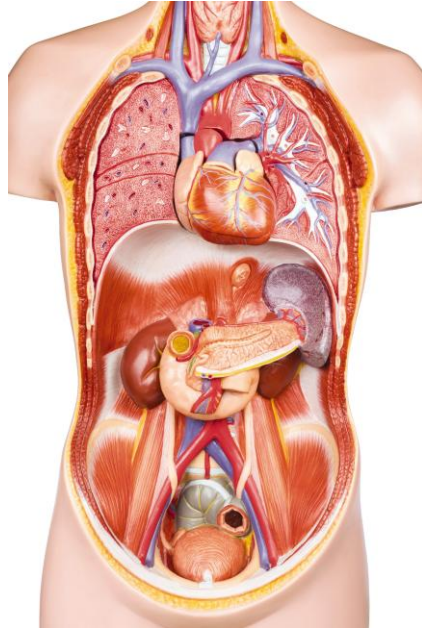


HUMAN BODY ANATOMY

FIRST STAGE



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Lecture 1**Anatomical direction of human body**

- **Surface anatomy (also called superficial anatomy and visual anatomy**
- **it is a branch of gross anatomy that examines shapes and markings on the surface of the body on the skin as they are related to deeper structures.**
- **It is essential in locating and identifying anatomic structures prior to studying internal gross anatomy**
- **It helps to locate the affected organs /structures/region in disease process.**

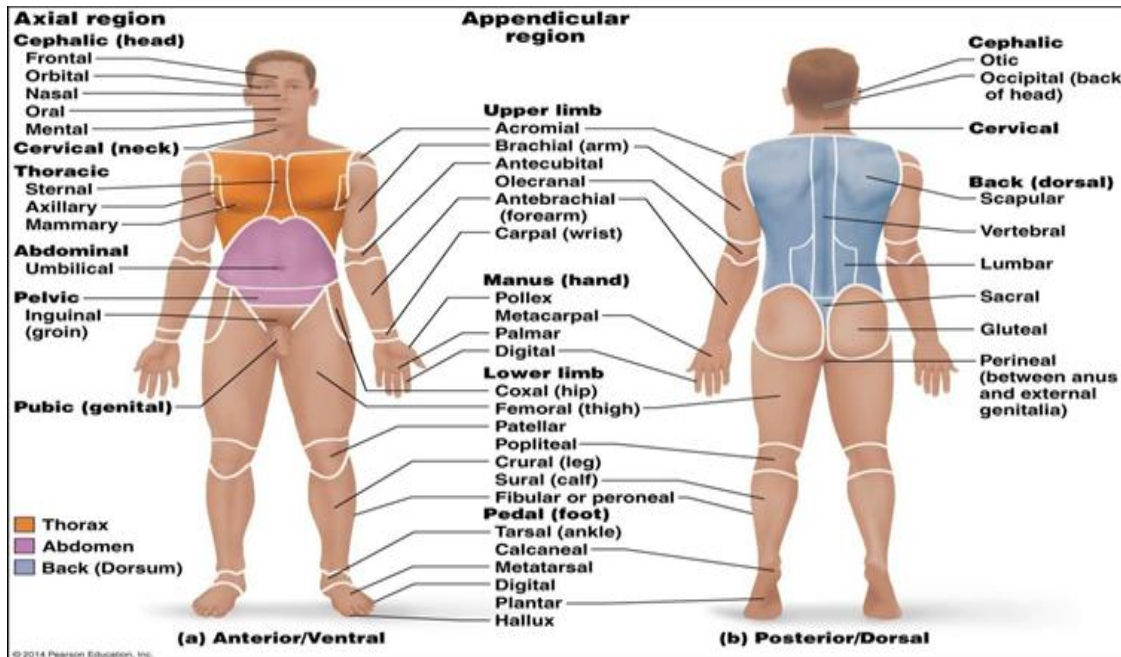
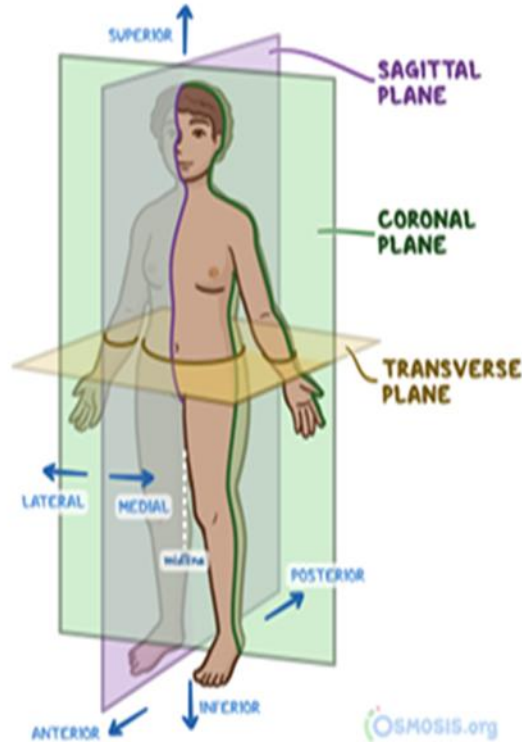
The vertical line

- **is an important imaginary vertical reference line on the anterior chest wall that passes from the mid-point of the clavicle down to the mid-inguinal point, halfway between the anterior superior iliac spine and the pubic symphysis**
- *A horizontal line is a straight line that is drawn from right to left or left to right**

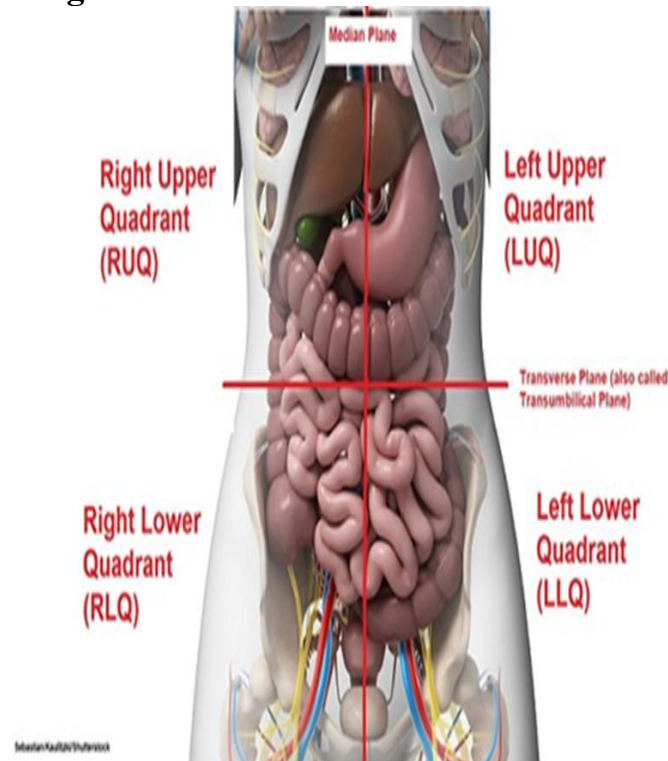


Anatomical position

- Refers to the positioning of the body when it is standing upright and facing forward with each arm hanging on either side of the body, and the palms

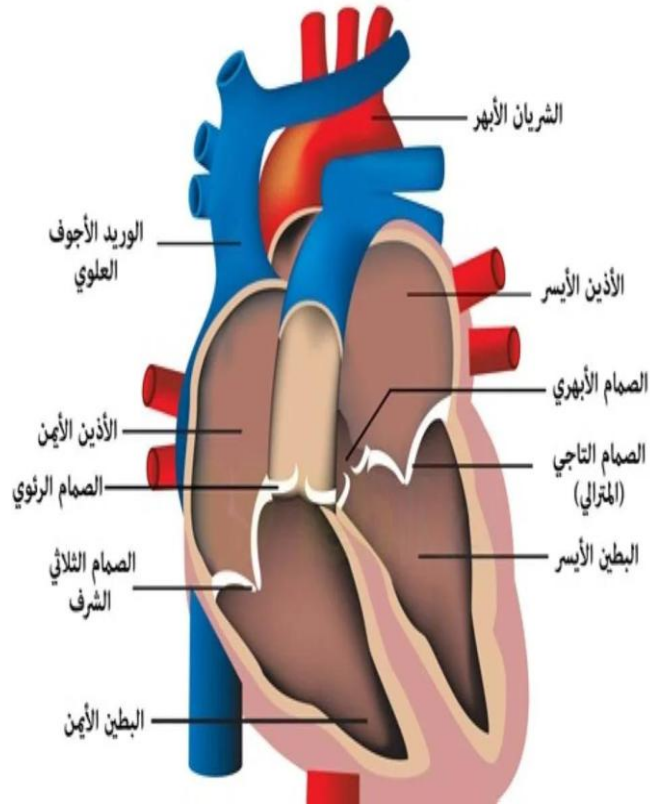


- **What are the planes of the abdomen? There are two vertical planes and two horizontal planes that are used to separate the nine segments. The vertical planes are known as the left and right midclavicular lines. They run from the midpoint in the clavicle caudally towards the midpoint of the inguinal ligament**



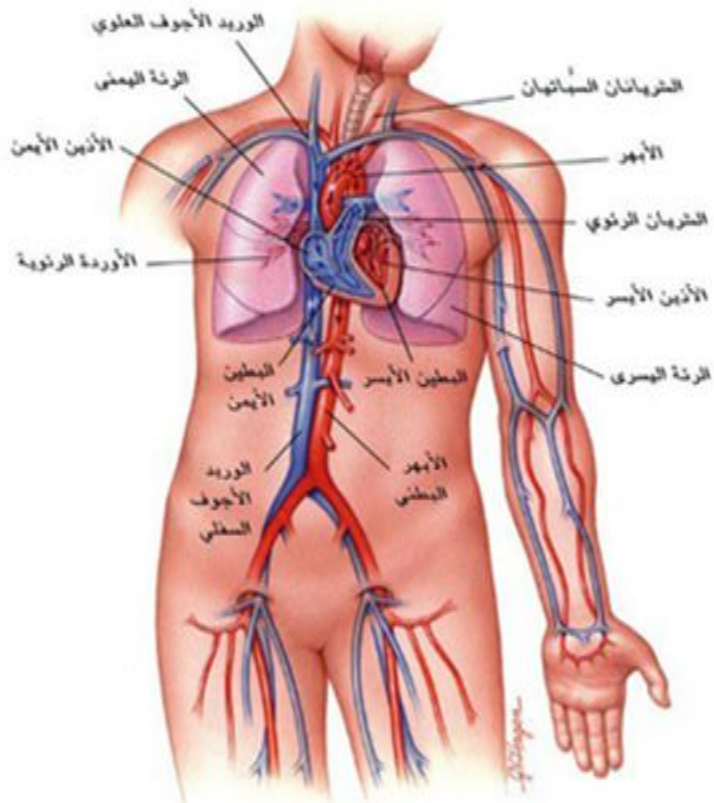
- • **Borders & Surface Landmarks:**
- • **Right border** → from 3rd right costal cartilage to 6th right costal cartilage (close to sternum).
- • **Left border** → from 2nd left costal cartilage to the apex (5th intercostal space, midclavicular line).
- • **Superior border** → joining 2nd right costal cartilage to 2nd left costal cartilage.
- • **Inferior border** → from 6th right costal cartilage to apex.
- • **Apex of the heart** → lies at the 5th left intercostal space, just medial to the midclavicular line.

اقسام قلب الانسان



Surface Anatomy Heart

- **Location:**
- The heart lies obliquely in the thoracic cavity within the mediastinum, behind the
- sternum and the 2nd to 6th costal cartilages



- **1. Anterior chest wall with heart outline (showing costal cartilages 2–6).**
- **2. Diagram of heart borders (right, left, superior, inferior).**
- **3. Position of apex beat at the 5th intercostal space, left midclavicular line**

Lecture2

Skeleton of upper limb

- **The skeleton of the upper limb is composed of 32 bones. The upper extremity can be further subdivided into two main parts - the shoulder girdle and the free upper limb. The shoulder girdle, also called the pectoral girdle, is composed of two paired bones - clavicle and scapula.**



The shoulder girdle, also called the pectoral girdle, is composed of two paired bones - clavicle and scapula.

The free upper limb can be further subdivided into three smaller portions:

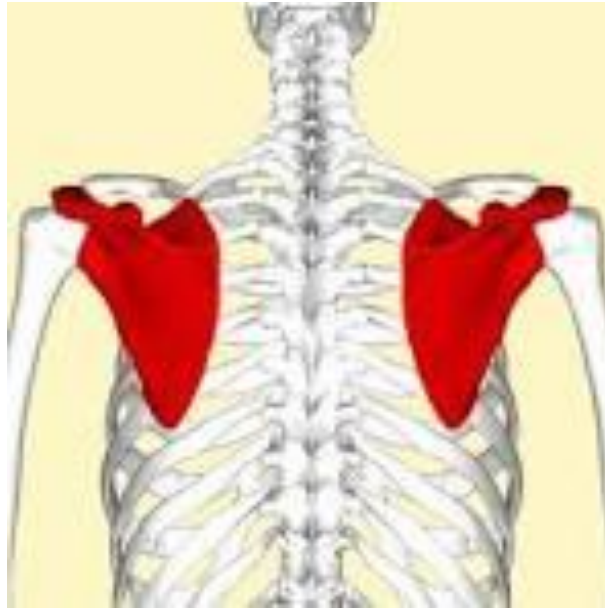
Upper arm - it is formed by a single bone called the humerus;

Lower arm - consists of two bones that are known as the radius and ulna;

Hand - the terminal part of the upper limb; it contains most of the bones and is composed of 27 bones, including 8 carpal bones, 5 metacarpal bones, and 14 phalanges.

Scapula

The scapula, also called the shoulder blade, is a relatively large, flat, triangular-shaped shoulder girdle bone. It is found in the upper thoracic region at the back of the trunk lying posterior to the thoracic cage. The scapula directly articulates with the humerus and clavicle, forming the glenohumeral (shoulder) and acromioclavicular joints.



- * **Surface of scapula**
- * **The scapula has two surfaces - anterior (ventral or costal) surface and posterior (dorsal) surface.**
- * **The anterior surface is also known as the ventral or costal surface. It faces the posterior thoracic wall and is slightly concave. This surface is smoother than the posterior surface, as most of it is taken up by a large, shallow concavity named the subscapular fossa. The subscapularis muscle fills the fossa.**



Clavical

The clavicle,

also known as the collarbone, is a slender, somewhat s-shaped long bone that participates in forming the shoulder girdle. It has two curves that give the bone its shape. When facing forward, its medial portion appears convex, while its lateral aspect is concave. In cross-section, the clavicle appears oval-to-circular.

The clavicle can be subdivided into the following three parts:

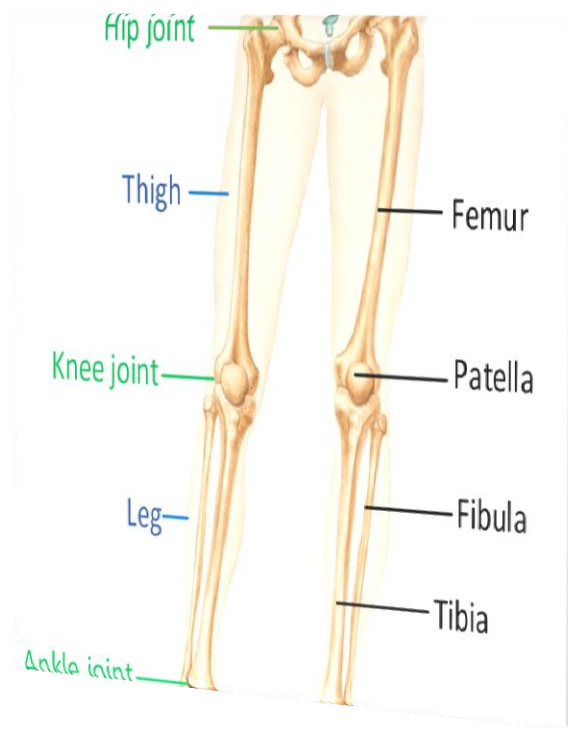
- 🕒 **Sternal end** - rounded medial end of the clavicle; it appears more massive than the lateral end and is flared like a trumpet; it is easily palpable along its length;
- 🕒 **Body or shaft** - refers to the middle part of any long bone;
- 🕒 **Acromial end** - superoinferiorly flattened, broad lateral end.





The lower limb contains 30 bones. These are the femur, patella, tibia, fibula, tarsal bones, metatarsal bones, and phalanges . The thigh is that portion of the lower limb located between the hip joint and knee joint.

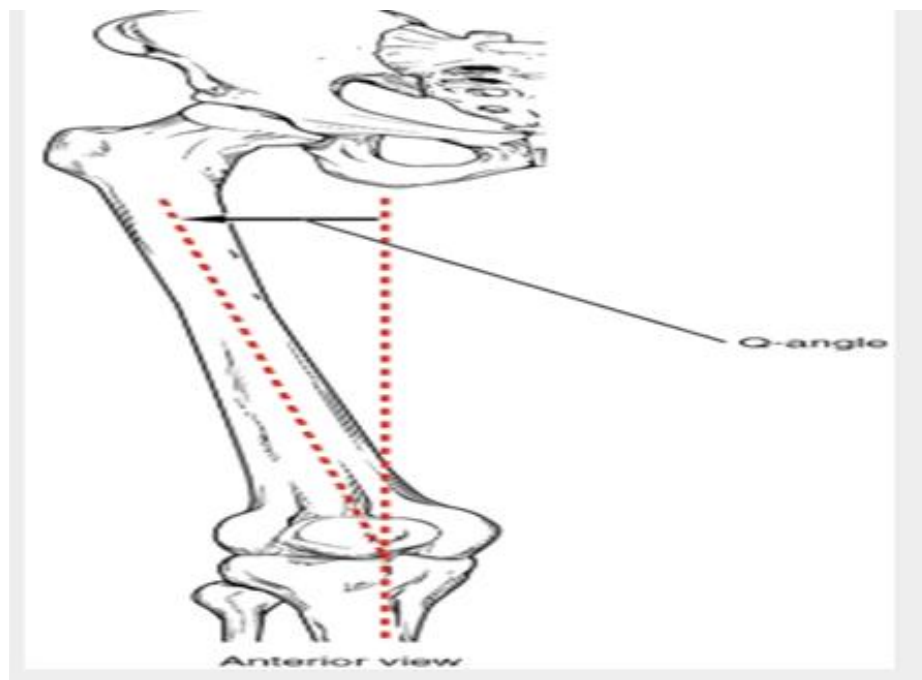
The leg is specifically the region between the knee joint and the ankle joint. Distal to the ankle is



These are the femur, patella, tibia, fibula, tarsal bones, metatarsal bones, and phalanges

The Q-Angle

The Q-angle is a measure of the amount of lateral deviation of the femur from the vertical line of the tibia. Adult females have a larger Q-angle due to their wider pelvis than adult males



femur is the single bone of the thigh.

patella is the kneecap and articulates with the distal femur.

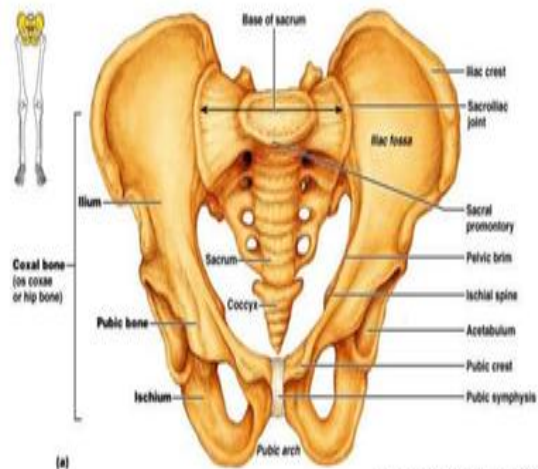
tibia is the larger, weight-bearing bone located on the medial side of the leg,

fibula is the thin bone of the lateral leg.

What is the pelvis and lower limb skeleton?

pelvic girdle – Comprises the sacrum and the hip bone. The hip bone in turn comprises the ilium, pubis and the ischium. Patella – The knee cap or patella is a bone (sesamoid) which is located anterior to the junction of tibia and femur.

OSTEOLOGY OF LOWER LIMBS



Dr. NDAYISABA CORNEILLE

CEO of CHG

MBChB, DCM, BCS



There are three bones of the pelvis:

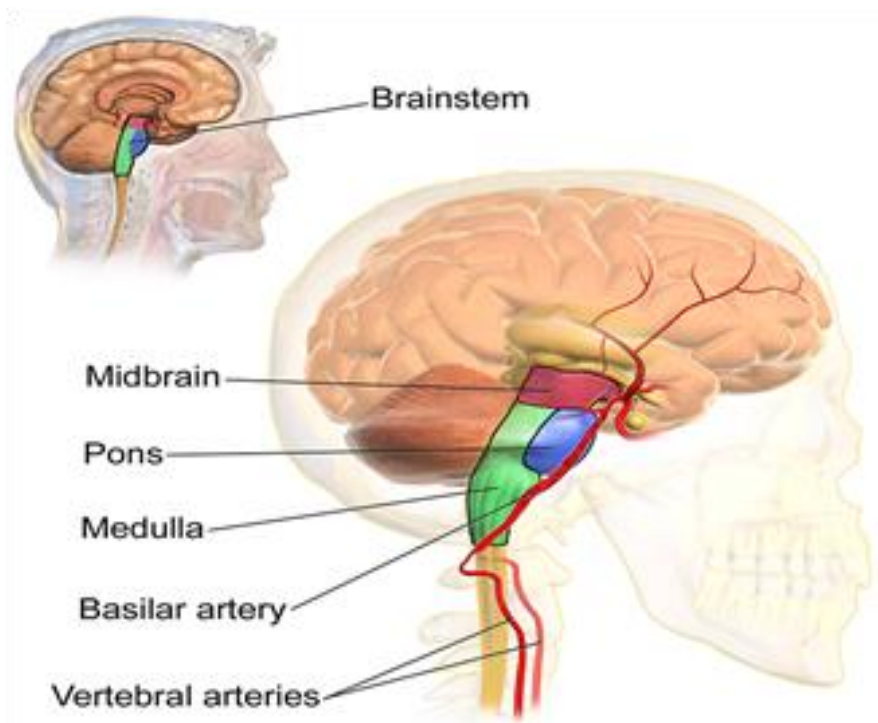
the hip bone, sacrum and coccyx. These bones connect the axial skeleton to the lower limbs, and therefore play a role in bearing the weight of the upper body. These bones also act as attachments for many muscles and ligaments within the pelvis and lower limbs

what is the biggest bone?

The femur is the longest, strongest, and heaviest bone in the human body.

Lecture3**Brain****What is midbrain in anatomy?**

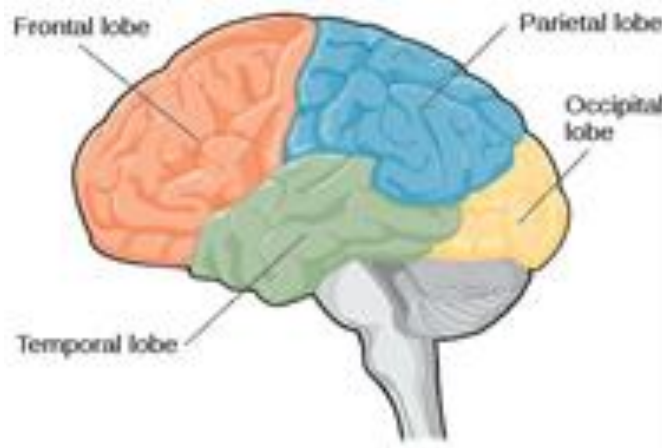
The midbrain is the topmost part of the brainstem, the connection central between the brain and the spinal cord. There are three main parts of the midbrain - the colliculi, the tegmentum, and the cerebral peduncles.

**What are the 3 functions of the midbrain?**

The midbrain consists of the centre for visual and auditory reflexes. It is involved in the processing of visual and auditory information. It regulates eye movement and pupil dilation.

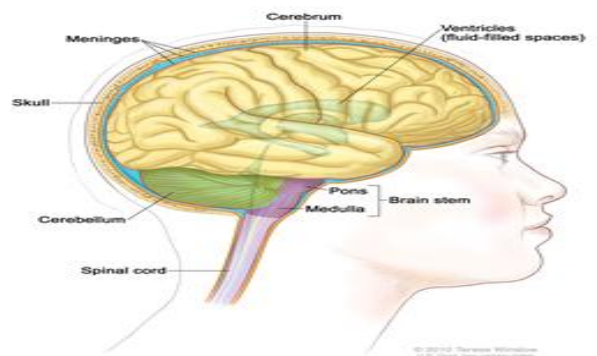
What are the 4 lobes of the midbrain?

- 1-frontal
- 2-parietal
- 3- temporal
- 4-occipital lobes



Cerebral hemispheres

One half of the cerebrum, the part of the brain that controls muscle functions and also controls speech, thought, emotions, reading, writing, and learning. The right hemisphere controls the muscles on the left side of the body, and the left hemisphere controls the muscles on the right side of the body



What is cerebellar hemisphere?

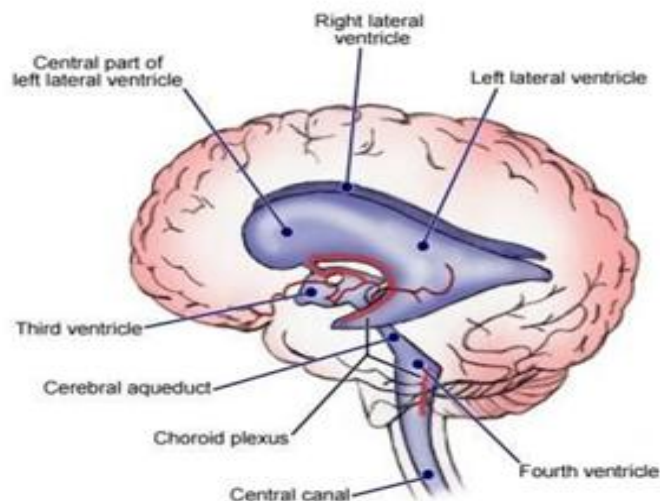
The cerebellar hemispheres function in motor planning, the timing of the onset of movements, and their coordination. Cerebrocerebellum mainly receives input from the primary cerebral motor cortex and the supplementary motor areas via the contralateral corticopontocerebellar

What are the 4 lobes of the cerebral hemisphere?

The cerebrum consists of two cerebral hemispheres the outer layer called the cortex (gray matter) and the inner layer (white matter). There are four lobes in the cortex, the frontal lobe, parietal lobe, temporal lobe, occipital lobe. This review article will focus on the functions of the cerebral cortex

Ventricular of the brain

The cerebral ventricular system is made up of 4 ventricles that include 2 lateral ventricles (1 in each cerebral hemisphere), the third ventricle in the diencephalon, and the fourth ventricle in the hindbrain. Inferiorly, it is continuous with the central canal of the spinal cord.



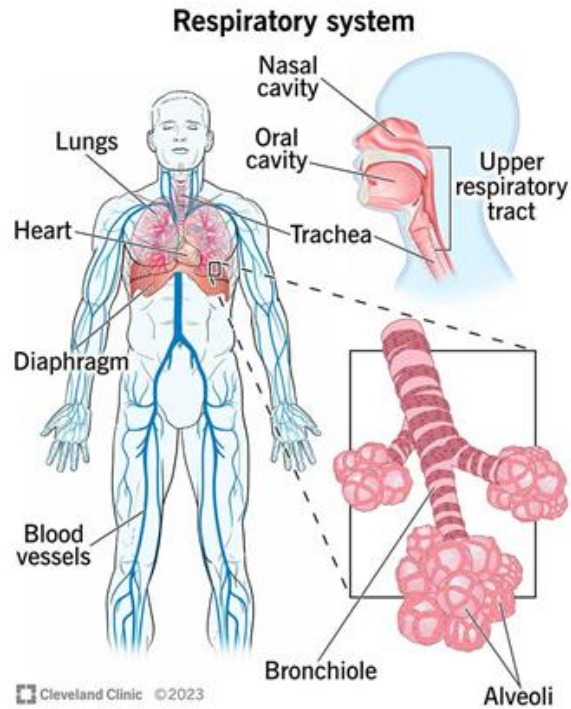
Lecture 4

Respiratory system

What is the respiratory system?

Your respiratory system is the organs and structures in your body that allow you to breathe. It includes your lungs, nose, mouth and the tubelike structures (airways) that connect them. You also have muscles and blood vessels that support your respiratory system, and ribs to protect it. These parts work together to bring oxygen into your body when you inhale and get rid of carbon dioxide when you exhale.

Your respiratory system is made up of your lungs, airways (trachea, bronchi and bronchioles), diaphragm, voice box, throat, nose and mouth. Its main function is to breathe in oxygen and breathe out carbon dioxide. It also helps protect you from harmful particles and germs and allows you to smell and speak.



What are the parts of the respiratory system?

The main organs of your respiratory system are your lungs. But your respiratory system has many different parts that work together to help you breathe. Parts of your respiratory system include your:

- 1) Nose and nasal cavity.
- 2) Mouth and oral cavity.
- 3) Sinuses.
- 4) Pharynx (throat).
- 5) Larynx (voice box).
- 6) Trachea (windpipe).
- 7) Bronchi (large airways).
- 8) Lungs.
- 9) Diaphragm

Upper respiratory tract

Your upper respiratory tract brings air into your body and helps move it toward your lungs. It adds moisture to the air you breathe in. Your respiratory tract starts with your nose and mouth, where you pull air into your body. Other parts of your upper respiratory tract include your nasal cavity, sinuses (hollow areas in your cheeks and forehead) and larynx

Lower respiratory tract

Your lower respiratory tract consists of your trachea, bronchi and lungs. Your trachea, bronchi and bronchioles (small airways) make up your tracheobronchial (pronounced “tray-key-oh-BRON-key-uhl”) tree, a series of increasingly smaller tubes that transport airWhat blood vessels supply the respiratory system?

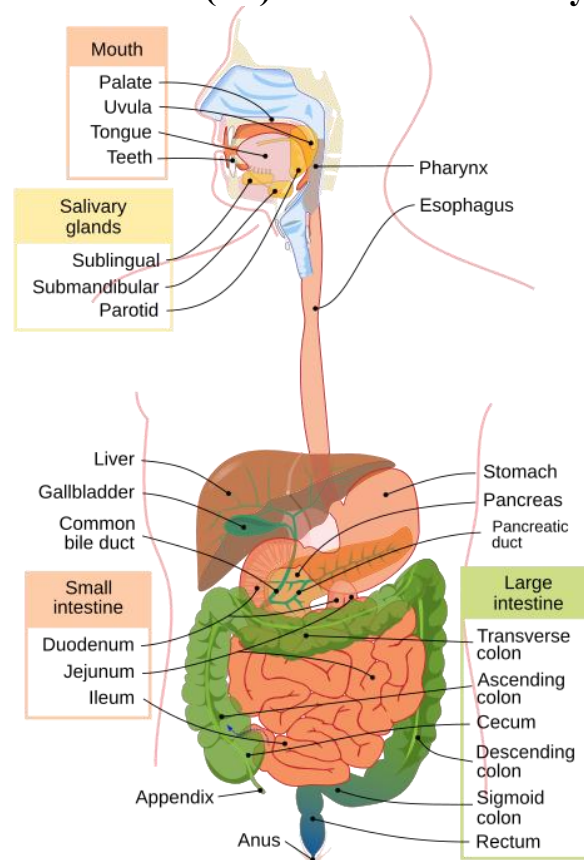
What are the pulmonary arteries? Your pulmonary arteries are blood vessels that carry oxygen-poor blood from the right side of your heart to your lungs. In medical terms, the word “pulmonary” means something that affects your lungs.

from your upper respiratory tract to small air sacs in your lungs (alveoli). (It looks a bit like an upside-down tree

Lecture 5**Digestive System**

The digestive system is responsible for breaking down food, absorbing nutrients, and eliminating waste.

It consists of the gastrointestinal (GI) tract and accessory organs.

**Main Parts of the Digestive System**

- **1. Mouth**
- **2. Pharynx**
- **3. Esophagus**
- **4. Stomach**
- **5. Small intestine**
- **6. Large intestine**
- **7. Anus**

Accessory Organs

- **These organs assist digestion:**
 - **Salivary glands**
 - **Liver**
 - **Gallbladder**
 - **Pancreas**

Mouth and Pharynx

- **The mouth is the entry of the digestive tract where mechanical and chemical digestion begins.**
- **The pharynx connects the mouth to the esophagus.**

Esophagus and Stomach

- **The esophagus transports food to the stomach using peristaltic movements.**
- **The stomach mixes food with gastric juices to form chyme**



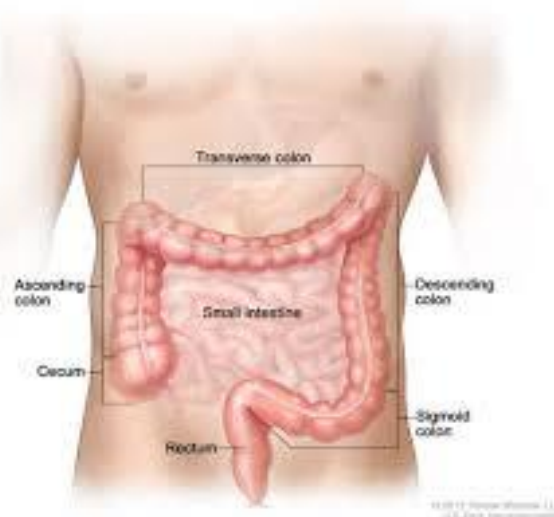
Small Intestine

- It is the main site of digestion and nutrient absorption.
- Divided into three parts: duodenum, jejunum, and ileum



Large Intestine

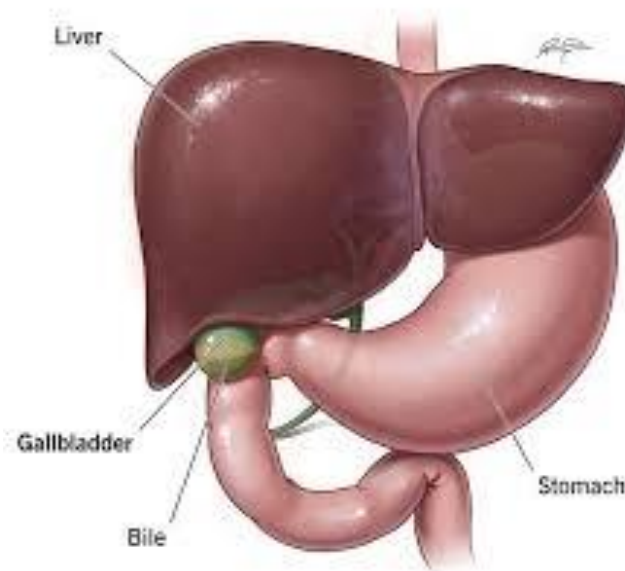
- Responsible for water absorption and formation of feces.
- Includes cecum, colon, rectum, and anus.



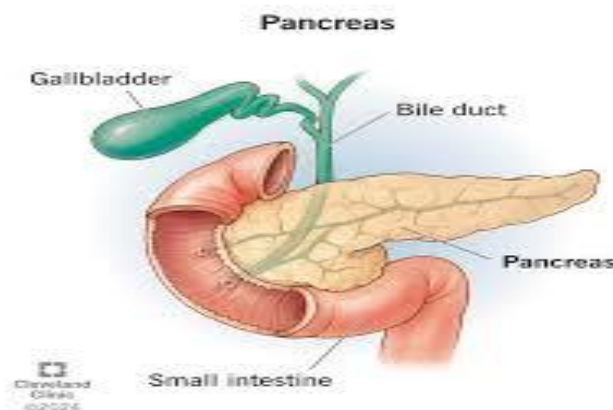
Liver and Gallbladder

- The liver produces bile which helps digest fats.
- The gallbladder stores and releases bile into the small intestine.

Pancreas



- **Pancreas** The pancreas secretes digestive enzymes and bicarbonate.
- It also regulates blood sugar by releasing insulin and glucagon.



Lecture 6

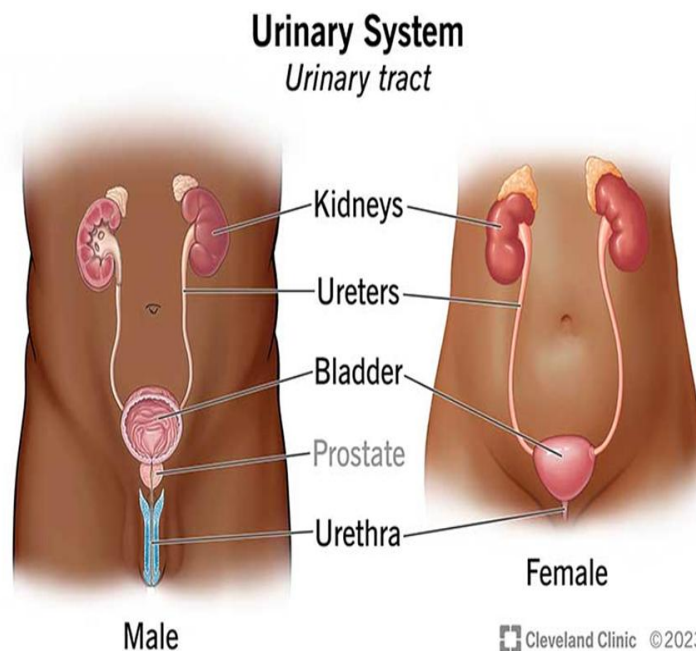
Anatomy of urogenital system

The urogenital system includes the urinary system and reproductive organs responsible for excretion and reproduction

2. Urinary System Components

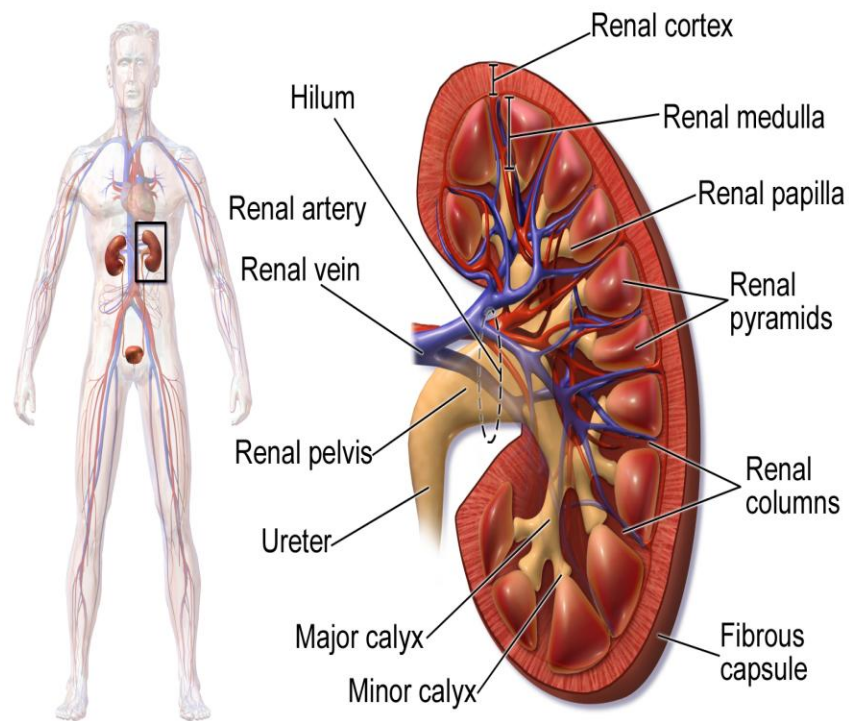
Main organs:

1. kidneys,
2. ureters, urinary bladder,
3. urethra.



Kidney Structure

- Each kidney filters blood to produce urine. Key parts: cortex, medulla, and renal pelvis.



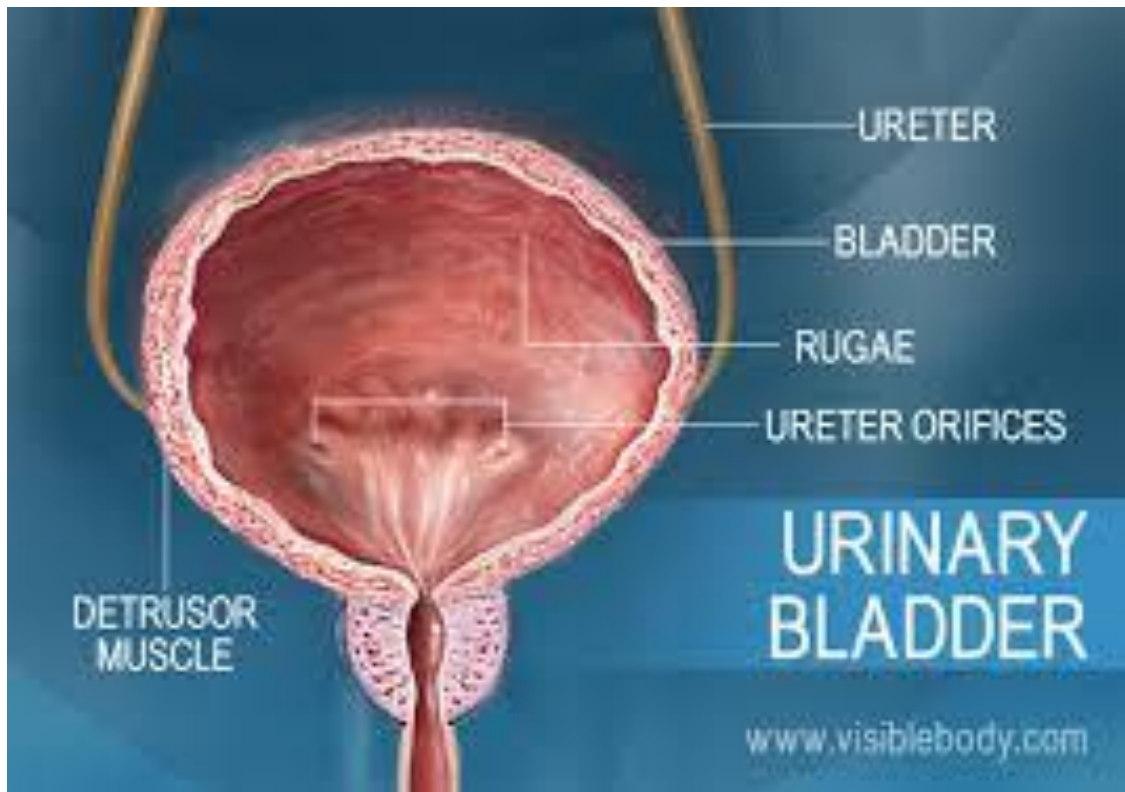
Kidney Anatomy

Ureter and Urinary Bladder

Ureters carry urine from the kidneys to the bladder, which stores urine until excretion.

Urethra

- The urethra is a tube that carries urine from the bladder to the body exterior.



Male Reproductive System

1. testes,
2. vas deferens,
3. seminal vesicles,
4. prostate gland,
5. and penis

Female Reproductive System

- 1. ovaries,**
- 2. fallopian tubes,**
- 3. uterus,**
- 4. vagina.**

Urogenital Connections

- Some structures share pathways**

(e.g., male urethra serves both urinary and reproductive functions).

Clinical Notes

- 1. Common disorders: urinary tract infection (UTI), kidney stones, infertility.**
- 2. The urogenital system plays vital roles in excretion and reproduction. Understanding its anatomy helps in clinical practice.**