Lab Safety
&
Introduction to Human Biology

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Outcomes

Lab Rules

Biosafety

Human Biology

Human Organization

Basic Rules of Lab Safety

Lab safety is important because it ensures a **productive work environment** free from accidents, Laboratory accidents, and injury. To help promote lab safety,

There are several common practices that you can follow to ensure a safe and productive lab experience, These practices include:

- Proper Attire
- Personal Protective Equipment
- Safety Equipment
- Safe Environment

Personal Protective Equipment (PPE)

serves as a crucial line of defense against these risks, ensuring a safe working environment while facilitating compliance with regulatory requirements.

Lab Coat

Safety Goggles

Face Mask

First-aid kit

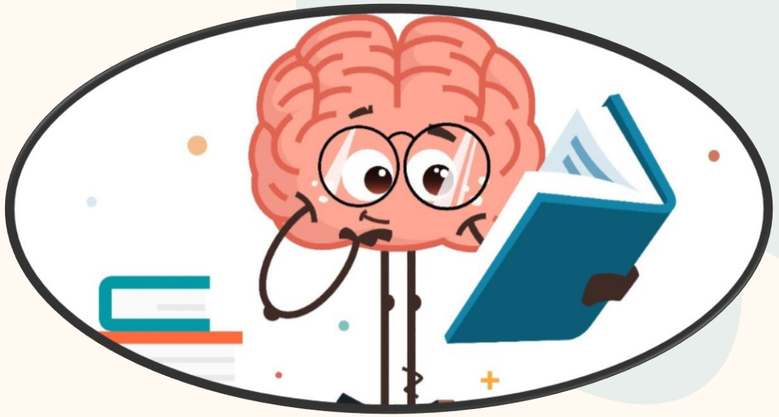
Fire extinguisher

Lab Glove

General Safety Rules

1. Wear appropriate PPE such as lab coats, gloves, and safety goggles at all times.

2. Listen to or read instructions carefully before attempting to do anything.



General Safety Rules

3. Wear safety goggles to protect your eyes from chemicals, heated materials, or things that might be able to shatter.

4. Notify your teacher if any spills or accidents occur.

5. Wash your hands before starting work and before leaving the lab to ensure cleanliness and prevent contamination.

6. During lab work, keep your hands away from your face.

7. Tie back long hair.

8. Know the location of the fire extinguisher, fire blanket, eyewash station, and first aid kit.

9. It is suggested that you wear glasses rather than contact lenses.

10. Never put anything into your mouth during a lab experiment.

11. Clean up your lab area at the conclusion of the laboratory period.

12. Never “horse around” or play practical jokes in the laboratory.

Biosafety

is protecting people from dangerous pathogens

Biosafety

The set of containment principles, technologies and practices that are implemented to prevent exposure to biological agents . and toxins, or their accidental release.

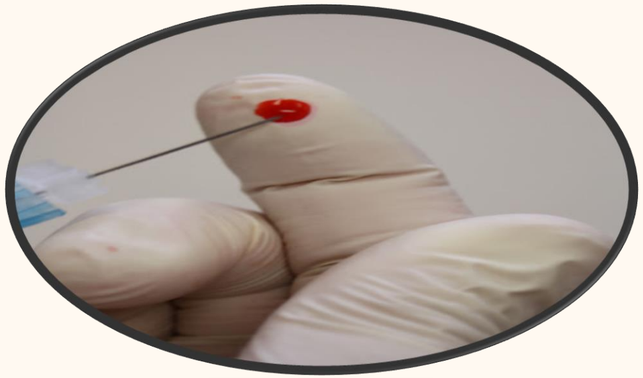
Routes of Laboratory Exposure

1. INGESTION

Consumption of a substance by an organism

2. INOCULATION

Act of introduction of a substance into the body



Routes of Laboratory Exposure

3. CONTAMINATION

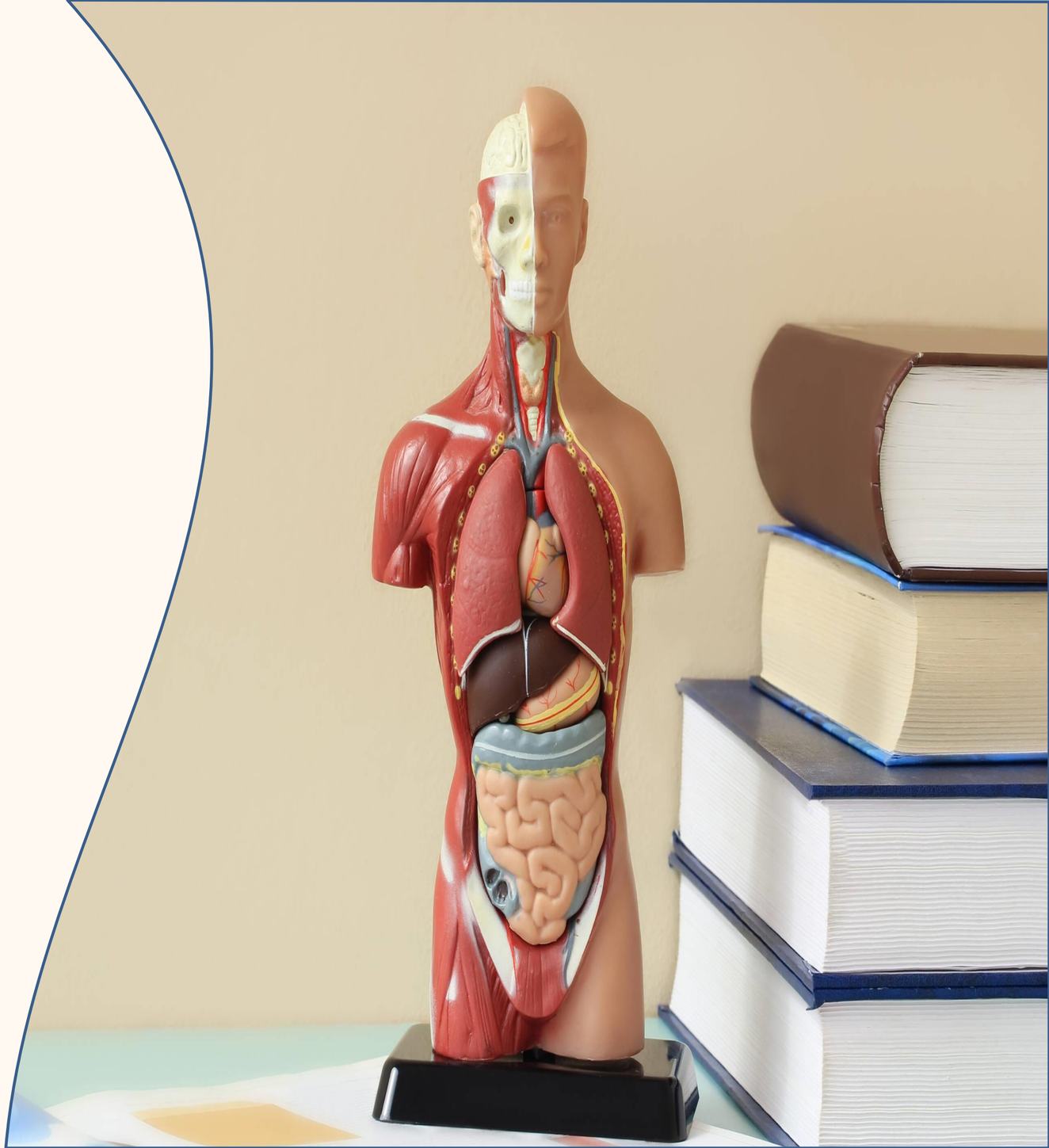
Presence of a minor and unwanted substance or impurity in the skin or mucous membrane

4. INHALATION

Act of drawing air or other substances into the lungs

Human Biology

Is the study of the anatomy and all the human activities such as growth, nutrition, reproduction, respiration, digestion, excretion, secretion ….etc.

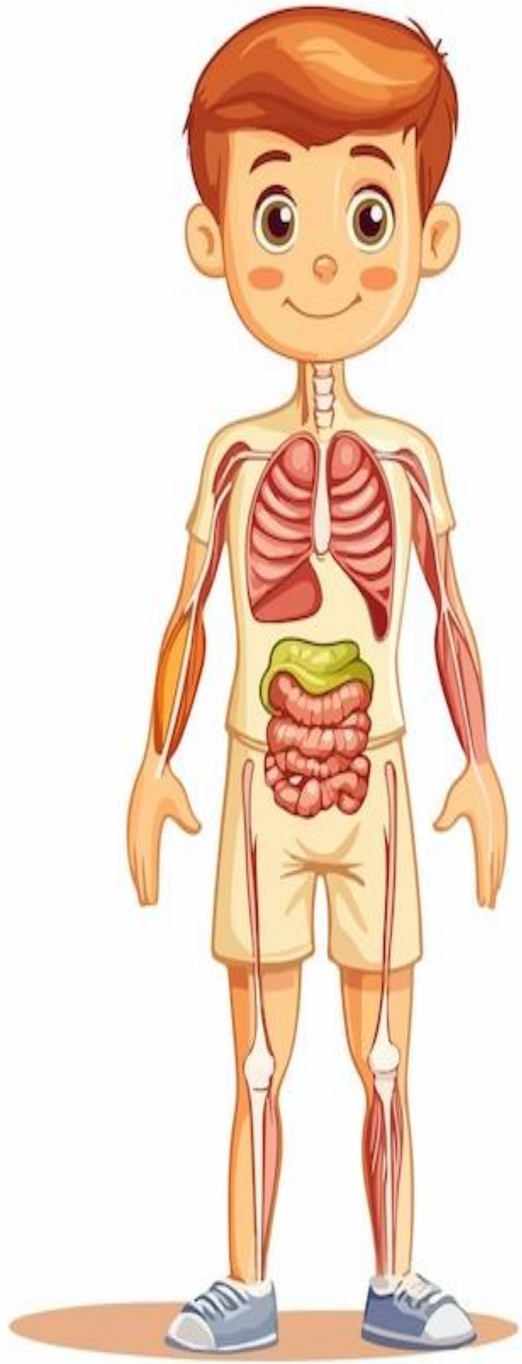


- Studying the human body involves the study of **anatomy, physiology, histology and embryology**

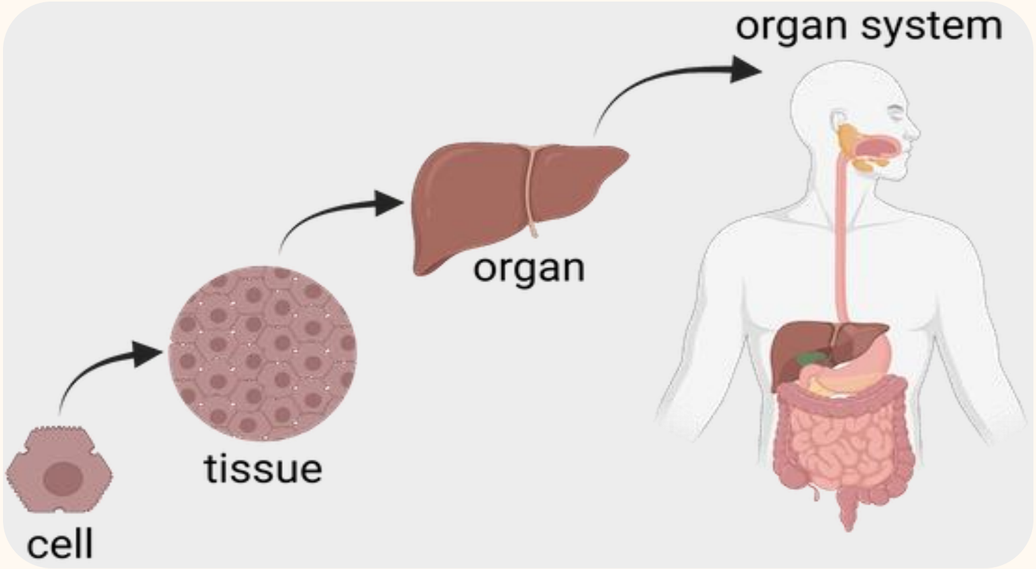
Many systems and mechanisms interact in order to maintain the homeostasis with safe levels of substances such as sugar and oxygen in the blood.

Organization of the Human Body

The human body is organized at different levels, starting with the cell and ending with the entire organism. At each higher level of organization, there is a greater degree of complexity.

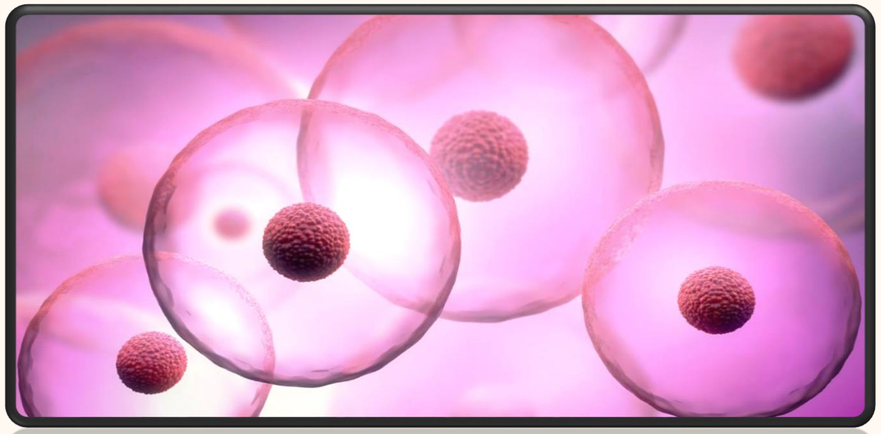


The organization of the human body begin at the very small and basic and come together to form the complete body whose different parts work in unison. This can be seen as a kind of ladder going from the basic to the very complex. At the simplest level, the body is comprised of atoms.



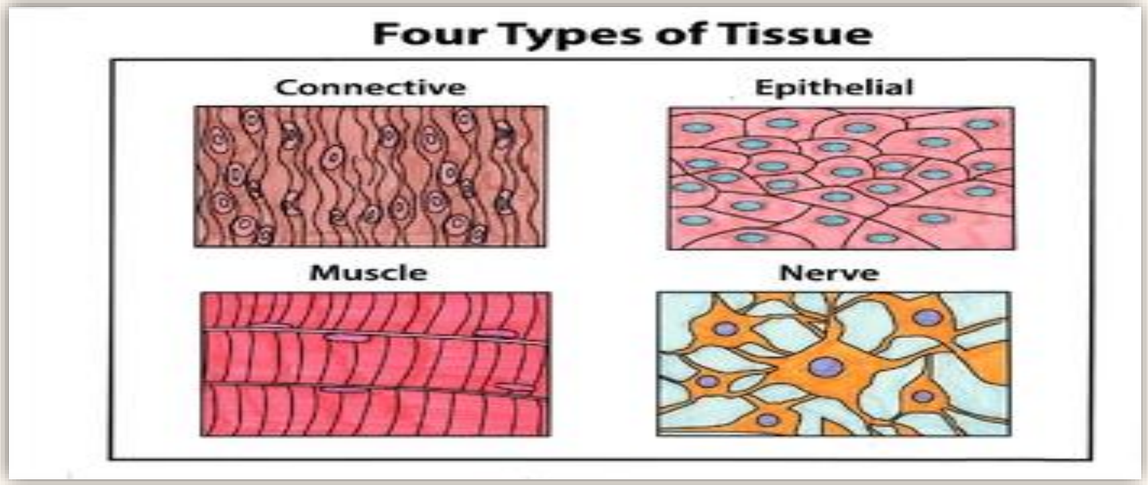
1. Cells

Cells are the basic units of structure and function in the human body, as they are in all living things.



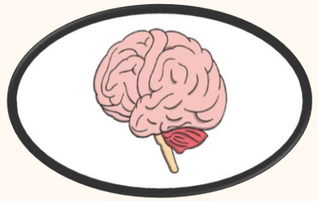
2.Tissues

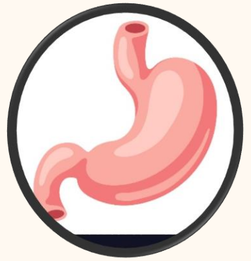
The tissue is the next level of organization in the human body. A tissue is a group of connected cells that have a similar function. There are four basic types of human tissues:

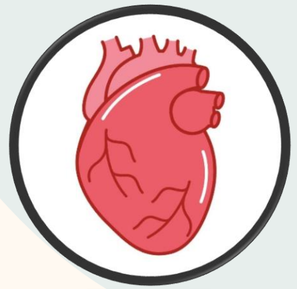


3. Organs

Organs are the next level of organization of the human body. An organ is a structure that consists of two or more types of tissues that work together to do the same job. Examples of human organs include the brain, heart, lungs, skin and kidneys.

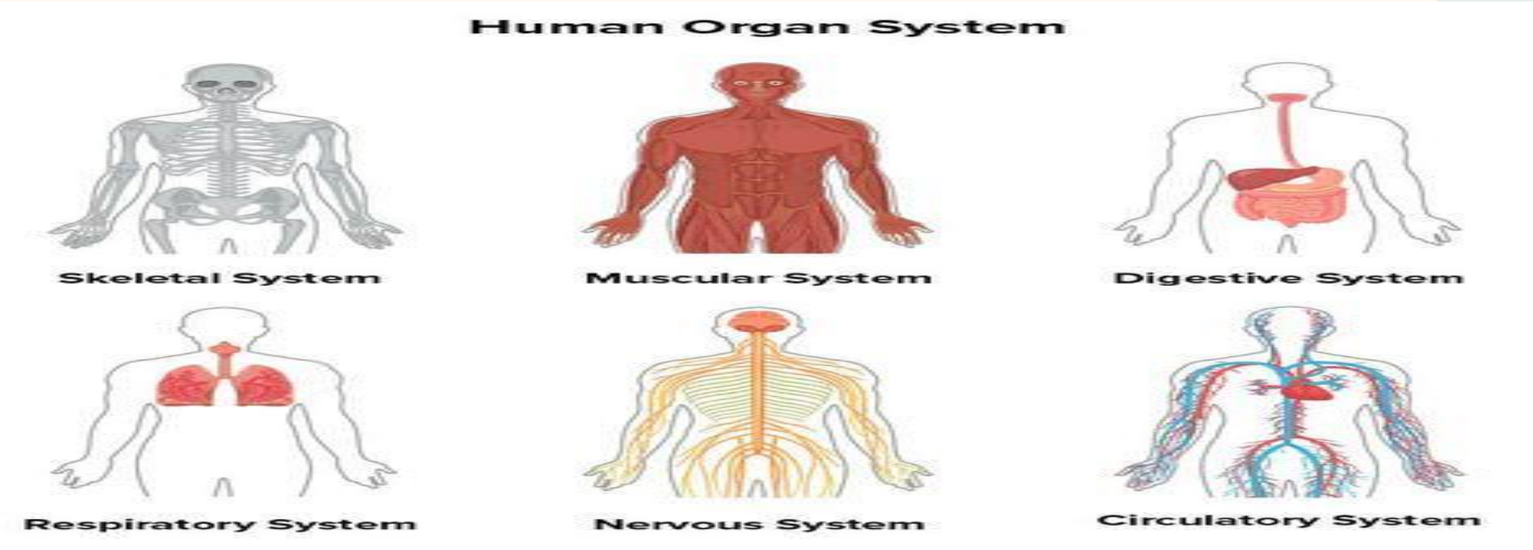






4. Organ Systems

An organ system is a group of organs that work together to carry out a complex overall function. Each organ in the system does part of the larger job. Your body has 12 organ systems.



Any Question