

FUNCTIONS of Kidney

1) Excretion of metabolic waste products & foreign chemicals

- ⇓
- UREA (from met. of AA)
 - CREATININE (from Creatine)
 - URIC ACID (from Nucleic acids)
 - BILIRUBIN (from Hb)

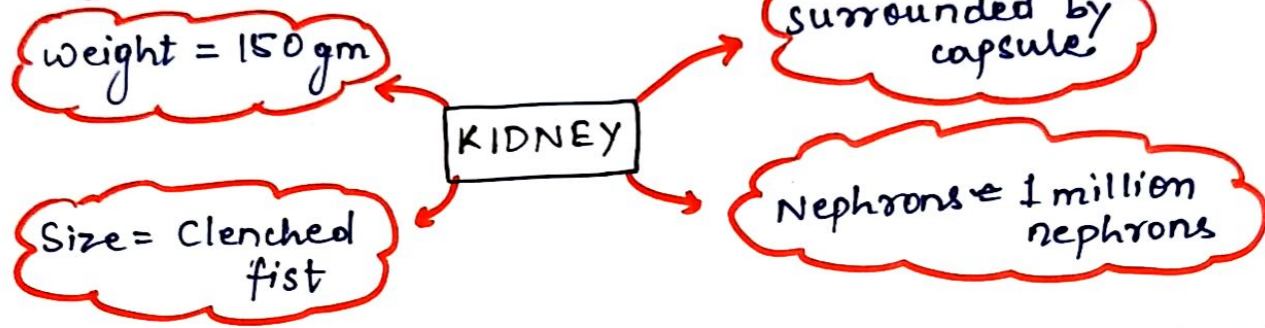
- ⇓
- Drugs -
 - toxins - . . .

2) Regulation of water & electrolyte balances

{ To maintain HOMEOSTASIS
Intake match Excretion }

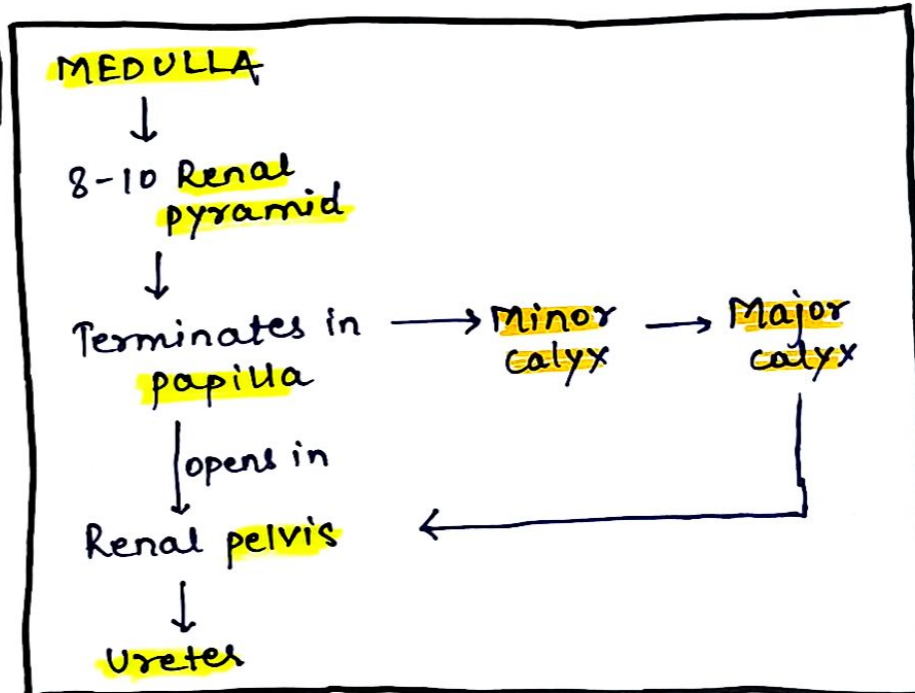
3) Regulation of Body fluid osmolality & electrolyte concentration

Physiological anatomy of Kidney



Capsule

Outer
CORTEX

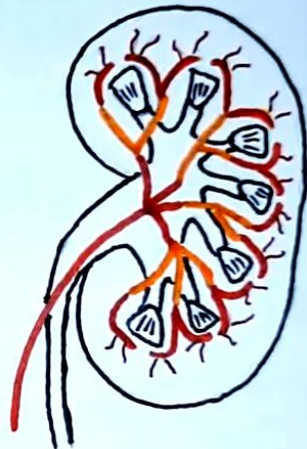
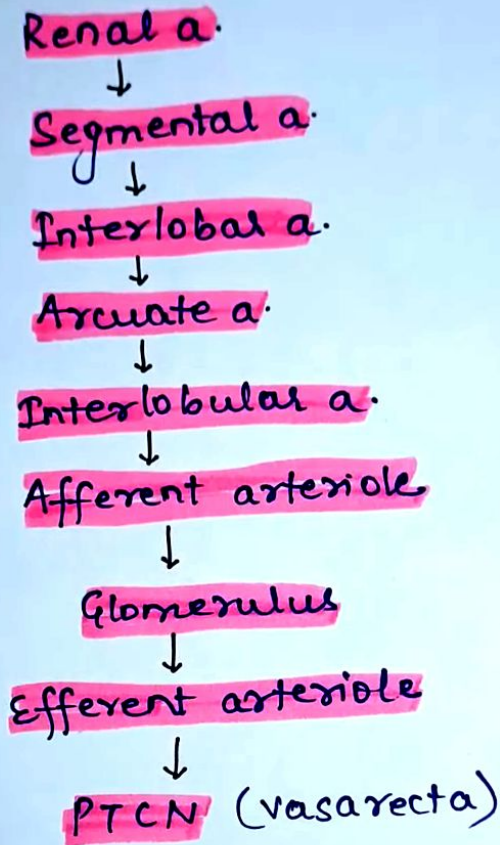


Blood Supply to Kidney

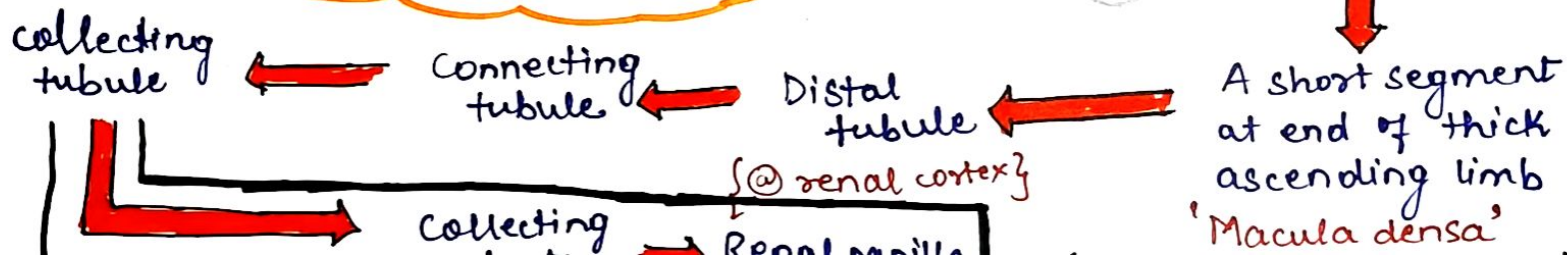
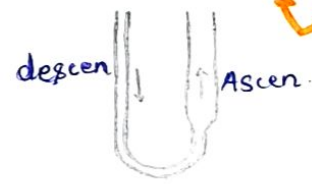
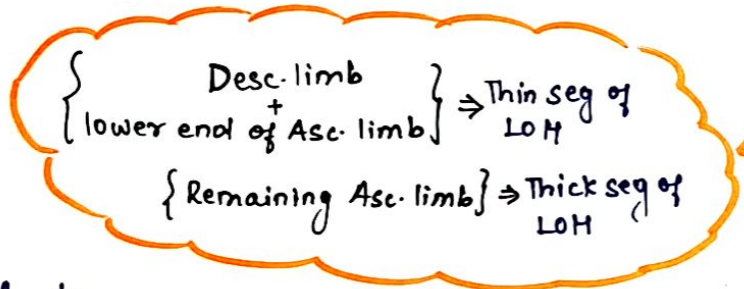
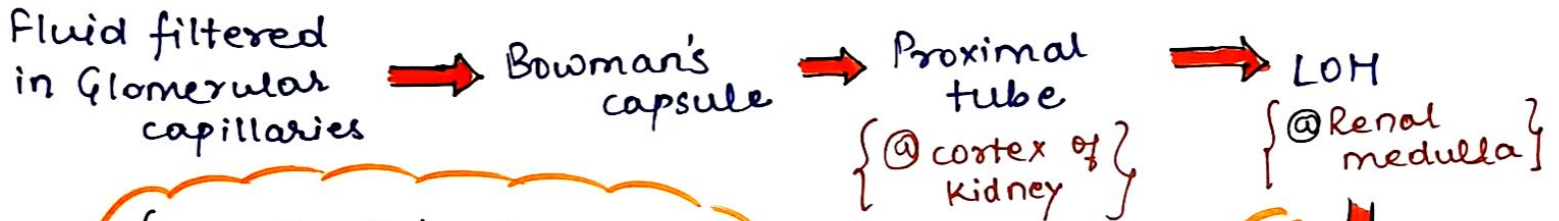
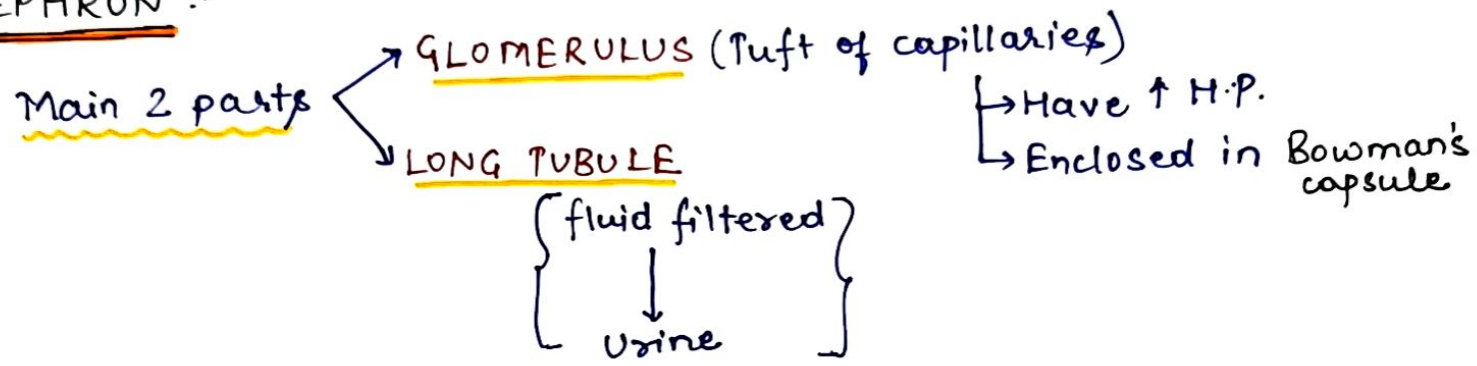
25% of C.O.
to kidneys

medulla < cortex

∴ Medulla is more
vulnerable to
ischemia



NEPHRON :-



CORTICAL Nephron v/s Juxtamedullary Nephron

Glomeruli ⇒ @ cortex

Glomeruli ⇒ @ cortex near medulla

	CORTICAL Nephron	JM nephron
• Location	Cortex	Medulla-cortex junction
• % of total nephrons	85%	15%
• Function	Filtration & Reabsorption	Filtration, reabsorption & creation of medullary osmolar gradient.
• Length of LOH	Short	Long
• Ascending limb of LOH	Thin segment only	Thin & thick segments
• Vasa Recta	Absent	Present (dipping into medulla)
• Peritubular Capillary (PTCN) Network.	Large	Small

Vasa Recta :- Specialised PTCN formed by extension of Efferent Arteriole.