



SNS COLLEGE OF ALLIED HEALTH SCIENCES
SNS Kalvi Nagar, Coimbatore - 35
Affiliated to Dr MGR Medical University, Chennai



DEPARTMENT : PHYSICIAN ASSISTANT

COURSE NAME : ANATOMY

UNIT : URINARY SYSTEM

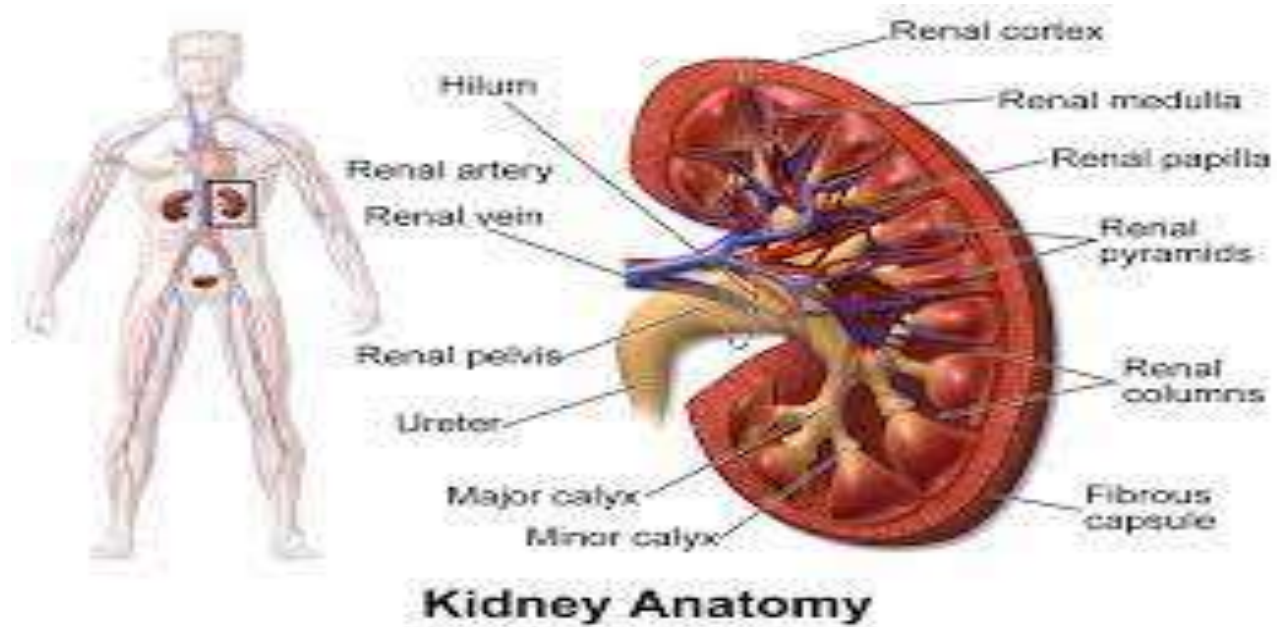
TOPIC : KIDNEYS



KIDNEY



- Kidneys are a pair of excretory organs situated on the posterior abdominal wall, one on each side of the vertebral column, behind the peritoneum
- They remove waste products of metabolism and excess of water and salts from the blood, and maintain its pH

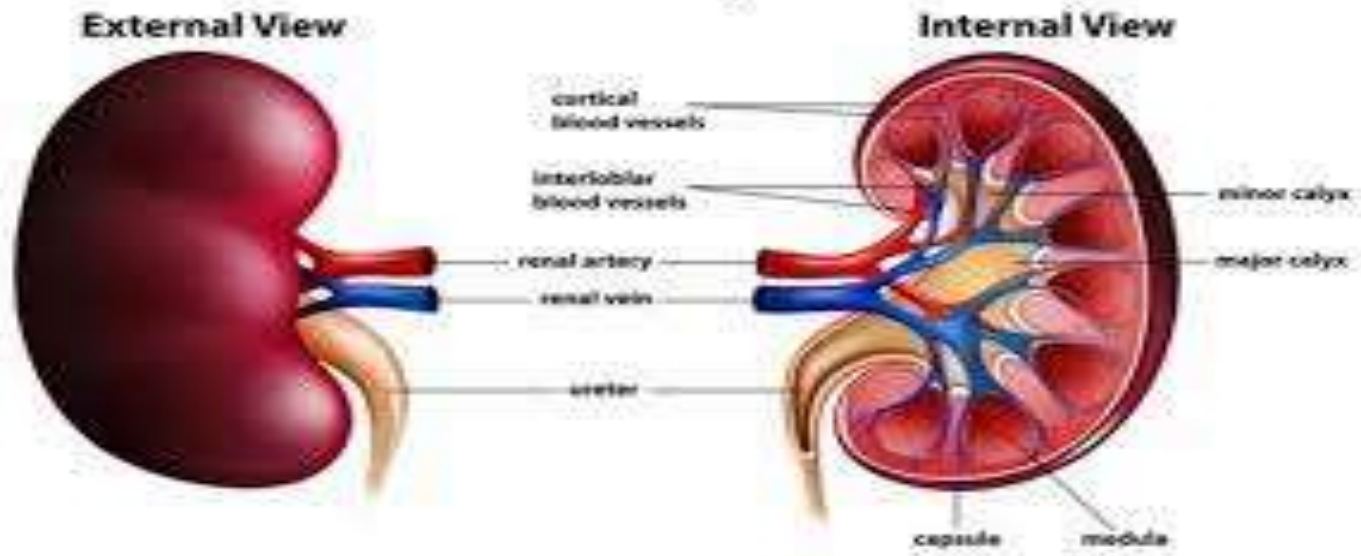




- ✦ Bean shaped
- ✦ Weight
 - ✦ Females 135g
 - ✦ Males 150g
- ✦ Poles, surfaces, borders & hilum



Human Kidney Anatomy

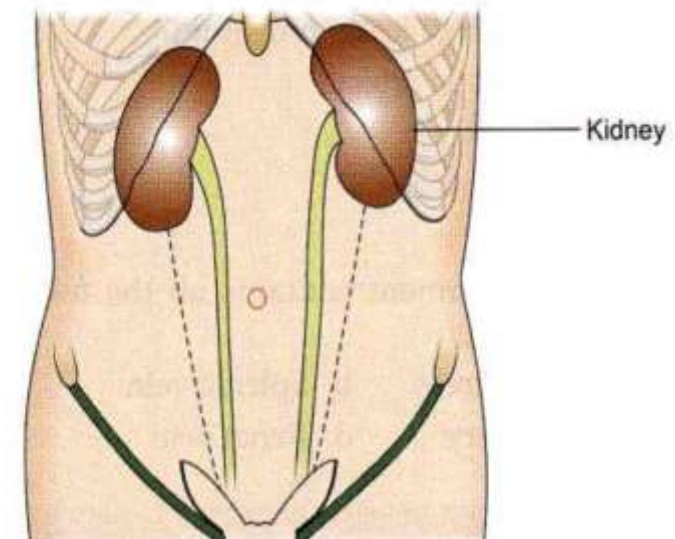




LOCATION



- The kidneys occupy the epigastric, hypochondriac, lumbar and umbilical regions
- Vertically they extend from the upper border of twelfth thoracic vertebra to the centre of the body of third lumbar vertebra
- The right kidney is slightly lower than the left, and the left kidney is a little nearer to the median plane than the right





Relations of kidney with other organs and structures



kidney has :

- ❖ Anterior and posterior surfaces
- ❖ Lower and upper extremities
- ❖ Medial and lateral border



Anterior surfaces right kidney



It's relations

□ Upper part

❖ With suprarenal glands

❖ With the liver

❖ With duodenum

□ Lower part

❖ With right colic flexure of ascending colon

❖ With small intestine



CAPSULES / COVERINGS



- Fibrous capsule
- Perirenal/perinephric fat
- Renal fascia
- Fascia of Gerota
 - Anterior – fascia of Toldt
 - Posterior – fascia of Zucherkandl
- Pararenal/paranephric fat



TWO POLES OF THE KIDNEY



- The upper pole is broad and is in close contact with the corresponding suprarenal gland
- The lower pole



TWO SURFACES



The anterior surface is said to be irregular and the posterior surface flat, but it is often difficult to recognize the anterior and posterior aspects of the kidney by looking at the surfaces



TWO BORDERS



- The Lateral Border is Convex
- The Meddial Border is Concave
- Its Middle part shows a depression the Hilus or Hilum



BLOOD SUPPLY



Abdominal aorta at L2 level



Renal artery



5 segmental arteries



Each segmental artery



Lobar artery



Interlobar artery



↓
Arcuate artery
↓
Interlobular artery
↓
Afferent arteriole
↓
Glomerulus
↓
Efferent arteriole



Peritubular plexus



Interlobular vein



Lobar vein



Segmental vein



5 Segmental vein



Renal vein



Inferior vena cava





LYMPHATIC DRAINAGE



The lymphatics of the kidney drain into the lateral aortic nodes located at the level of origin of the renal arteries



NERVE SUPPLY



- The kidney is supplied by the renal plexus, an off shoot of the coeliac plexus
- It contains sympathetic



ASSESSMENT



- What is the Location of Kidney ?
- What is the Blood supply of Kidney ?