

Human Body SYSTEMS Study Guide

Muscular System:



- **Main body part and organ of Muscular System:** all Muscles
- Three types of muscles: *Smooth* (stomach, lungs, blood vessels), *Skeletal* (biceps, triceps), *Cardiac* (heart)
- The nervous system detects stimuli and sends messages to the muscular system and this creates movement.
- Works directly with the skeletal system—often called **musculoskeletal** system

Skeletal System:



- **Main body parts and organs of Skeletal System:** Bones
- Three functions of the skeleton: Protects organs, movement, supports muscles
- Works directly with the muscular system—often called **musculoskeletal** system

Circulatory System:



- **Main body parts and organs of Circulatory System:** heart, blood vessels (capillaries, veins, arteries)
- Main job of the circulatory system is to circulate blood throughout the body.
 - Blood Vessels use the **muscular system** to circulate the blood around the body.
- Exchange of oxygen and carbon dioxide between air and blood occurs in lungs (in the air sacs called the alveoli)
 - These nutrients, wastes, and oxygen are exchanged between blood and cells in the **CAPILLARIES** attached to the air sacs (Alveoli)
- The circulatory system passes nutrients, gases, hormones, and blood cells to and from cells in the body. This helps our body fight diseases (white blood cells attack germs). In addition, this helps us maintain body temperature.
 - In humans, most gas exchange occurs between the circulatory system and the respiratory system.
- The three types of **Blood Vessels** are: *Veins* (move towards the heart and are oxygen poor), *Arteries* (pump blood away from the heart and oxygen rich-“Arteries away”), and *Capillaries* (tiny blood vessels that bring oxygen rich blood & nutrients and remove waste from tiny tissues in our body)
- Heart has *four* chambers and pumps blood directly into the arteries (and therefore out of the heart) “Arteries away”

Respiratory System:



- **Main body parts and organs of Respiratory System:** Nose, Trachea, Lungs
- When you are exercising your breathing rate and your heart rate will rise. It will go back down after you finish exercising.
- Exchange of oxygen and carbon dioxide between air and blood occurs in lungs (in the air sacs called the alveoli)
 - Respiratory system works with the circulatory system to bring oxygen into the blood. This occurs in the lungs.
- In humans, most gas exchange occurs between the circulatory system and the respiratory system.

Nervous System:



- **Main body parts and organs of Nervous System:** Brain, spinal cord, nerve cells (neurons)
- The nervous system controls all the other systems in the body
- The nervous system detects stimuli and sends messages to the muscular system and this creates movement.
- Messages are sent from the brain (*Central Nervous System*) through neurons and delivered all throughout our body (using the *Peripheral Nervous system*)

Digestive/Excretory System:



- **Main body parts and organs of Digestive System:** Mouth, Esophagus, Stomach, Intestines
- Food is broken up in two ways: *Mechanical Digestion* (physical breaking apart of food) and *Chemical Digestion* (enzymes in your stomach, liver, and pancreas break down the food)
 - After the food is broken down it moves into the small intestine
 - The small intestine is where most of the nutrients from food are absorbed.
 - Cells on the surface of the small intestine absorb the nutrients our body needs.
 - Then the rest of the digested food is eliminated out of the large intestine or colon as waste.
- Nutrients that our body needs are absorbed into our cells from our small intestines.