# Guided Notes - - The Human Body: An Orientation - -

# Anatomy

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Study of the structure and shape of the body and its parts

### Observation is used to see sizes and relationships of parts

## Gross anatomy

### Large structures

### Easily observable

## Microscopic anatomy

### Structures are too small to be seen with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_ can be viewed only with a microscope

# Physiology

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Study of how the body and its parts work or function

## Structure determines what functions can occur

## For example, the air sacs of the lungs have very thin walls, a feature that enables them to exchange gases and provide oxygen to the body

**NOTES:**

**Levels of Structural Organization**

## Six levels of structural organization

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

# NOTES:

# Organ System Overview

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Forms the external body covering (skin) and includes hair and fingernails

### Waterproofs the body

### Cushions and protects deeper tissue from injury

### Produces vitamin D with the help of sunlight

### Excretes salts in perspiration

### Helps regulate body temperature

### Location of cutaneous nerve receptors

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Consists of bones, cartilages, ligaments, and joints

### Provides muscle attachment for movement

### Protects vital organs

### Site of blood cell formation

### Stores minerals

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Skeletal muscles contract (or shorten)

### Produces movement of bones

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Fast-acting control system

### Consists of brain, spinal cord, nerves, and sensory receptors

### Responds to internal and external stimuli

### Sensory receptors detect changes

### Messages are sent to the central nervous system

### Central nervous system assesses information and activates effectors (muscles and glands)

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Secretes chemical molecules, called hormones, into the blood

### Body functions controlled by hormones include:

#### Growth

#### Reproduction

#### Use of nutrients

### Endocrine glands include:

#### Pituitary gland

#### Thyroid and parathyroids

#### Adrenal glands

#### Thymus

#### Pancreas

#### Pineal gland

#### Ovaries (females) and testes (males)

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Includes heart and blood vessels

#### Heart pumps blood

#### Vessels transport blood to tissues

### Blood transports:

#### Oxygen and carbon dioxide

#### Nutrients

#### Hormones

### Blood also contains white blood cells and chemicals that provide protection from foreign invaders

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Includes lymphatic vessels, lymph nodes, and lymphoid organs

### Complements the cardiovascular system by returning leaked fluids back to bloodstream

### Lymph nodes and other lymphoid organs cleanse the blood

### Houses white blood cells, which are involved in immunity

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Includes the nasal passages, pharynx, larynx, trachea, bronchi, and lungs

### Gases are exchanged with the blood through air sacs in the lungs

#### Supplies the body with oxygen

#### Removes carbon dioxide

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Includes the oral cavity (mouth), esophagus, stomach, small and large intestines, rectum, and accessory organs

### Breaks down food

### Allows for nutrient absorption into blood

### Eliminates indigestible material as feces

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Includes the kidneys, ureters, urinary bladder, and urethra

### Eliminates nitrogenous wastes

### Maintains acid-base balance

### Regulates water and electrolyte balance

### Helps regulate normal blood pressure

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### For males, includes the testes, scrotum, penis, accessory glands, and duct system

#### Testes produce sperm

#### Duct system carries sperm to exterior

### For females, includes the ovaries, uterine tubes, uterus, and vagina

#### Ovaries produce eggs

#### Uterus provides site of development for fetus

# NOTES:

# Maintaining Life: Necessary Life Functions

## Maintaining boundaries

### Boundaries separate the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_” from the “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_”

## Movement

### Locomotion

### Movement of substances

## “\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ (irritability)

### Ability to sense changes and react

## Digestion

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of nutrients

# NOTES:

# The Language of Anatomy

## Special terminology is used to prevent misunderstanding

## Exact terms are used for:

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Standard body position used to avoid confusion

### Terminology refers to this position regardless of actual body position

### Stand erect, feet parallel, arms hanging at the sides with palms facing forward and thumbs pointing away from the body

# NOTES:

# Directional Terms

## Directional terms

### Explain location of one body structure in relation to another

## Superior (cranial or cephalic):

## Inferior (caudal):

## Anterior (ventral):

## Posterior (dorsal):

## Medial:

## Lateral:

## Proximal:

## Distal:

## 

## Superficial (external):

## Deep (internal):

# NOTES:

# Regional Terms

## Anterior (ventral) body landmarks

## Posterior (dorsal) body landmarks

# Body Planes and Sections

## Sections are cuts along imaginary lines known as *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

## Three types of planes or sections exist as right angles to one another

## A sagittal section divides the body (or organ) into \_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts

## A median, or midsagittal, section divides the body (or organ) into *equal* \_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ parts

## A frontal, or coronal, section divides the body (or organ) into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ parts

## A transverse, or cross, section divides the body (or organ) into \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_\_\_\_\_\_\_ parts

# NOTES:

# Body Cavities

## Two internal body cavities

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Body cavities provide varying degrees of protection to organs within them

## Dorsal body cavity has two subdivisions

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

#### Houses the spinal cord

#### Protected by the vertebrae

## Ventral body cavity has two subdivisions separated by the diaphragm

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

## Thoracic cavity

### Cavity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### Houses heart, lungs, and other organs

### Mediastinum, the central region, houses heart, trachea, and other organs

### Protected by the rib cage

## Abdominopelvic cavity

### Cavity \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ contains the stomach, liver, and other organs

#### Protected only by trunk muscles

### \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ reproductive organs, bladder, and rectum

#### Protected somewhat by bony pelvis

### No physical structure separates abdominal from pelvic cavities

## Abdominopelvic cavity subdivisions

### Four quadrants

### Nine regions