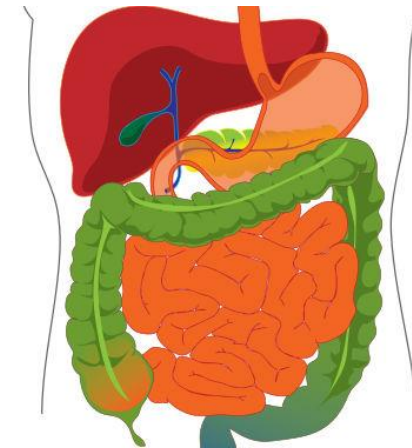


UNIT 3:

ANATOMY OF

MAMMALS

(Specializing in Humans)



Structure → Function

- Everywhere you look, the structure of things are directly related to their function.
- How is the structure of the spoon related to its function?

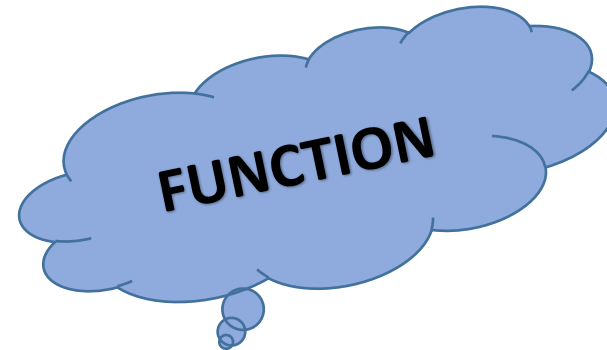
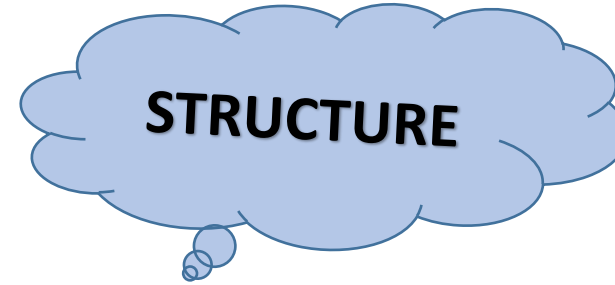


Every structure in a living thing has an important function. The function relies on the structure!

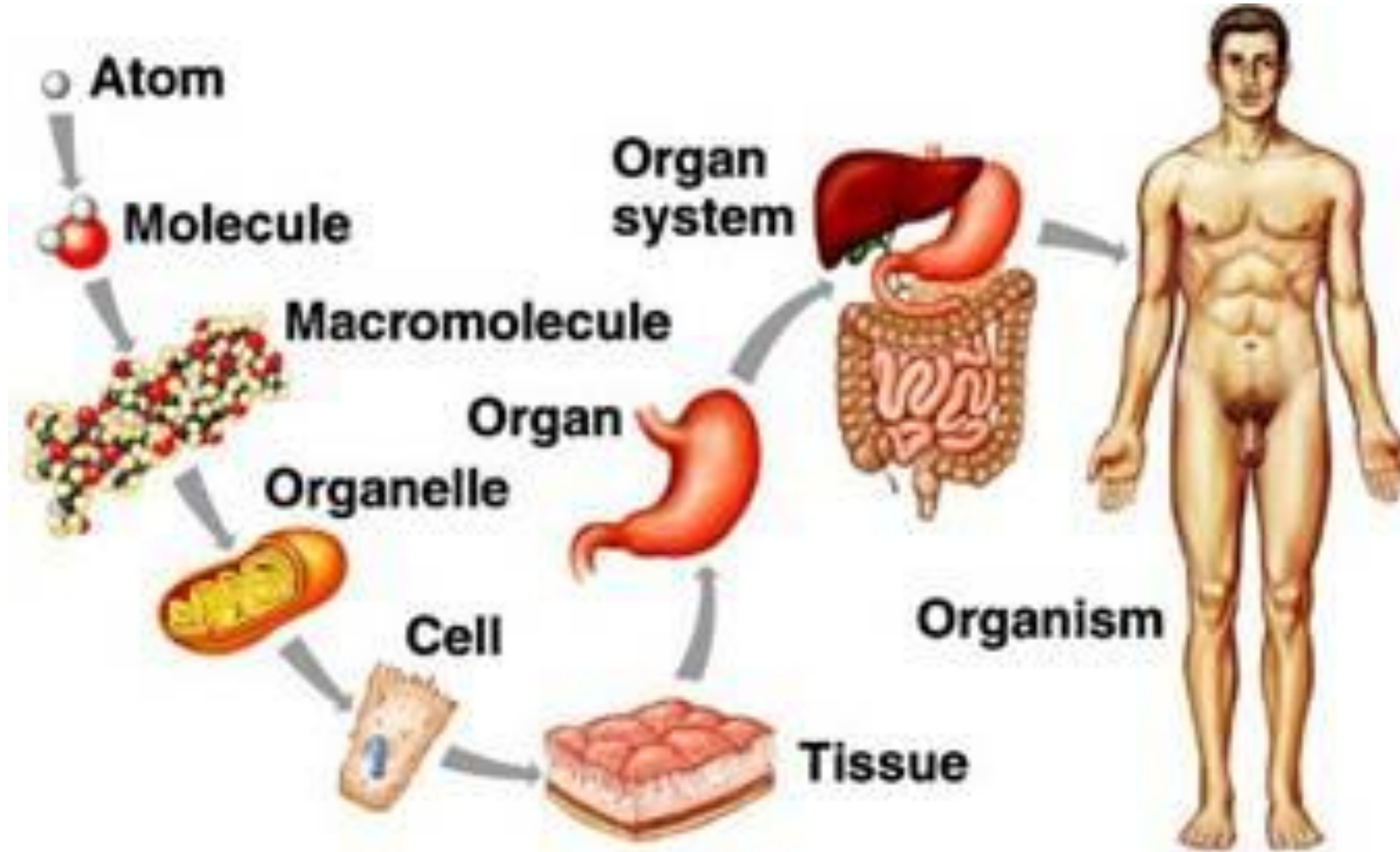
Anatomy & Physiology

- **Anatomy:**
 - the **shape** and arrangement of the parts that make up an organism.

- **Physiology:**
 - **how** the different parts of the organism works.



The Organization of a Human:



**We will be learning about the anatomy and physiology of
HUMAN SYSTEMS!**

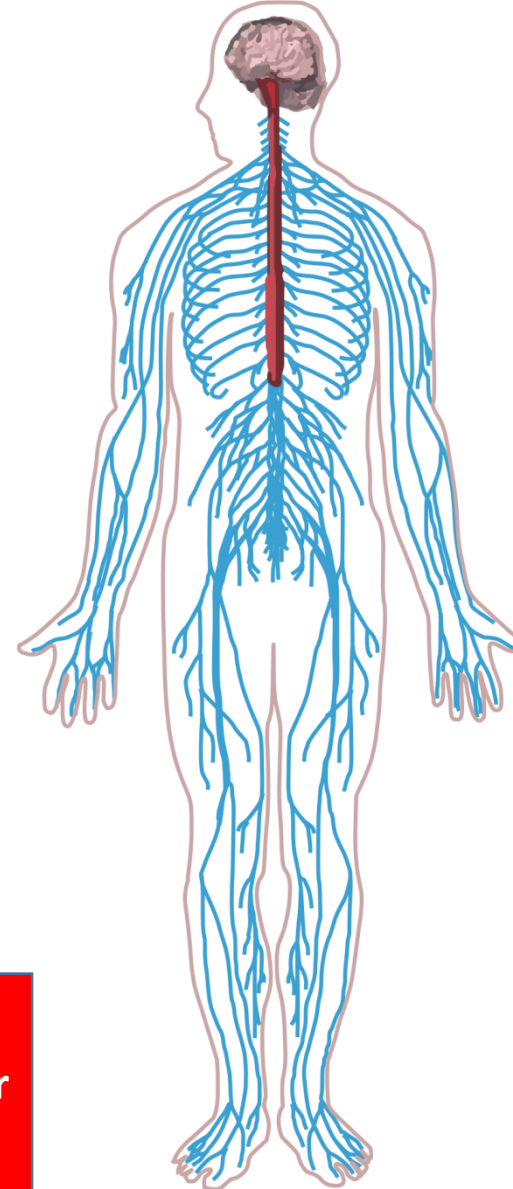
Humans have 11 Organ Systems

#1

Nervous System

- The reason we can physically “feel” things.
 - A network of cells specialized to detect, interpret, and respond to events occurring inside and outside of the body.
- Very complex.
- Includes the brain & spinal chord.

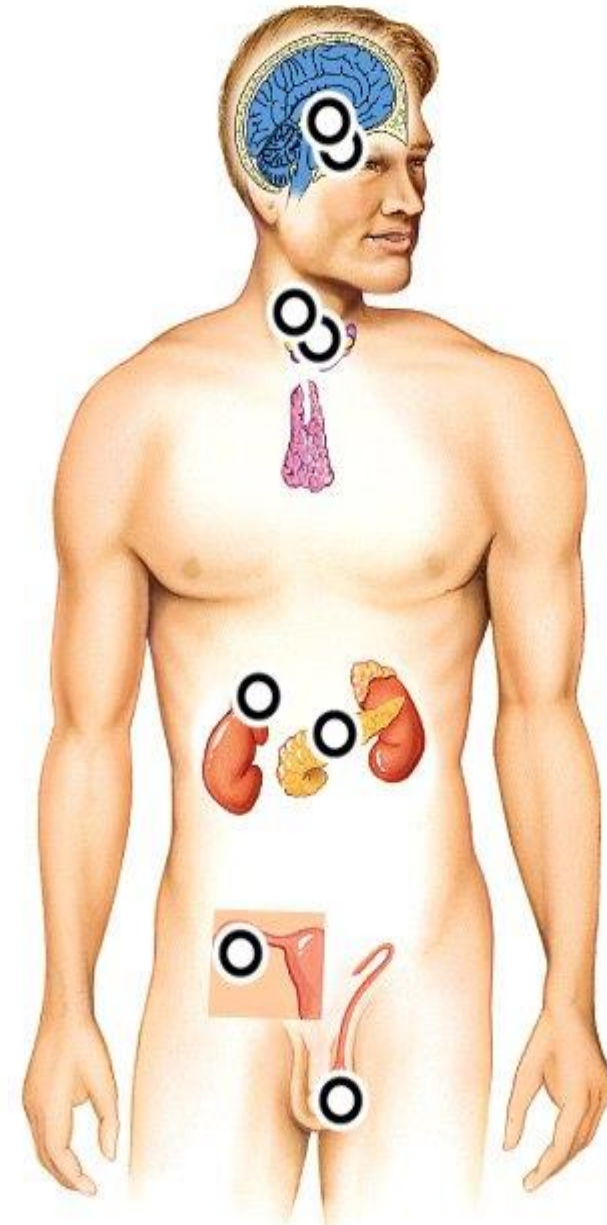
**Have you ever accidentally put your hand on something really hot (like a stovetop), removed your hand, and THEN felt pain?
Why do you think your body reacted in this way?**



Humans have 11 Organ Systems

#2 Endocrine System

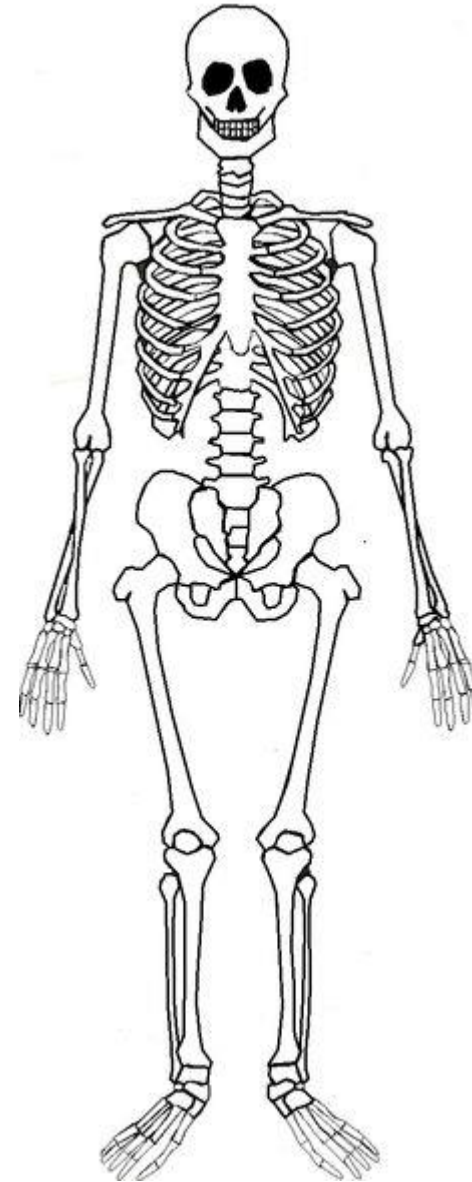
- Very complex.
- Regulates **hormones**
 - Metabolism (how fast your body can use food)
 - Sexual function
 - Sleep
 - Mood



Humans have 11 Organ Systems

#3 Skeletal System

- Includes:
 - Bones
 - Connective tissue
 - Ligaments
 - Cartilage
- Protect soft organs
- Points of attachment for muscles



Humans have 11 Organ Systems

#4 Muscular System

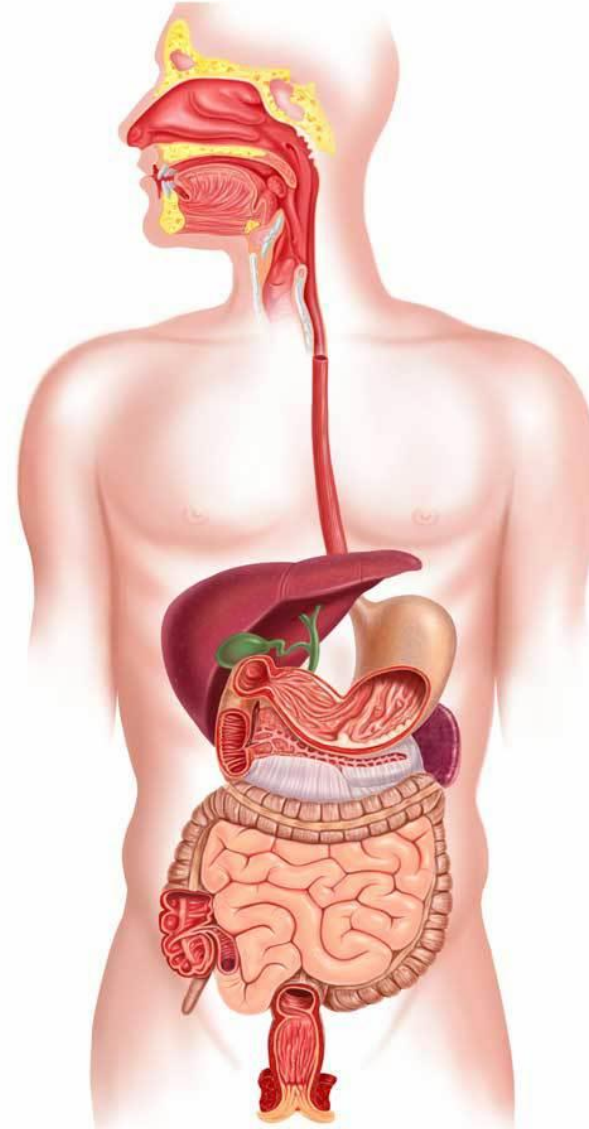
- Skeletal muscles
 - Move the skeleton
- Smooth muscles
 - Enable movement within organs
- Cardiac muscles
 - Enables heart to beat



Humans have 11 Organ Systems

#5 Digestive System

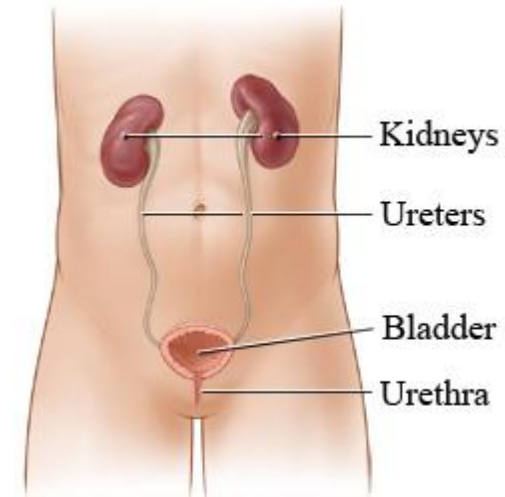
- Breaks down **food** into the molecules that they are made of.
- Body's cells use these molecules for:
 - Energy
 - Building blocks
- Anything that can't be used is eliminated from the body***



Humans have 11 Organ Systems

#6 Urinary System

- Filters and excretes dissolved waste molecules from blood.
 - A build-up of waste molecules in the body can be dangerous!
- Balances:
 - Amount of water
 - pH
 - Blood pressure



Humans have 11 Organ Systems

#7

Integumentary System

- Components:
 - Skin
 - Protects the body
 - Hair
 - Regulates Temperature
 - Hair on your head
 - Armpit hair
 - Keeps “bad stuff” out.
 - Nails

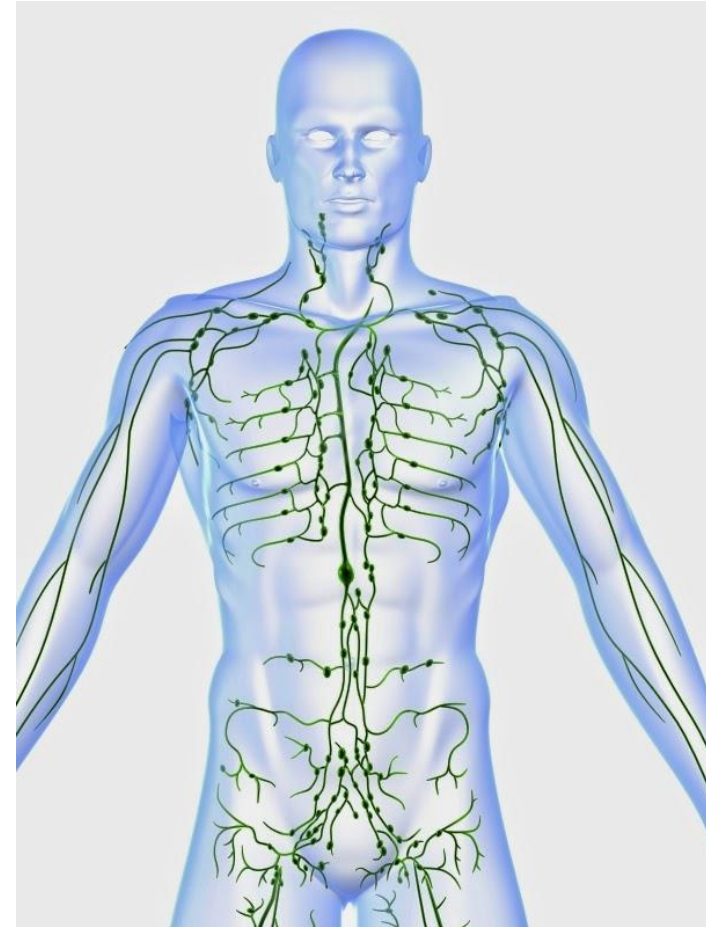


Humans have 11 Organ Systems

#8

Immune / Lymphatic System

- Protects your body from infection, injury, and cancer
- Very complex
- Works hard when you are sick

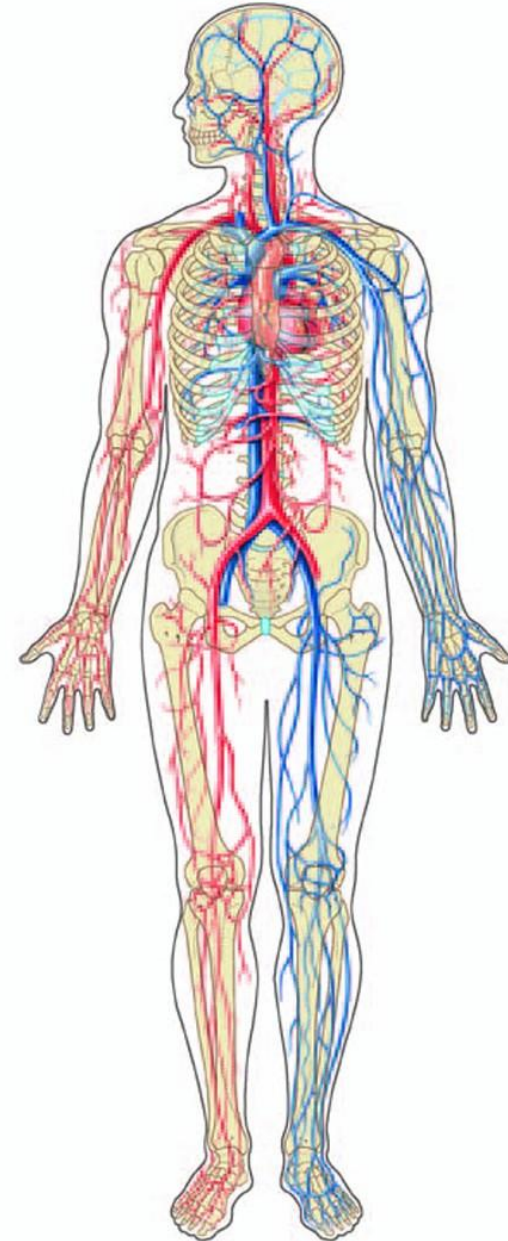


Humans have 11 Organ Systems

#9

Circulatory System

- Transports important substances throughout the body:
 - Food molecules
 - Oxygen
 - Carbon Dioxide



Humans have 11 Organ Systems

#10

Respiratory System

- Exchanges oxygen and carbon dioxide between the lungs and the atmosphere.
 - Oxygen is needed to release energy into body cells during cellular respiration.
 - Carbon dioxide is a waste product formed during cellular respiration.

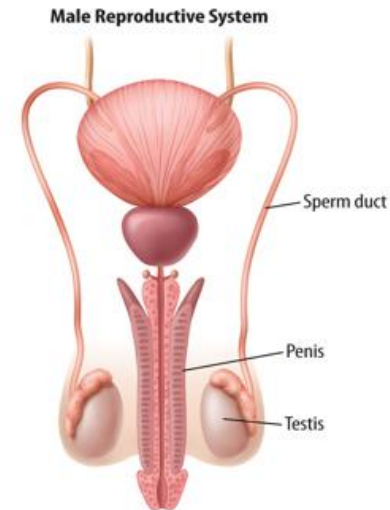


Humans have 11 Organ Systems

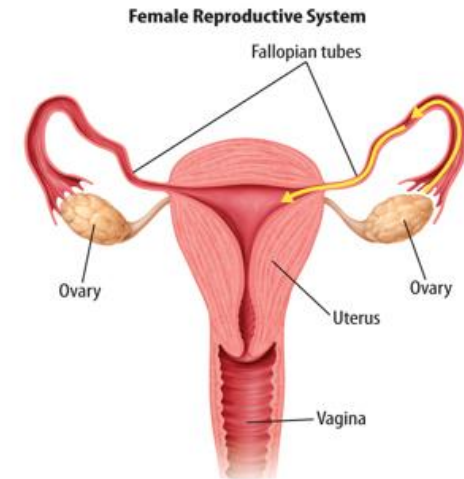
#11

Reproductive System

- Includes organs that make and transport sperm and eggs, as well as enable the female to give birth.



The organs of the male reproductive system produce sperm and deliver it to the female reproductive system.



The female reproductive system produces eggs and provides a place for a new human to grow and develop before birth.