Circulation Lymph collects in a system of capillaries that slowly conducts it into larger lymph vessels. These ducts return lymph to the blood through openings in veins just below the shoulders.

Role in Immunity Hundreds of small lymph nodes are scattered along lymph vessels throughout the body. Lymph nodes act as filters, trapping microorganisms, stray cancer cells, and debris. White blood cells inside lymph nodes destroy this cellular "trash."

Role in Nutrient Absorption A system of lymph vessels runs alongside the intestines. The vessels pick up fats and fat-soluble vitamins from the digestive tract and transport these nutrients into the bloodstream.

The Respiratory System

The respiratory system picks up oxygen from the air as we inhale and releases carbon dioxide as we exhale. The respiratory system consists of the nose, pharynx, larynx, trachea, bronchi, and lungs.

READING TOOL

Compare and Contrast As you read about the lymphatic system, create a Venn diagram or chart comparing and contrasting the lymphatic system and the circulatory system. ☑ **Describe how the function of the lymphatic system is related to the function of the circulatory system.**

READING TOOL

Make Connections In the previous lesson, you learned that all living organisms must maintain homeostasis to stay alive. As you read about the body systems, note at least one way in which each body system supports homeostasis.

☑ **What is one way the respiratory system supports homeostasis?**

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Air Flow Air moves from the nose to the pharynx, or throat, and then into the trachea, or windpipe. Between the pharynx and the trachea is the larynx, which contains the vocal cords. From the trachea, air moves into two large tubes called bronchi leading to the lungs. These tubes divide into smaller bronchi, and then into even smaller bronchioles. The bronchioles lead to several hundred million tiny air sacs called alveoli. A delicate network of capillaries surrounds each alveolus for gas exchange.

Gas Exchange and Transport When you inhale, a muscle called the diaphragm contracts and flattens. Atmospheric pressure fills the lungs as air rushes into the breathing passages. As air enters the alveoli, oxygen diffuses across thin capillary walls into the blood. Meanwhile, carbon dioxide diffuses in the opposite direction. These processes are reversed in the lungs before the carbon dioxide is exhaled.

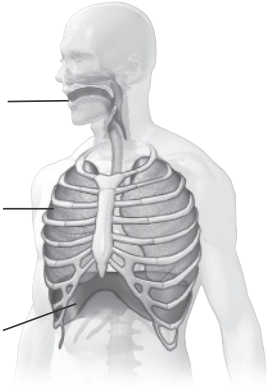
Breathing The force that drives air into the lungs comes from ordinary air pressure, the diaphragm, and muscles associated with the ribs and neck. Movements of the diaphragm and rib cage change air pressure in the chest cavity during inhalation and exhalation.

Breathing and Homeostasis Sensory neurons gather information about carbon dioxide levels in the body and send the information to the breathing center in the part of the brain stem called the medulla oblongata. When stimulated, the breathing center sends nerve impulses that cause the diaphragm and chest muscles to contract, bringing air into the lungs.

Visual Reading Tool: Breathing

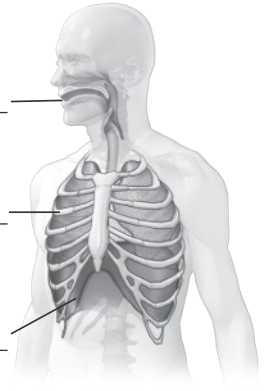
Fill in the blanks in the diagram below to accurately describe the events of inhalation and exhalation. Draw arrows on the diagram that show the direction of movement for air, the rib cage, and the diaphragm during each process.

1. Air _____
2. Rib cage _____
3. Diaphragm _____



Inhalation

4. Air _____
5. Rib cage _____
6. Diaphragm _____



Exhalation

CHAPTER 27

LESSON 3

Human Systems II

READING TOOL **Connect to Visuals** As you read your textbook, examine the visuals that accompany the text. For each organ system listed, select one of the visual aids and record details you learn from the visual aid in the table below. An example has been completed for you.

Body System	Visual	Details
Nervous System	The Nervous System	The nervous system is made up of the central nervous system and the peripheral nervous system.
Skeletal System		
Muscular System		
Endocrine System		
Male Reproductive System		
Female Reproductive System		

Lesson Summary

The Nervous System

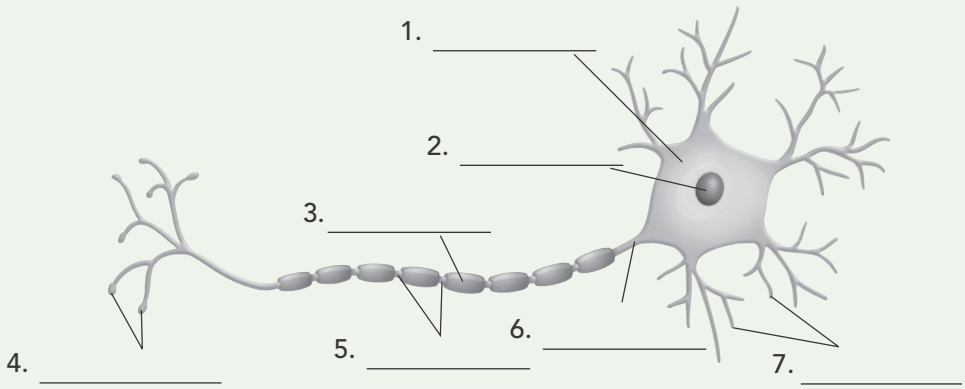
KEY QUESTION *What are the structures and functions of the nervous system, skeletal system, muscular system, integumentary system, endocrine system, and male and female reproductive systems?*

As you read, circle the answers to the Key Question. Underline any words you do not understand.

The nervous system collects information about the internal and external environment, processes that information, and responds to it. All of these messages are carried by electrical signals, called impulses, through nerve cells called neurons.

Visual Reading Tool: Neurons

The basic unit of the nervous system is the neuron, or nerve cell. Label the parts of a nerve cell in the diagram below.



READING TOOL

Cause and Effect The peripheral nervous system sends messages in two different ways. An individual can control his or her somatic nervous system, but cannot control his or her autonomic nervous system. ☑ **Give an example of how your autonomic nervous system is working right now.**

Neurons Neurons can be classified into three types: sensory neurons, motor neurons, and interneurons. A neuron has a cell body, multiple dendrites, and an axon.

The Nerve Impulse Neurons carry information by creating small electrical currents. When a neuron receives a large enough stimulus, this neuron changes suddenly, producing a nerve impulse called an action potential.

The Central Nervous System The central nervous system includes the brain and spinal cord. Sensations from various body areas are "felt" by specific brain regions. Commands to muscles originate in other brain areas. The spinal cord links the brain to the rest of the body.

The Peripheral Nervous System The sensory division of the peripheral nervous system gathers information and transmits impulses from sense organs to the central nervous system. The motor division transmits impulses from the central nervous system to the muscles and glands.

Somatic Nervous System The somatic nervous system regulates activities such as the movement of skeletal muscles.

Autonomic Nervous System The autonomic nervous system regulates activities that are not under conscious control like heart rate and digestion.

The Skeletal System

The skeleton supports the body, protects internal organs, assists in movement, stores minerals, and is a site of blood cell formation.

Bones Bones are surrounded by tough connective tissue called periosteum. Beneath the periosteum is a thick layer of compact bone with nerves and blood vessels. A less dense tissue known as spongy bone may be found under the compact bone. Inside many bones are cavities containing bone marrow.

Joints A place where two or more bones meet each other is called a joint. Joints contain connective tissue that holds bones together and permits bones to move without damaging each other. Joints can be classified as immovable, slightly movable, or freely movable.

The Muscular System

There are three different types of muscle tissues that are specialized for different functions: skeletal, smooth, and cardiac muscle. Skeletal muscles are usually attached to bones. Most skeletal muscle movements are consciously controlled by the central nervous system. Smooth muscle movements are usually involuntary. Most smooth muscle cells can function without direct stimulation by the nervous system. Cardiac muscle is only found in the heart. Cardiac muscle cells can contract on their own without stimulation by the nervous system.

Muscle Contraction and Movement Muscles produce movements by shortening, or contracting. A muscle produces force by contracting in one direction. Muscles work in opposing pairs around joints. When one muscle in the pair contracts, the other muscle in the pair relaxes.

The Integumentary System

Skin and its related structures—the hair, nails, and glands—make up the integumentary system. The integumentary system serves as a barrier against infection and injury, helps to regulate body temperature, removes wastes, gathers sensory information, and produces vitamin D.

The outer layer of the skin is the epidermis. The dermis lies below the epidermis. It contains blood vessels, nerve endings, glands, sensory receptors, smooth muscles, and hair follicles. Beneath the dermis is a layer of fat and loose connective tissue that helps to insulate the body. Hair protects the skin and prevents dirt from entering the body. Nails protect fingertips and toes from damage.

The Endocrine System

The glands of the endocrine system release hormones that travel through the blood and control the actions of cells, tissues, and organs.

Hormone Action Hormones affect cells by binding to specific chemical receptors located either on cell membranes or within cells. If a cell does not have receptors for a particular hormone, the hormone has no effect on it.

Control of the Endocrine System The endocrine system is regulated by negative feedback mechanisms that function to maintain homeostasis.

READING TOOL

Apply Prior Knowledge

In the last lesson, you learned about the kidneys, which are the major organ of the excretory system. The kidneys "read" the blood that flows through them, then change their filtering and reabsorption according to the needs of the body. Hormones from the endocrine system also give the kidneys instructions. Antidiuretic hormone (ADH) causes the kidneys to reabsorb more water and return it to the blood stream. ☑ **What do you think happens to ADH levels when a person is severely dehydrated?**

READING TOOL

Sequence of Events As you read about the female reproductive system, create a timeline or flowchart that shows the main events of fertilization and early human development. ☑ **When does cell differentiation begin?**

Maintaining Water Balance Water balance is one example of how the endocrine system maintains homeostasis.

Blood Glucose Regulation Glucose concentration in the bloodstream is controlled by insulin and glucagon. When blood glucose concentration rises, the pancreas releases insulin. When blood glucose concentration drops, the pancreas releases glucagon.

The Male Reproductive System

In addition to producing hormones that control the development of secondary sexual characteristics, the organs of the male reproductive system produce and deliver sperm. Sperm development begins in the testes, where specialized cells undergo meiosis to form sperm nuclei. Sperm then move into the epididymis, where they mature and are stored. Glands lining the reproductive tract produce nutrient-rich seminal fluid that nourishes the sperm. The combination of sperm and seminal fluid, known as semen, is ejected through the urethra in a process called ejaculation.

The Female Reproductive System

The primary reproductive organs of the female are the ovaries. Ovaries produce hormones that control the development of secondary sexual characteristics; produce egg cells, or ova; and prepare the body nourish a developing embryo.

READING TOOL

Make Connections

During human development, different layers of cells become different body tissues. Gastrulation creates three cell layers that make up many different organs and internal structures. ☑ **Which cell layer becomes the integumentary system?**

Fertilization and Early Development Human development begins with fertilization, the fusion of sperm and egg. The fertilized egg undergoes multiple rounds of mitosis. Cells then begin to differentiate, producing different body tissues.

Gastrulation Gastrulation results in the formation of three cell layers called the ectoderm, mesoderm, and endoderm. The ectoderm develops into skin and the nervous system. Mesoderm cells develop into many of the body's internal structures. The endoderm forms the lining of some organs.

Neurulation During neurulation, tissue differentiates into structures from which the spinal cord, the brain, nerve cells, and other structures will later develop.

The Placenta The placenta forms the vital connection between mother and embryo.

Later Development Throughout the rest of the first trimester, the fetus continues to grow. During the second trimester, the tissues and organs of the fetus become more complex and begin to function. During the third trimester, the fetus doubles in mass and the central nervous system and lungs complete their development.

CHAPTER 27

LESSON 4

Immunity and Disease

READING TOOL **Active Reading** As you read your textbook, fill in the table with information about the different types of defenses the human body has against pathogens.

Heading	Nonspecific Defenses		Specific Defenses: The Immune System	
Subheading	**First Line of Defense**	**Second Line of Defense**	**Recognizing "Self" and "Nonself"**	**Fighting Infections**
Details				

Lesson Summary

Classifying Diseases

KEY QUESTION *What causes infectious diseases?*

As you read, circle the answers to the Key Question. Underline any words you do not understand.

A disease is an abnormal condition that harms an organism. In the mid-nineteenth century, scientists proposed the germ theory of disease, which is that **infectious diseases** occur when microorganisms disrupt normal body functions. Today, we call such microorganisms **pathogens**, meaning "sickness producers." Infectious diseases are caused by viruses, bacteria, fungi, "protists," and other pathogens.

How Infectious Disease Spreads Many bacteria and viruses are spread through coughing, sneezing, and physical contact. Other types of diseases are spread through the exchange of body fluids that occurs during sexual intercourse or through blood transfusions. Many pathogens that infect the digestive tract are spread through contaminated water.

BUILD Vocabulary

infectious disease disease caused by microorganisms that disrupt normal body function

pathogen disease-causing agent

Prefixes The prefix *patho-* comes from the Greek word *pathos*, meaning "suffering" or "disease."

☑ **What are three types of pathogens that can cause infectious diseases?**

BUILD Vocabulary

inflammatory response nonspecific defense reaction to tissue damage caused by injury or infection

Related Words The verb *inflame* means "to make sore, red, and swollen." During the inflammatory response, the injured area of the body often becomes sore, red, and swollen due to increased blood flow. ☑ **Why is increased blood flow an important part of the inflammatory response?**

_____

_____

_____

_____

_____

Disease Caused by Toxins Another important category of diseases involves toxic chemicals that may be found in food or drinking water. Chemicals found in water that can damage the body include compounds of mercury, arsenic, lead, and chromium. Some of these compounds occur naturally at low levels in streams and groundwater. However, some are released into the environment by mining or industrial activities.

Nonspecific Defenses

KEY QUESTION *What are the body's nonspecific defenses against pathogens?*

Body defenses that act against a wide range of pathogens are called nonspecific defenses. Nonspecific defenses include the skin, tears and other secretions, the inflammatory response, and fever.

First Line of Defense The skin is a physical barrier that keeps most pathogens out of the body. Saliva, mucus, and tears contain lysozyme, an enzyme that breaks down bacterial cell walls.

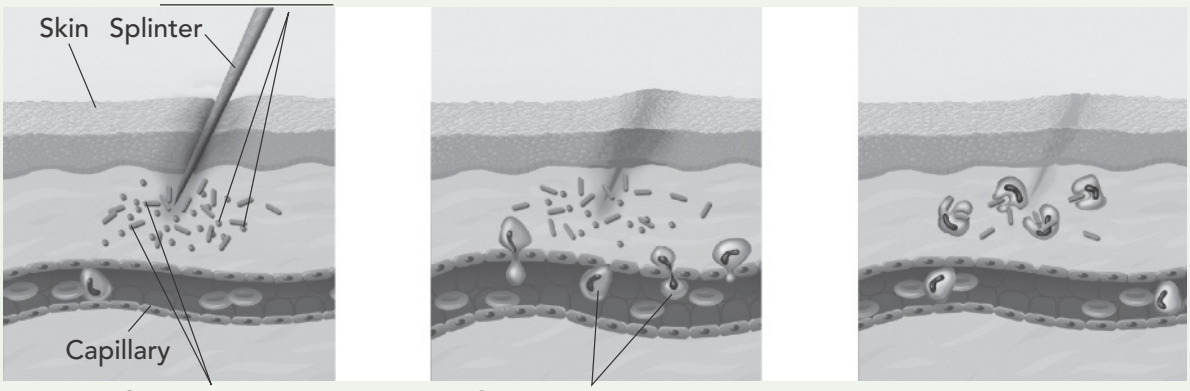
Second Line of Defense If pathogens do make it into the body, the second line of defense includes the inflammatory response and fever. The **inflammatory response** causes infected areas to become red and painful, or inflamed.

The immune system also releases chemicals that produce a fever. Increased body temperature may slow down or stop the growth of some pathogens and helps to speed up the immune response.

Visual Reading Tool: Inflammatory Response

Add labels to the factors involved in the inflammatory response shown in the diagram below. Then fill in the blanks in the captions to describe the main steps of the response.

1. _____



2. _____ 3. _____

4. _____ stimulate increased blood flow to the area.

5. _____ move into the tissue.

6. White blood cells engulf and destroy _____.

Specific Defenses: The Immune System

KEY QUESTION *What is the function of the immune system's specific defenses?*

The immune system's specific defenses distinguish between "self" and "other," inactivating or killing foreign substances or cells.

Recognizing "Self" and "Nonself" The immune system recognizes cells that belong in the body and treats these as "self." When the immune system recognizes a bacterium or virus as "other," it uses cellular and chemical weapons to attack it. After encountering an invader, the immune system "remembers" it. This immune "memory" enables a more rapid and effective response if the same pathogen attacks again.

Specific immune defenses are triggered by molecules called antigens. An **antigen** is any foreign substance that can stimulate an immune response.

Fighting Infections The specific immune response has two main styles of action: humoral immunity and cell-mediated immunity. **Humoral immunity** depends on the action of B cells releasing antibodies that circulate in the blood and the lymph looking for foreign antigens. **Cell-mediated immunity** uses T cells to directly attack specific foreign invaders such as viruses, fungi, and abnormal cancer cells inside living cells.

BUILD Vocabulary

antigen any foreign substance that triggers an immune response

humoral immunity immunity depends on the action of B cells releasing antibodies that circulate in the blood and the lymph looking for foreign antigens

cell-mediated immunity immune response that uses T cells to directly attack specific foreign invaders such as viruses, fungi, and abnormal cancer cells inside living cells

Related Words Antigens are often small molecules that are on the outer surfaces of bacteria, viruses, or parasites. Once the body recognizes an antigen, it begins to attack it. ☑ **What do we call the proteins that tag antigens for destruction?**

Immune System Disorders

KEY QUESTION *What health problems result when the immune system does not function properly?*

Problems with immune system function can result in conditions such as allergies, asthma, autoimmune disease, and AIDS.

Allergies Antigens that cause allergic reactions are called allergens. Allergens can trigger an inflammatory response. Drugs called antihistamines help relieve allergy symptoms.

Asthma In asthma, the air passages narrow, causing wheezing and difficulty breathing.

Autoimmune Disease When the immune system attacks the body's own cells, it produces an autoimmune disease.

HIV and AIDS Acquired immunodeficiency syndrome (AIDS) is caused by the human immunodeficiency virus (HIV). HIV attacks key cells within the immune system, leaving the body with inadequate protection against pathogens. Over time, HIV cripples the ability of the immune system to fight HIV itself and other pathogens, which leads to AIDS. At present, there is neither a cure for nor a reliable vaccine against AIDS.

READING TOOL

Active Reading HIV and AIDS are two different conditions that are often confused or grouped into one category. However, HIV occurs first, and then leads to AIDS. ☑ **How does HIV lead to immunodeficiency (AIDS)?**

27 Chapter Review

Review Vocabulary

Choose the letter of the best answer.

1. Which lines interior and exterior body surfaces?

- ☐ A. muscle tissue
- ☐ B. nervous tissue
- ☐ C. epithelial tissue

2. Which refers to any foreign substance that triggers an immune response?

- ☐ A. antigen
- ☐ B. allergen
- ☐ C. antibody

Match the vocabulary term to its definition.

3. _____	relatively constant internal conditions	a. feedback inhibition
4. _____	when a stimulus produces an opposing response	b. homeostasis
5. _____	disease-causing agent	c. pathogen

Review Key Questions

Provide evidence and details to support your answers.

6. Describe homeostasis.

_____

_____

7. What are the main structures and functions of the circulatory system?

_____

_____

_____

8. How does the endocrine system control the actions of specific cells?

_____

_____

_____

9. Describe a nonspecific immune defense used by the body.

_____