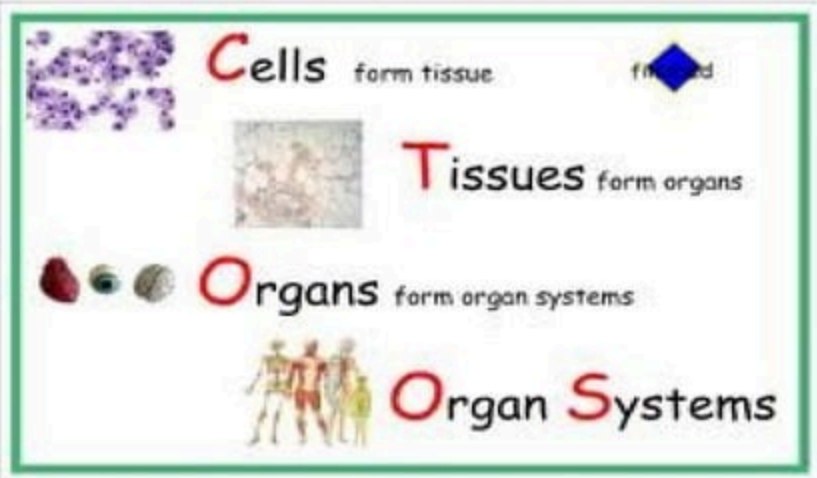
ORGAN SYSTEMS OF HUMAN BODY

Introduction

Cell- Basic structural and functional unit of a living organisms.

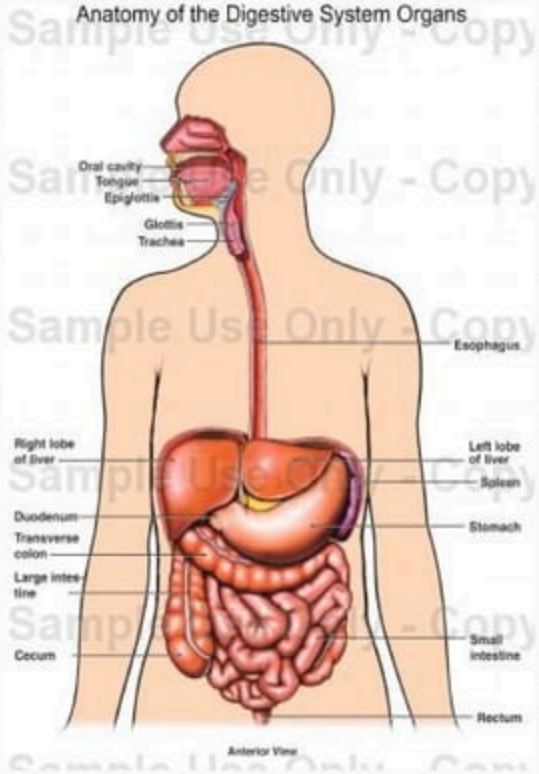


Types of Organ Systems

- Digestive system
- Respiratory system
- Circulatory system
- Skeletal system
- Muscular system
- Excretory system
- Nervous system
- Reproductive system

Digestive system

The food passes through a continuous canal which is divided into various compartments.

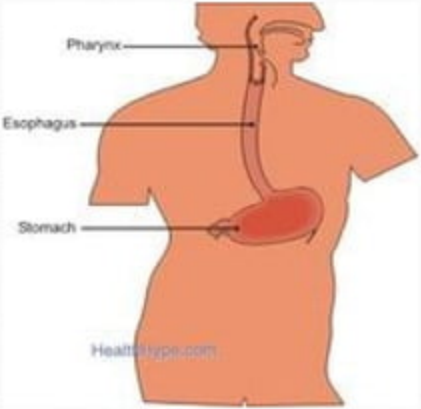


1.Buccal cavity

We chew the food with the teeth and break down mechanically into small pieces

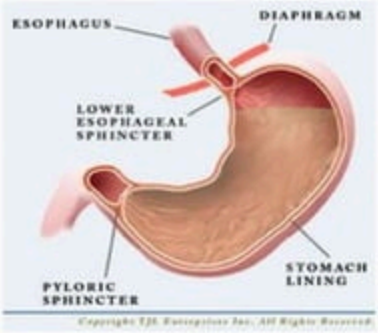
2. Foodpipe or Oesophagus

- The swallowed food passes into the foodpipe.
- Food is pushed down by movement of wall of the foodpipe.



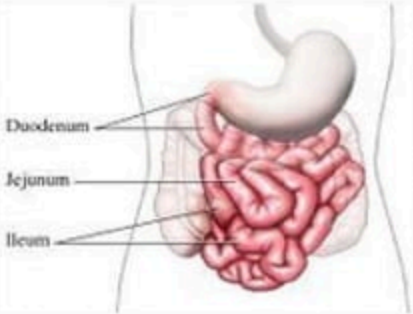
3.Stomach

- It receives food from the foodpipe at one end and opens into small intestine at the other.



4.Small intestine

- It receives secretions from the liver and the pancreas.
- The largest gland of the body that is liver secretes bile juice which helps in digestion of fats.



5.Large Intestine

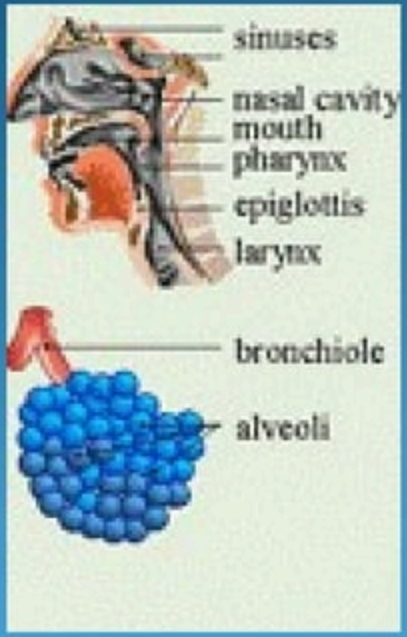
- It absorbs water and some salts from the undigested food material.the remaining waste passes into the rectum and remains there as semi-solid faeces.

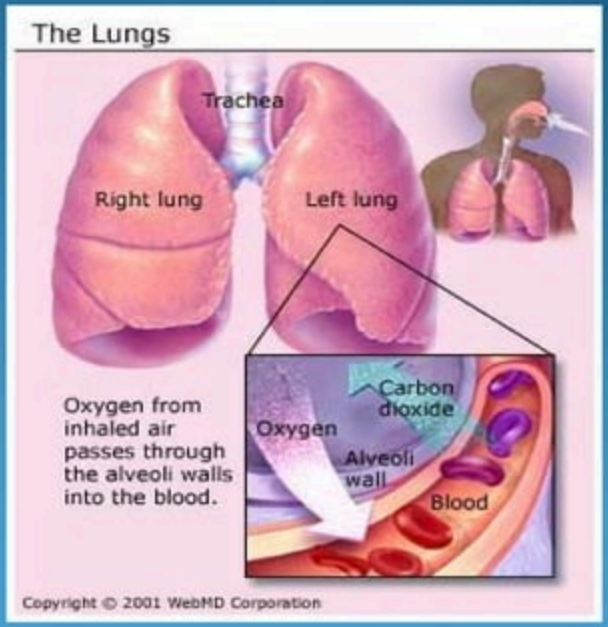


6.Anus

- The faeced matter is removed through the Anus from time to time.

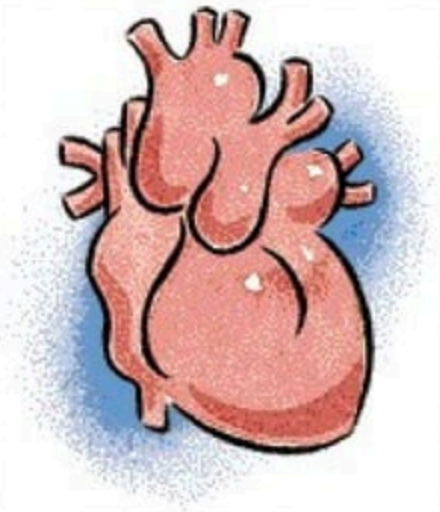
Respiratory System





The Circulatory System

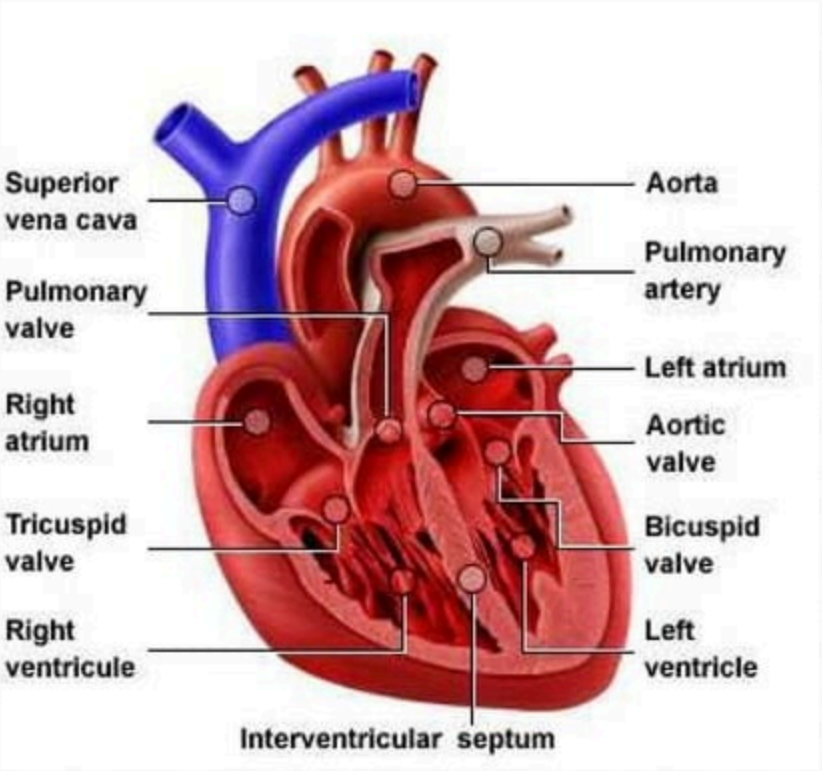
Transportation system by which oxygen and nutrients reach the body's cells, and waste materials are carried away.



Also carries substances called hormones, which control body processes, and antibodies to fight invading germs.

The Heart

- Size of your fist
- Thick muscular walls
- Divided into two pumps
- Each pump has two chambers
- Upper chamber - atrium receives blood coming in from the veins
- Lower chamber - ventricle squeezes blood out into the arteries


Superior vena cava
Aorta
Pulmonary artery
Pulmonary valve
Left atrium
Right atrium
Aortic valve
Tricuspid valve
Bicuspid valve
Right ventricule
Left ventricle
Interventricular septum

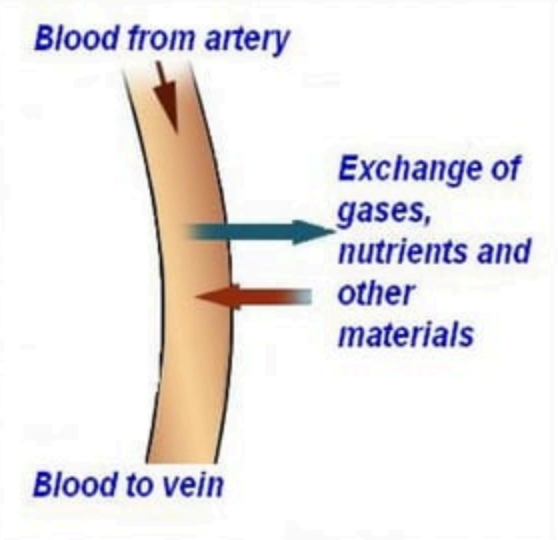
Blood

- Pumped by your heart.
- Travels through thousands of miles of blood vessels
- Carries nutrients, water, oxygen and waste products to and from your body cells.
- Made up of liquids, solids and small amounts of oxygen and carbon dioxide.

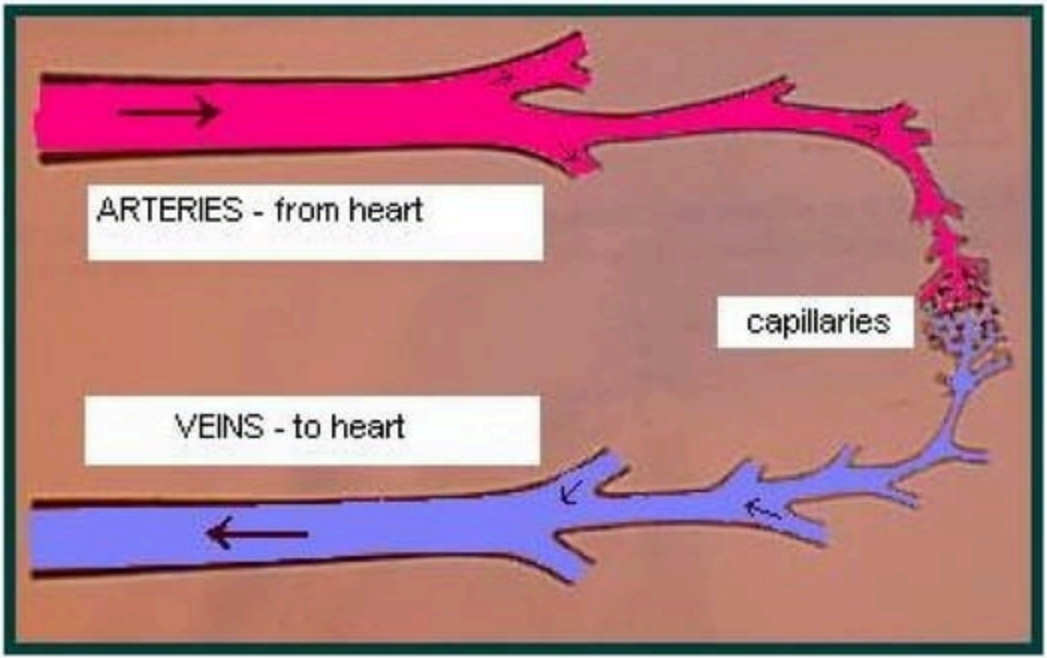
Blood

- **Red blood cells** carry oxygen from the lungs to all the cells of the body.
- Takes carbon dioxide and transports it back to the lungs
- About **5,000,000** Red Blood Cells in ONE drop of blood.
- **White blood cells** protect the body from germs
- Attack and destroy germs when they enter the body

Blood Vessels



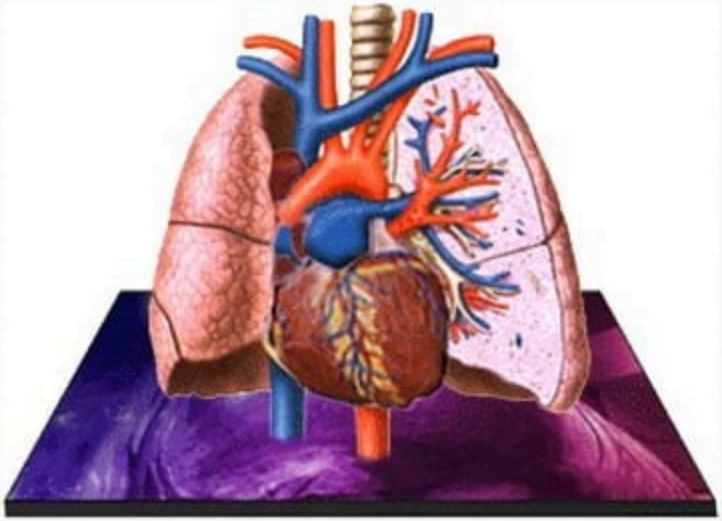
- Hollow tubes that circulate your blood
- There are three kinds of blood vessels: Arteries, Veins and Capillaries.


ARTERIES - from heart
capillaries
VEINS - to heart

3 Kinds of Circulation:

- Pulmonary circulation
- Coronary circulation
- Systemic circulation

Pulmonary Circulation



Movement of blood from the heart, to the lungs, and back to the heart again

Coronary Circulation

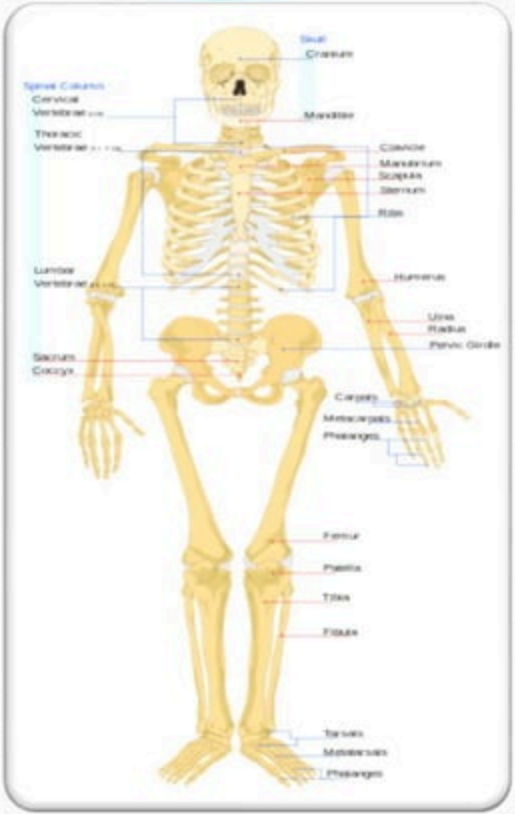


Movement of blood through the tissues of the heart

Systemic Circulation

Supplies nourishment to all of the tissue located throughout the body , except for the heart and lungs

The Skeletal System



•The skeleton is a rigid structure of bones which provides an anchor for the muscles ,skin and protects vital organs.



The skeleton

- The human body has **206 bones** as a adult ,when you are born you have **300 bones**.
- Over **230** moveable and semi-moveable joints in your body.
- Bones are connected to each other by ligaments.
- Organs are protected by the skeleton.
- The brain is protected by skull
- The heart, liver and lungs are protected by the rib and sternum.

The skull

- The **skull or cranium** is a protective cover of the brain ,and provides a structure for the face or head.
- The skull consists of 28 bones or vertebrae.
- The skull is made of many bones that are closely fitted together.

Arms

- The arms consists of **3 main bones** and 15 other little ones.



The Spine

- The spine has 33 vertebrae, the spine is not straight the skeleton forms an s-shape.

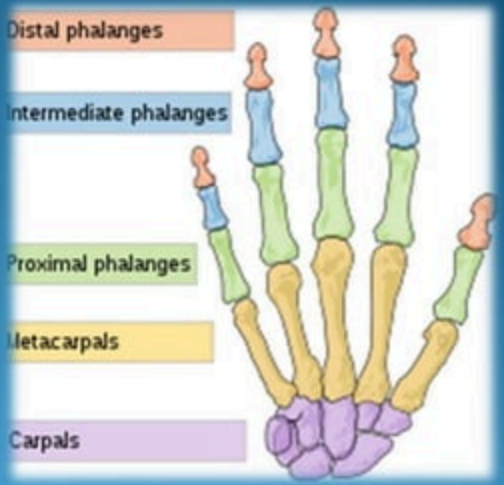
- There are **3 main parts** of the spine ,they are the **cervical, thoracic** and the **lumbar.**

- In the centre of the spine is the **spinal cord**.



Hands

- There are 27 bones and 5 fingers in each hand.
- The hand is very flexible with lots of joints.
- The thumb is the most flexible thanks to the saddle joint.



What are bones made of?

- Bones are made of calcium, mineral salt, cells and living parts your body.
- They are also made of **stringlike material** called the collagen.
- Bones have a red and yellow tube called the marrow.
- The marrow is a tube that makes red blood cells to replace the destroyed and worn out ones.
- The marrow also stores fat and sugar.
- An average of 2.6 million red blood cells are made every second by the marrow.
- The outer layer is called hard bone, the spongy bone is a honeycomb of bones cells with spaces between them.

The Ribcage

- The **ribs, the spine and the sternum** combine to make up the ribcage.



Legs_

- The human leg consists of **8 bones**, 4 per leg.

➢ The femur bone

➢ The tibia bone

➢ The fibula bone

➢ The patella bone



What are the possible diseases?

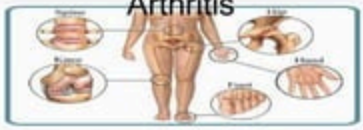
Osteoporosis



Rickets



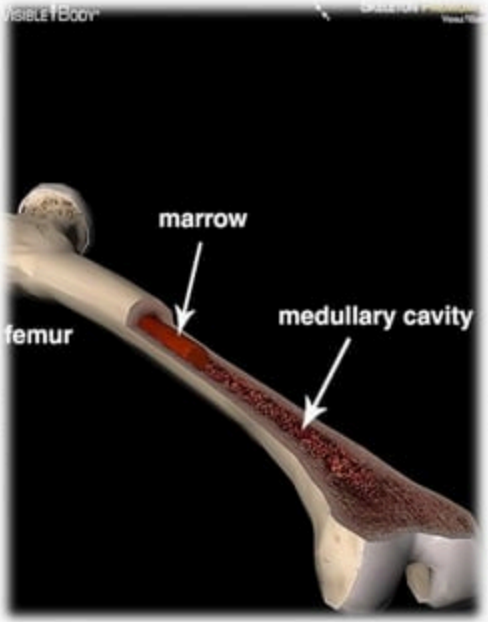
Arthritis



What's the strongest bone?

Femur bone:

- Longest and largest bone
- provide stability and strength
- solid bone



Most sensitive bones

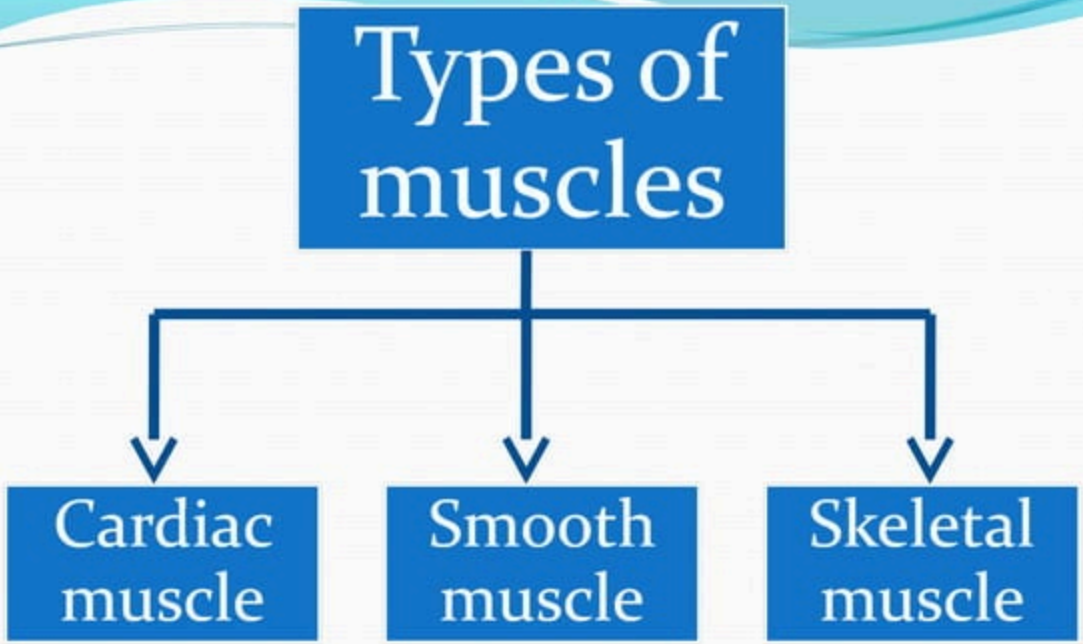
- Hips
- Shoulders
- Spine
- Thighs
- Sternum
- Skull

The Muscular system

Specialized tissue that enable the body and its part to move.

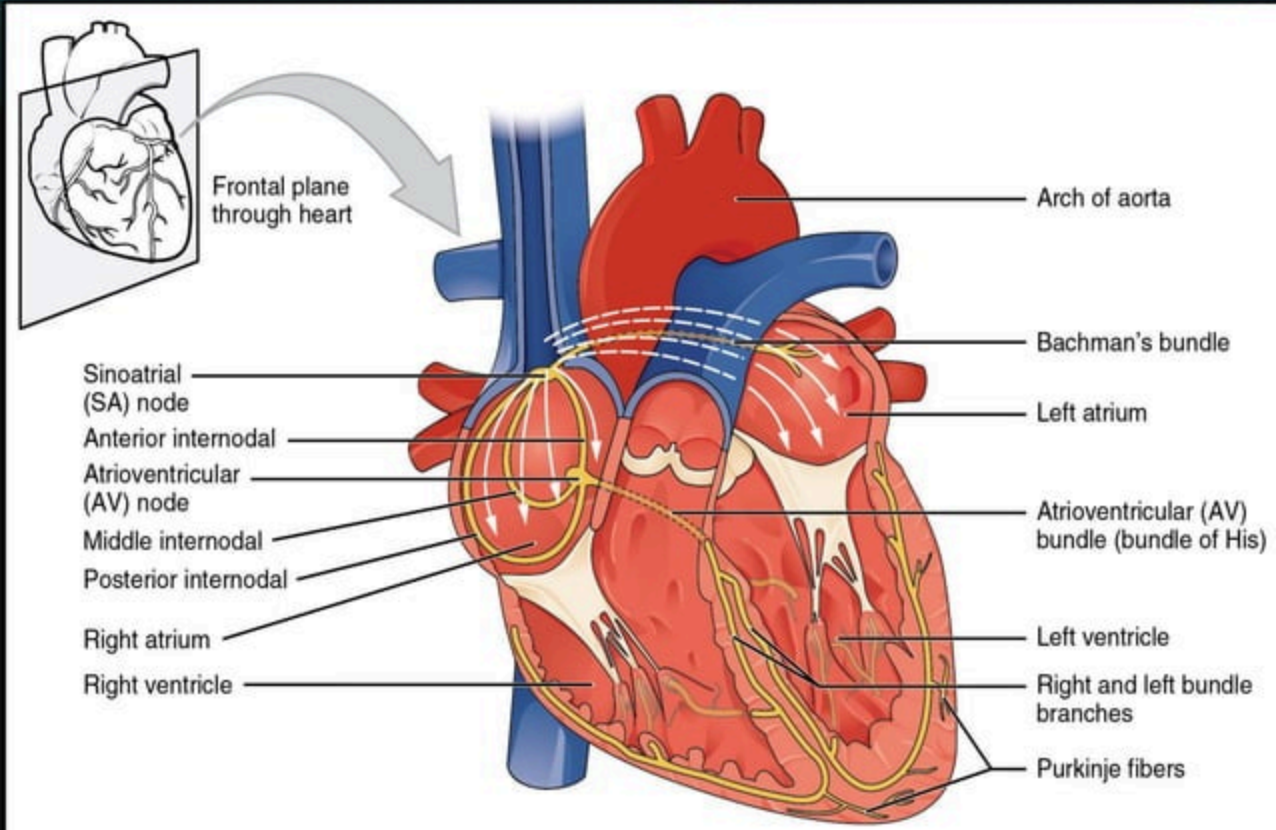
Functions of the Muscles

- Movement
- Maintenance of postures and muscles
- Heat production
- Protect the bones and internal organs


Types of muscles
Cardiac muscle
Smooth muscle
Skeletal muscle

Cardiac Muscle

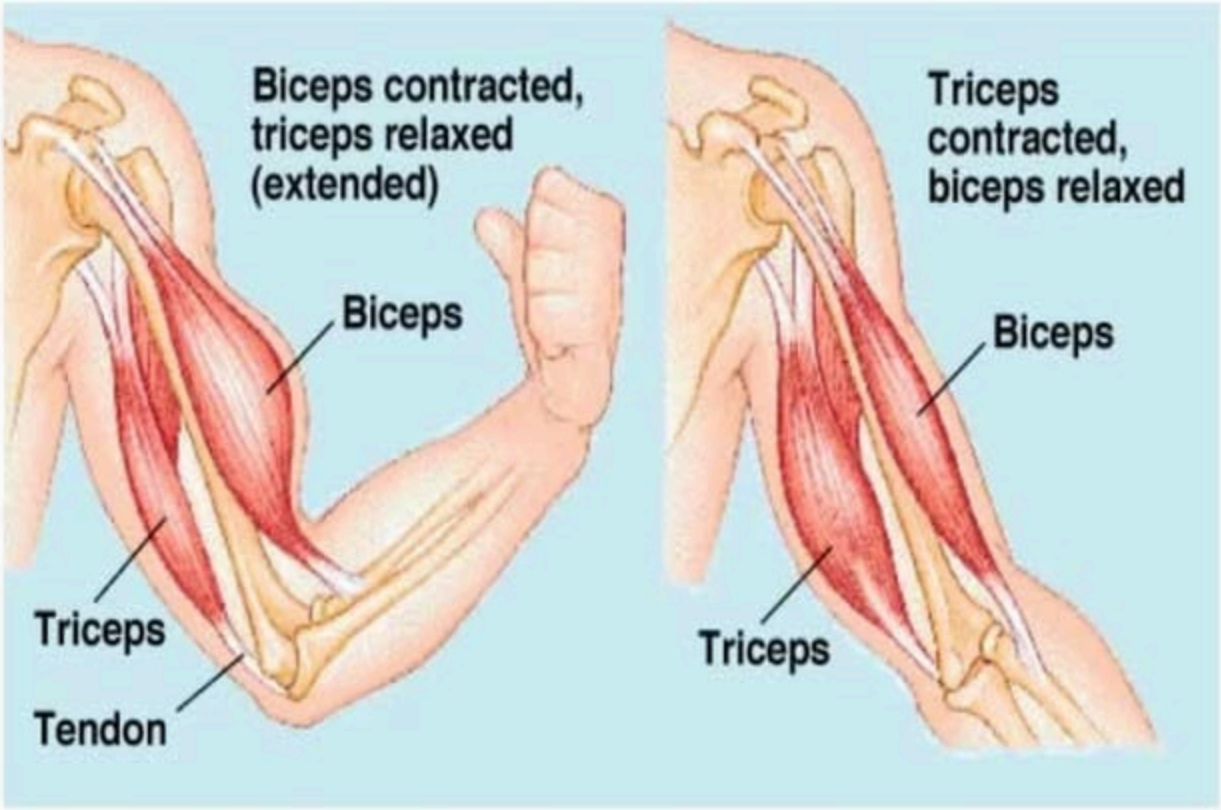
- Found ONLY in the heart.
- Contractions of the heart muscles pump blood throughout the body and account for the heartbeat.
- Healthy cardiac muscle NEVER fatigue.



Anterior view of frontal section

Smooth Muscle

- They fatigue..But very slowly.
- Helps in circulation of the blood.
- Lining of blood vessels.
- Controls digestion.
- Controls breathing.



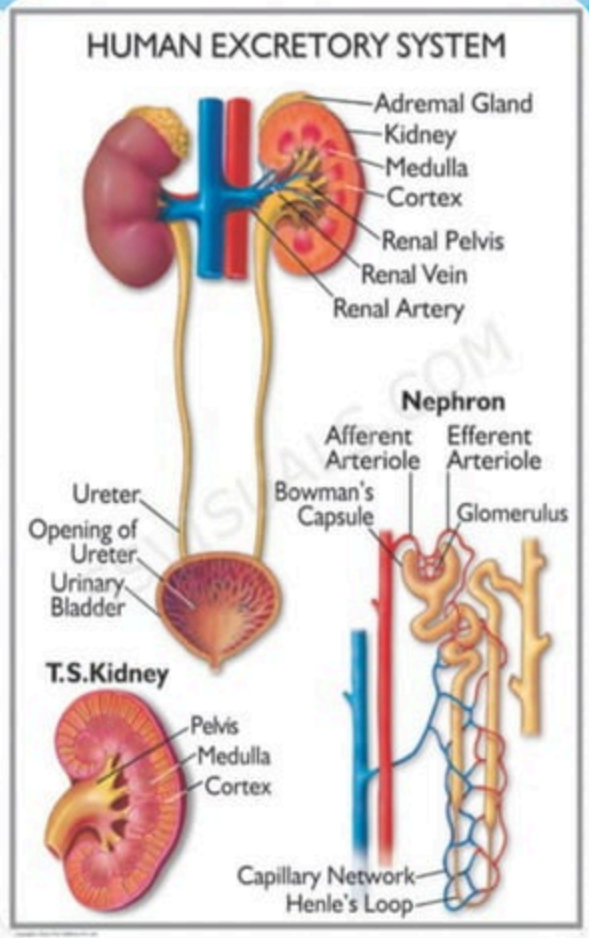
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Skeletal Muscles

- Attached to skeleton by tendons.
- Causes movement of bones at the joints.
- They also do fatigue.
- Can be moved at will-Voluntarily.
- Fibers are long and cylindrical.


Neck muscles
hold the head up and move it
in all directions.
Shoulder muscles
raise and lower the arms.
Triceps
straighten the arm.
Biceps
bend the arm.
Abdominal muscles
move the torso and help
with breathing.
Thigh muscles
move the lower leg.
Calf muscles
pull the heel up and point
the toes.
Shin muscles
help move the foot up and
down and side to side.

Excretory system



- The process by which the unwanted substances and metabolic wastes are eliminated from the body.
- Various systems in the body are involved
- Digestive system excretes food residues in the from of feces.
- Some bacteria and toxic substances also are excreted through feces.

- **Lungs** remove carbon dioxide and water vapor.
- **Skin** excretes water, salts, and some wastes. It also remove heat from the body.
- **Liver** excretes many substances like bile pigments, heavy metals, drugs, toxins, bacteria etc though bile.

- Although various organs are involved in removal of wastes from the body, their excretory capacity is limited.
- The renal system or urinary system is the one having maximum capacity of excretory function and so, it plays the major role.

Process of urinary system

- Kidneys produce the urine.
- Ureters transports the urine to urinary bladder.
- Urinary bladder stores the urine until it is voided.
- Urine is voided from bladder through urethra.

RINAL SYSTEM
OR
URINARY SYSTEM

Renal System

- Renal system includes:
- 1) pair of kidneys
- 2) urethras
- 3) urinary bladder
- 4) urethra

- Skin, liver, lung, large intestine are also part of excretory system.

SKIN

- SKIN useful to maintain body temperature.
- Excess heat is lost from the body through skin by radiation, conduction. Sweat glands of the skin play active part in heat loss by secreting sweat.
- Skin can excrete small quantities of wast material.