



Session 5

C-PE 2 (3 units) **PATHFIT II Exercise-based Program**

Spring Semester 2024



The Human Body as a Working System



Session Objectives:

- ✓ Define proper terms in referring to connective tissues in the human body.
- ✓ Identify the importance and proper care of the human body parts and how they are working as a system in relation to physical activities.
- ✓ Apply the learned issues and topics to real life situations.

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Types Body Tissue

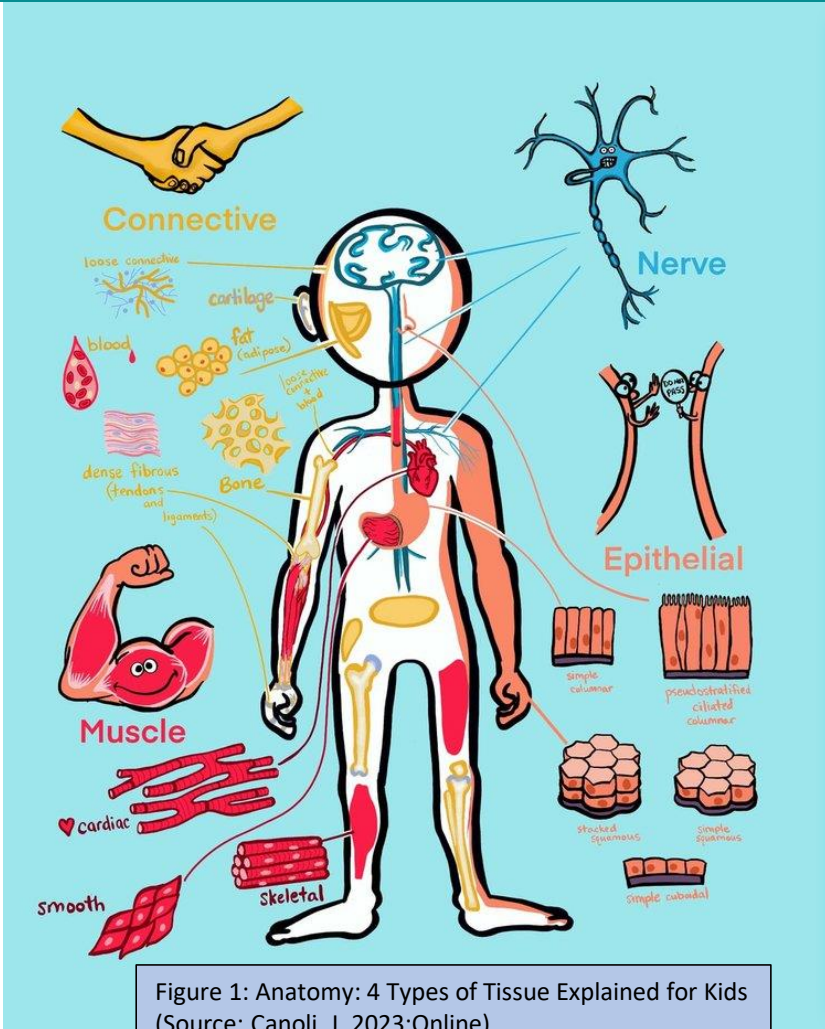
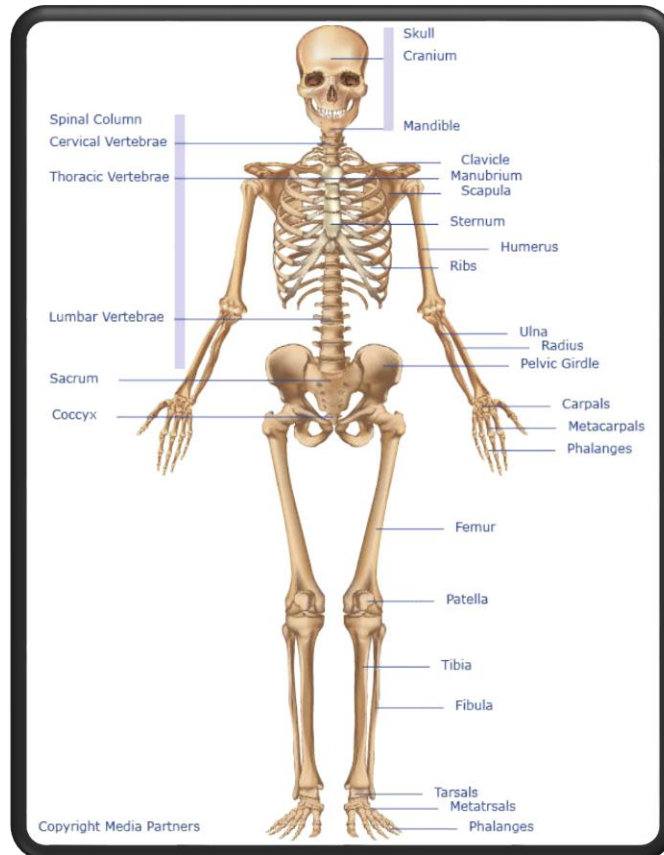


Figure 1: Anatomy: 4 Types of Tissue Explained for Kids
(Source: Canoli, J. 2023:Online)



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TISSUE TYPES AND TERMS



BONES

Basic Framework of the body

Figure 2: Skeletal System: Bones, Joints, Cartilage, Ligaments, Bursae
(Source: Chung, A. 2019:Online)

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TISSUE TYPES AND TERMS



TENDON

Attaches muscle to bones

Figure 3: Why do Tendon Injuries take so long to Heal?
(Source: Ashton, T. 2021:Online)

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TISSUE TYPES AND TERMS

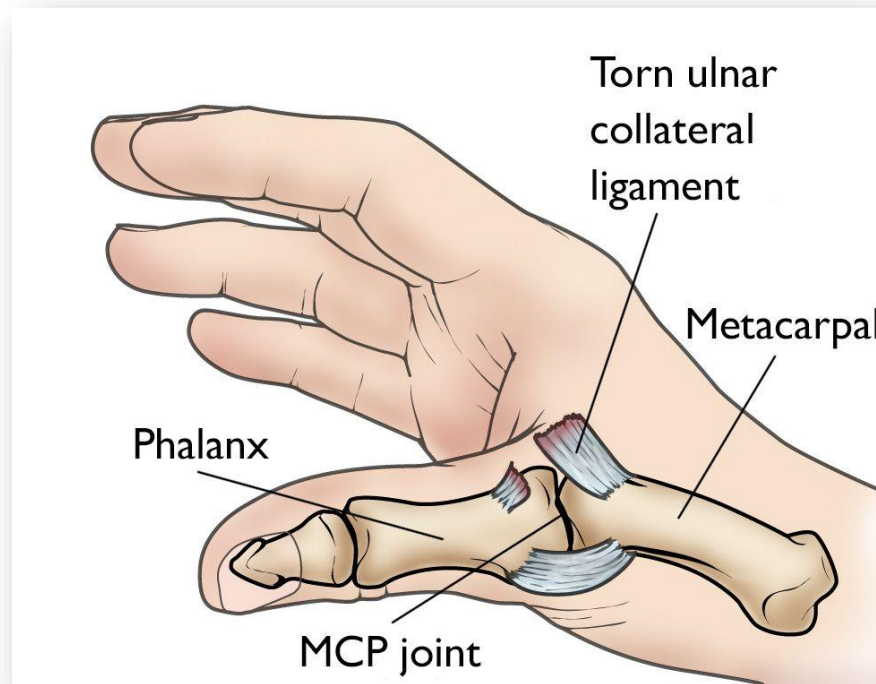


Figure 4: Sprained thumb.
(Source Pidgeon, T. et. al. 2022: Online)

LIGAMENT

Attaches bone to bone



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TISSUE TYPES AND TERMS

NERVE

Sensation, pain and motor power

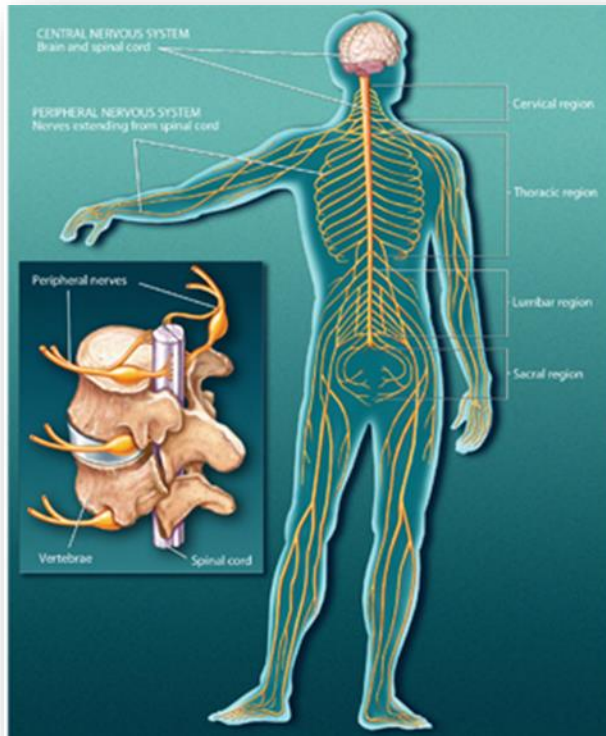


Figure 5: Parts of the Nervous System
(Source: Baltimore, I. 2012:Online)

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TISSUE TYPES AND TERMS

JOINT

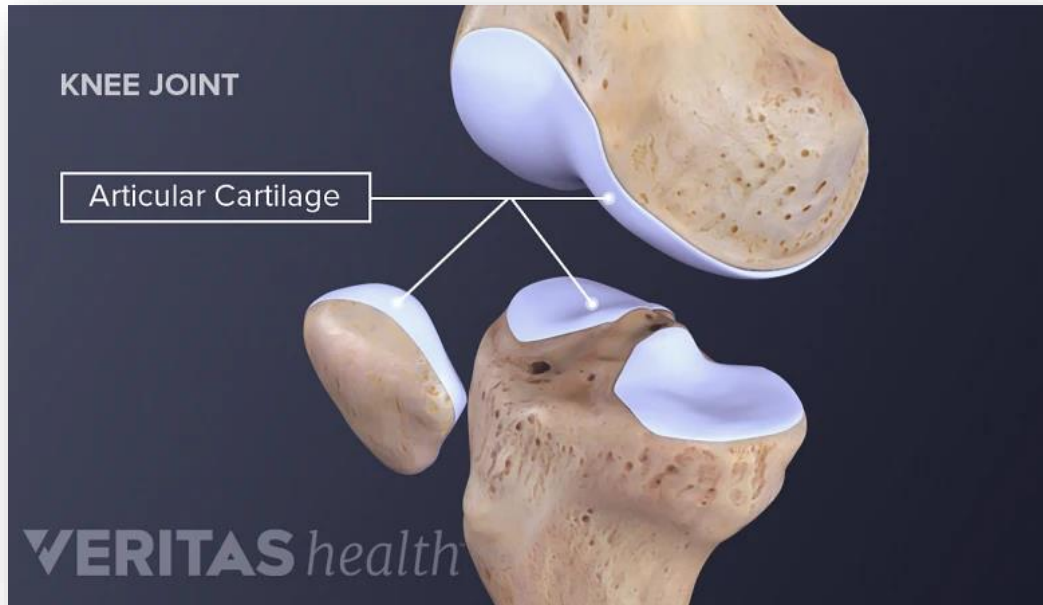
Where two bones meet and move



Figure 7: Structure and Types of Joints in the Human Body.
(Source: Humagain, S. 2012:Online)

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TISSUE TYPES AND TERMS



CARTILAGE

*Covers the ends of bones
:smooth*

Figure 7: What is Cartilage?
(Source: Konstantakos, E. 2016:Online)

Integumentary System



Figure 8: Why do fingers go wrinkly after a swim.
(Source: Ocean Swim. 2023:Online)

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1. Covers and protects the body

- Pathogens
- Injury
- Ultra-violet radiation

2. Regulate body temperature

3. Reduces water loss
Keeps the body from drying out!

4. Houses sensory receptors



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Skeletal System

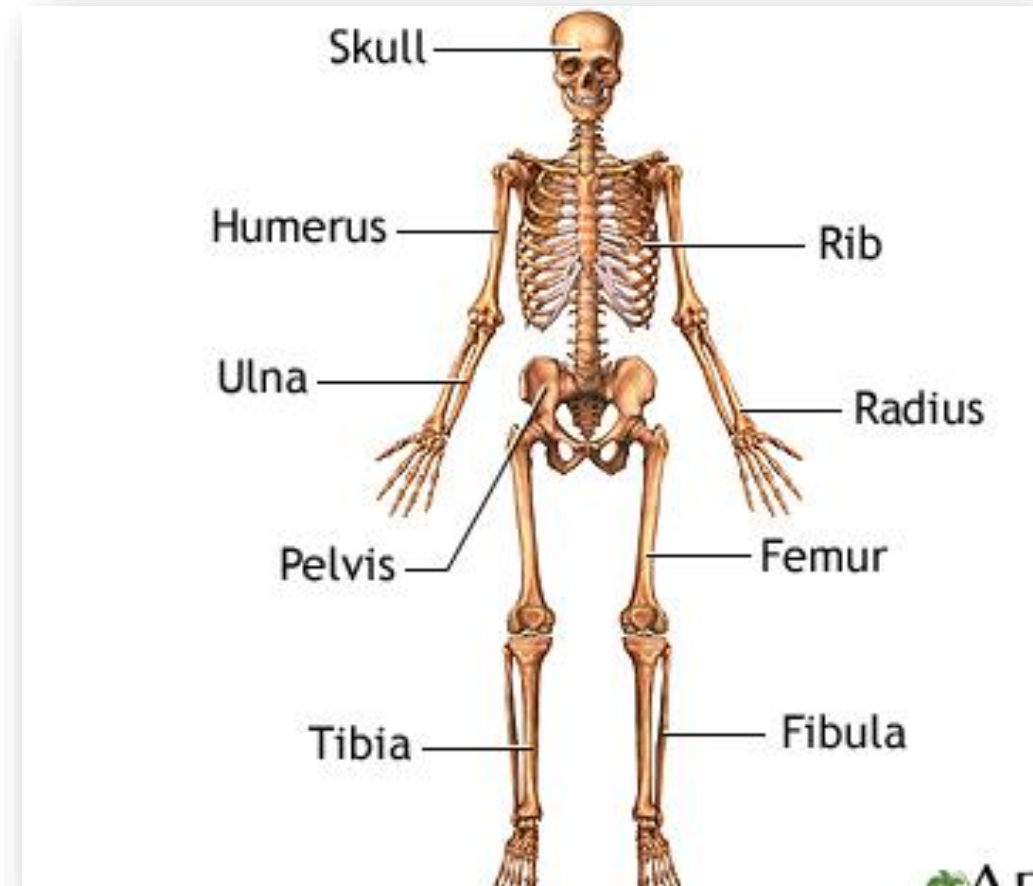
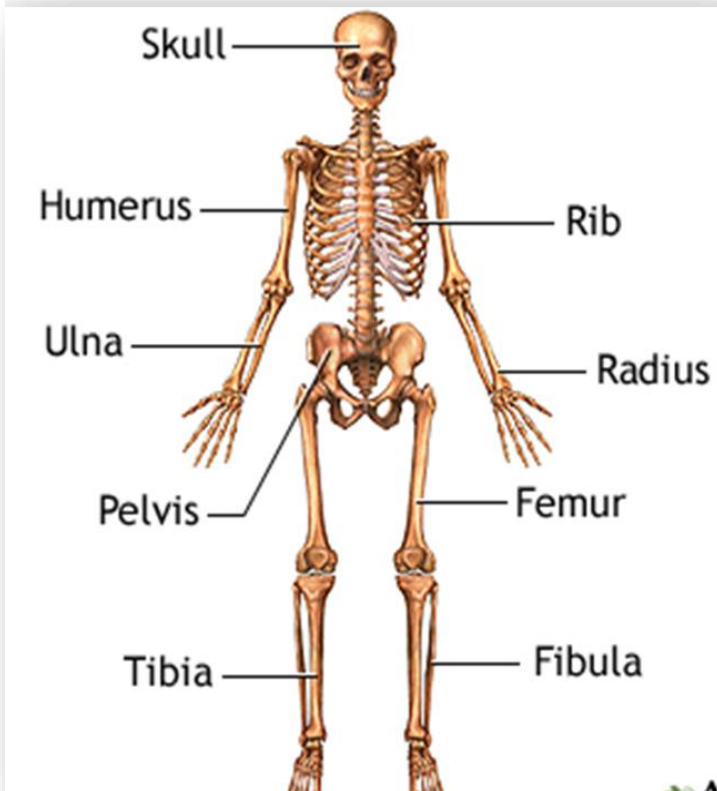


Figure 9: Anterior Skeletal Anatomy..
(Source: Kaneshiro, N.. 2023:Online)

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- Framework of the body
- facilitates movement
- protects internal organs
- stores and releases minerals and fat
- The adult human body has 206 bones
- The femur, or thighbone, is the longest bone of the human skeleton
- Bones stop growing in length during puberty.
- Bones function as the skeleton of the human body, allow body parts to move and protect organs from impact damage.

Muscular System

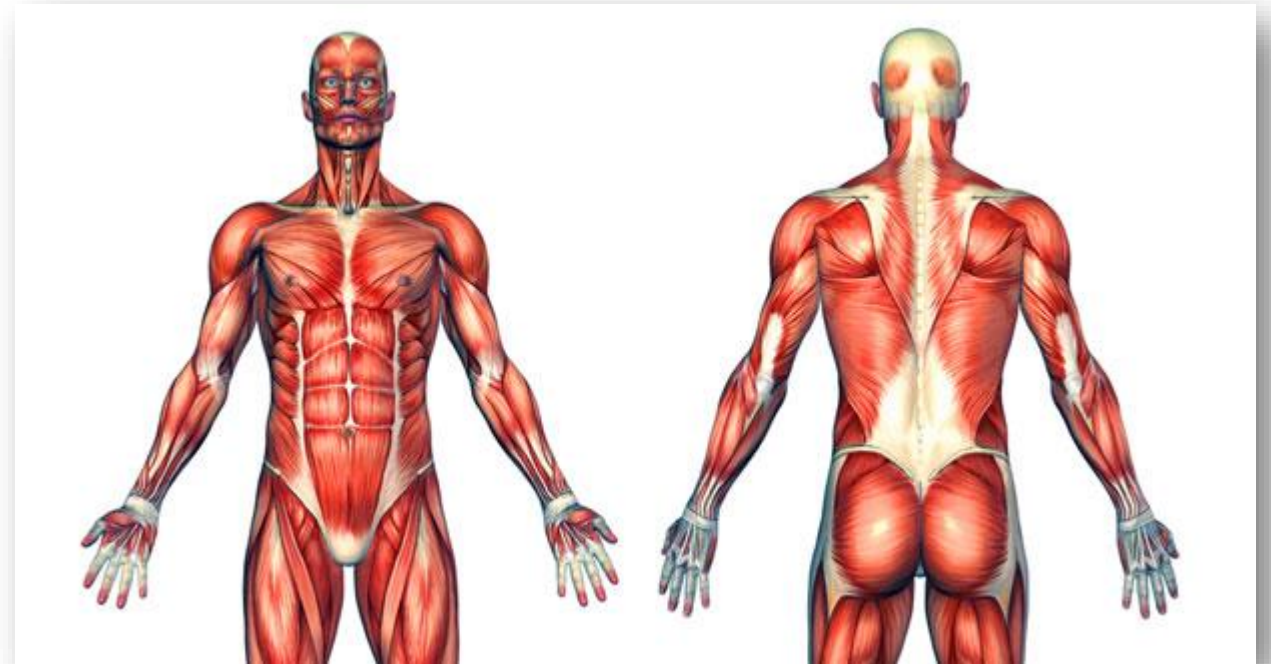
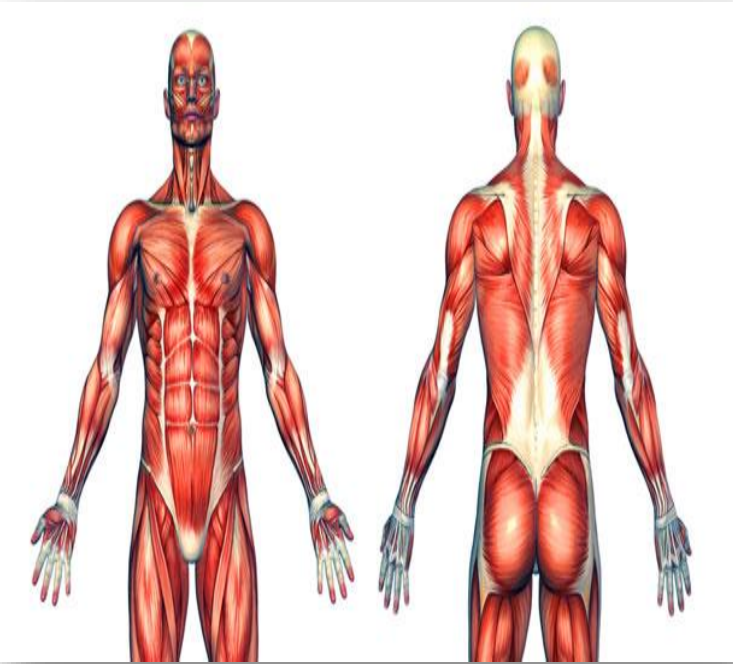


Figure 10: Human Muscles
(Source: Walden, M.. 2024 Online)

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- **Three types:** skeletal, cardiac and smooth.
- The human body has about 600 muscles in various parts of the body.
- The **largest muscle** of the body is called *gluteus maximus*.
- One of the strongest muscles of the body is in the *jaw, gluteus maximus etc.*
- The motion provided by the muscles comprises only of the “pulling” motion and not the “pushing” motion.
- The longest muscle in the body is the sartorius muscle.

Nervous System

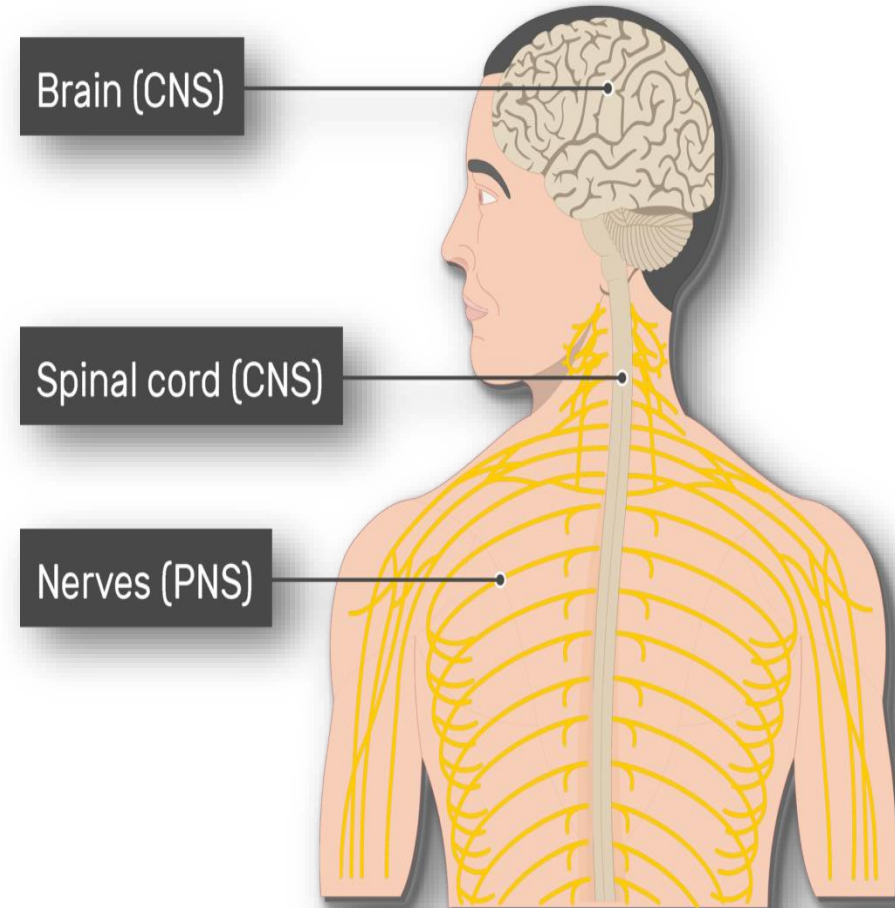


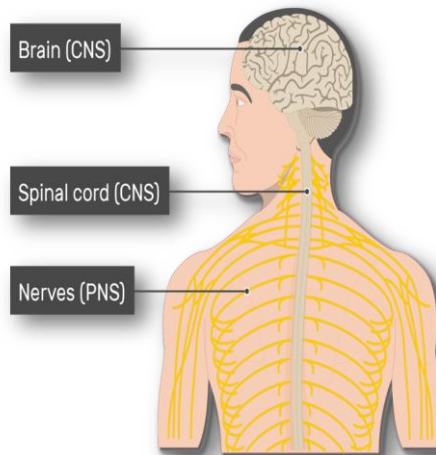
Figure 11: Major Organs and Divisions of the Nervous System
(Source: Sheffield, S. 2022 Online)

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A system that controls all of the activities of the body.

The nervous system is made of:

The brain



The spinal cord

The nerves

The senses



The Central Nervous System is made of the brain and the spinal cord.

The Outer Nervous System is made of the nerves and the sense organs.



The nervous system also allows you to
react to a **stimulus**.

Your reactions are **automatic**.

Automatic

Automatic means that you do not
have to think about your reactions.



- The ***Brain Stem*** connects the brain to the spinal cord.
- The nerves in the brain stem control your ***heartbeat, breathing, and blood pressure.***



1. The cerebrum controls your **thinking**.
2. The cerebrum controls your **memory**.
3. The cerebrum controls your **speaking**.
4. The cerebrum controls your movement and identifies the information gathered by your sense organs.



1. The cerebellum controls you **balance.**
2. The cerebellum controls your **posture.**

Respiratory System

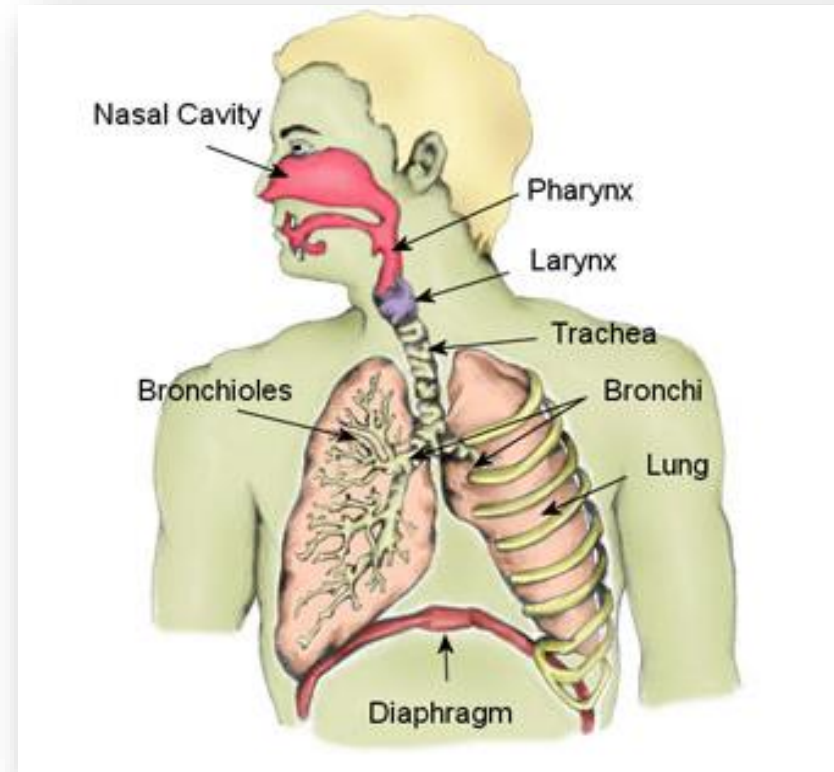


Figure 12: The Respiratory System
(Source: Walden, M.. 2024 Online)



- The main organ of the respiratory system is the lungs.
- Through breathing, inhalation and exhalation, the respiratory system facilitates the exchange of gases.
- The respiratory system also helps us to smell and create sound.

Circulatory System

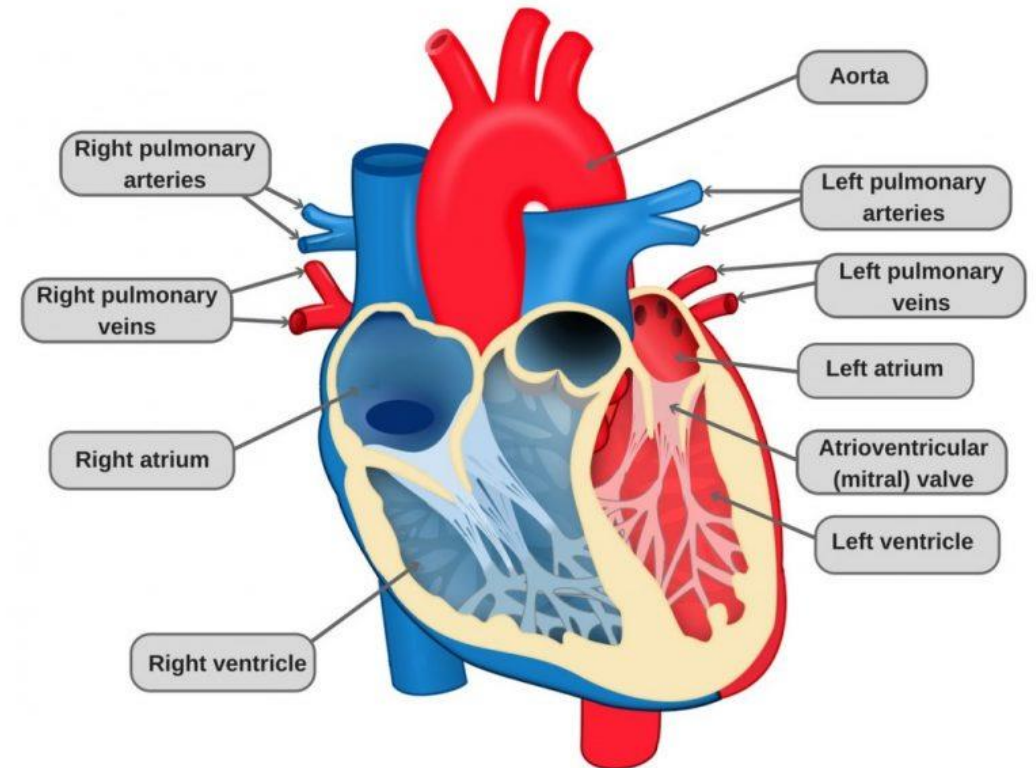


Figure 13: How Does The Human Circulatory System Work?
(Source: Jalan, M.. 2023 Online)



- The primary components in the circulatory system are the heart, the blood vessels, and the blood.
- The circulatory system is made up of blood vessels that carry blood away from and towards the heart.



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