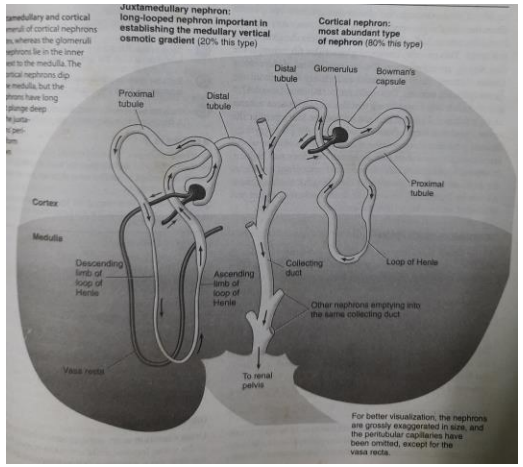
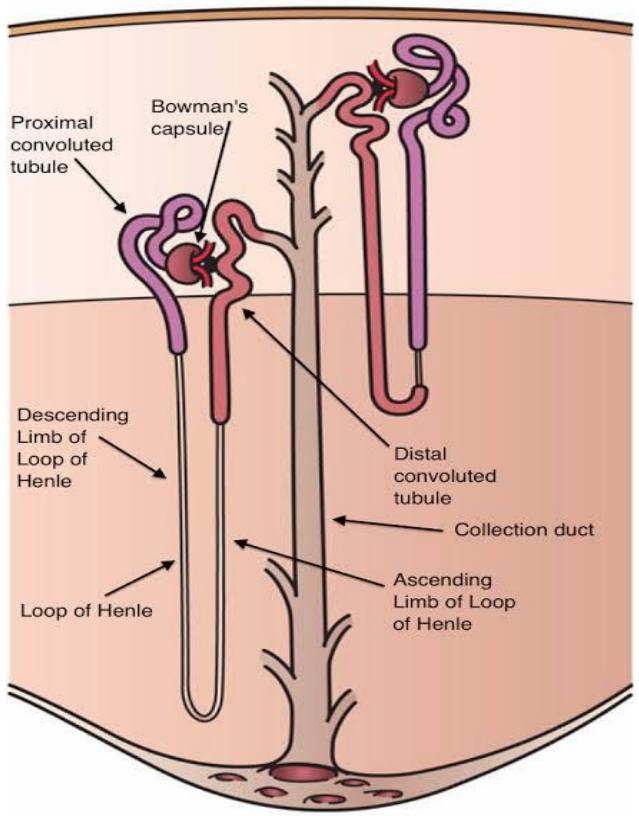
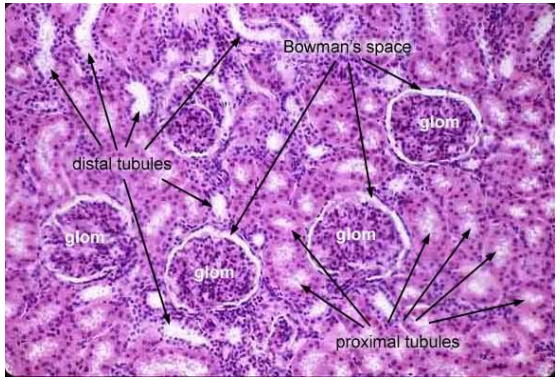
Physiology of Excretion

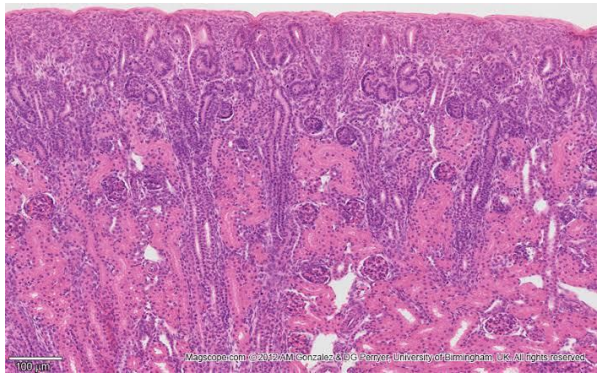
Nephron Types

- Cortical nephrons
- Juxtamedullary nephrons
- Vasa recta
- Granular cortex & Striated medulla
- Dissimilar ratio between dessert rat & human



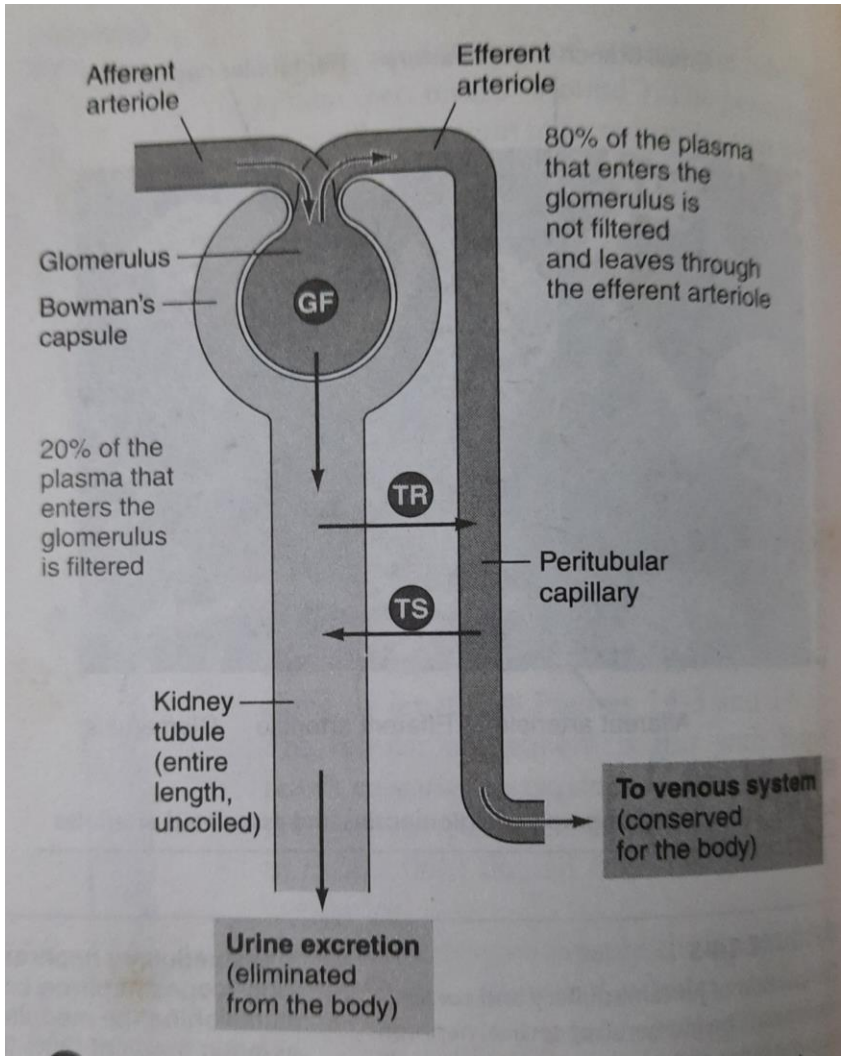






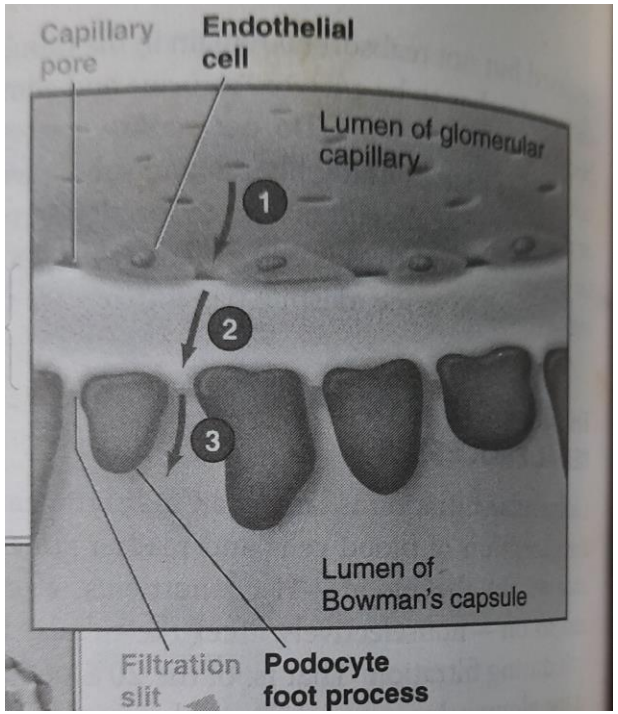
Three basic renal processes

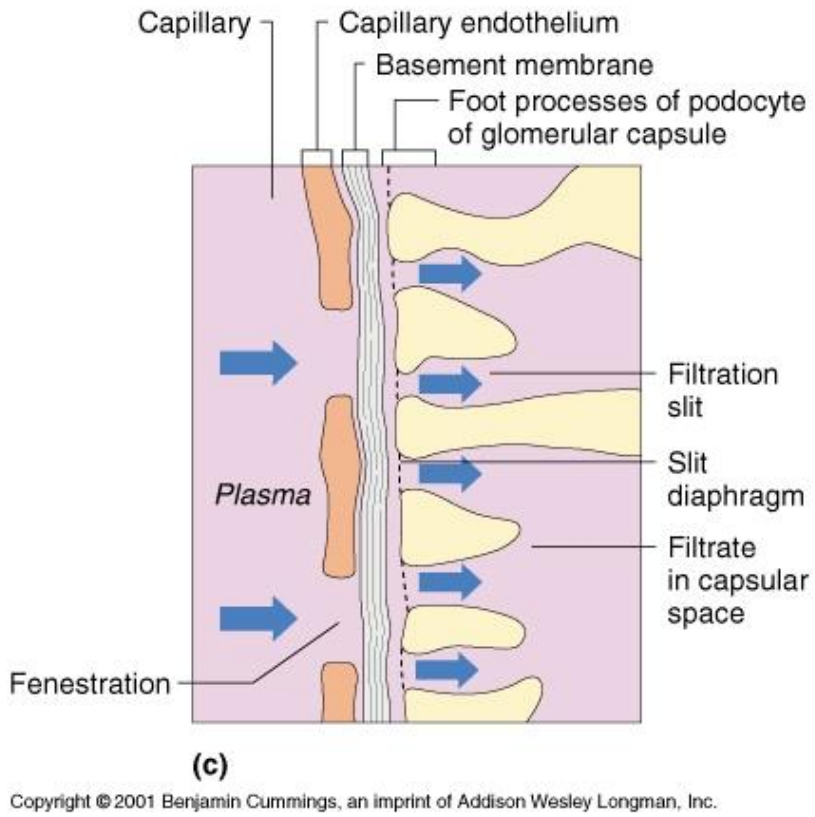
- Glomerular filtration
- Tubular reabsorption
- Tubular secretion



Glomerular Ultrafiltration

- Glomerular capillary wall
- Basement membrane
  * what's happened in Albuminaria?
- Inner layer of Bowman's capsule
  * podocytes
  * filtration slit

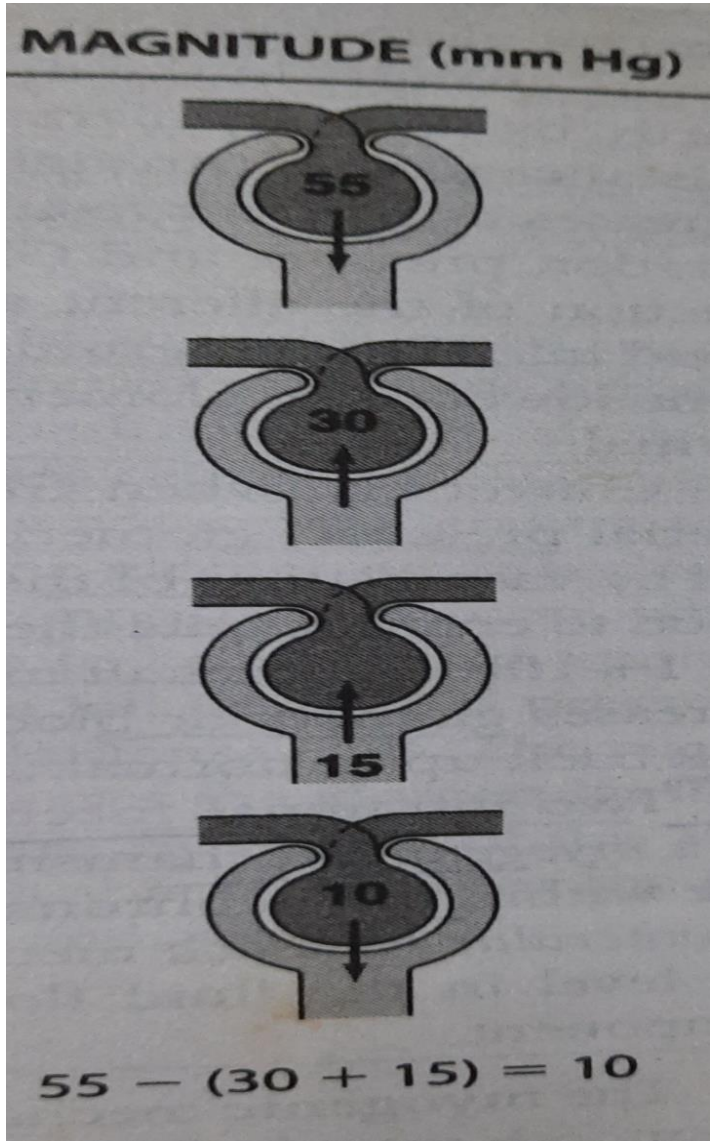




Forces involved Glomerular Filtration

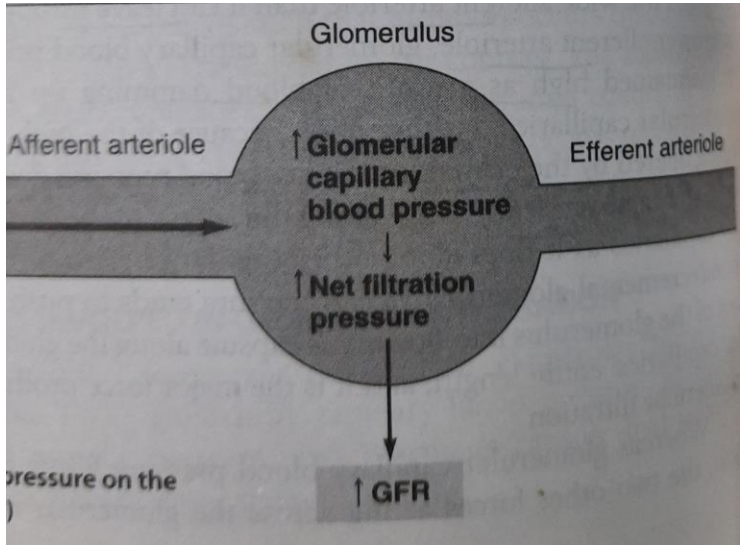
- Glomerular capillary blood pressure
- Plasma colloid osmotic pressure
- Bowman's capsule Hydrostatic pressure
- Net filtration pressure
- Glomerular filtration rate (GFR)

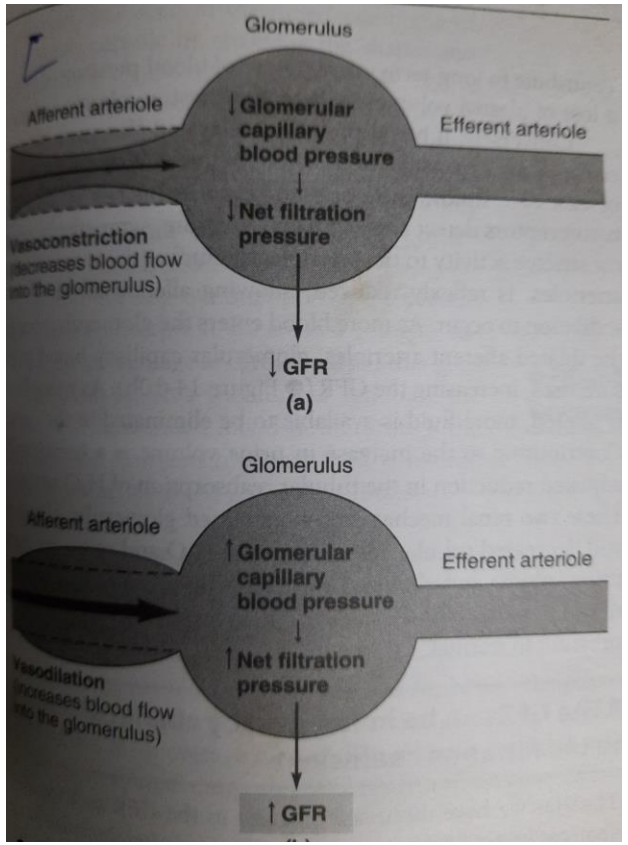
  = Kf X Net filtration pressure

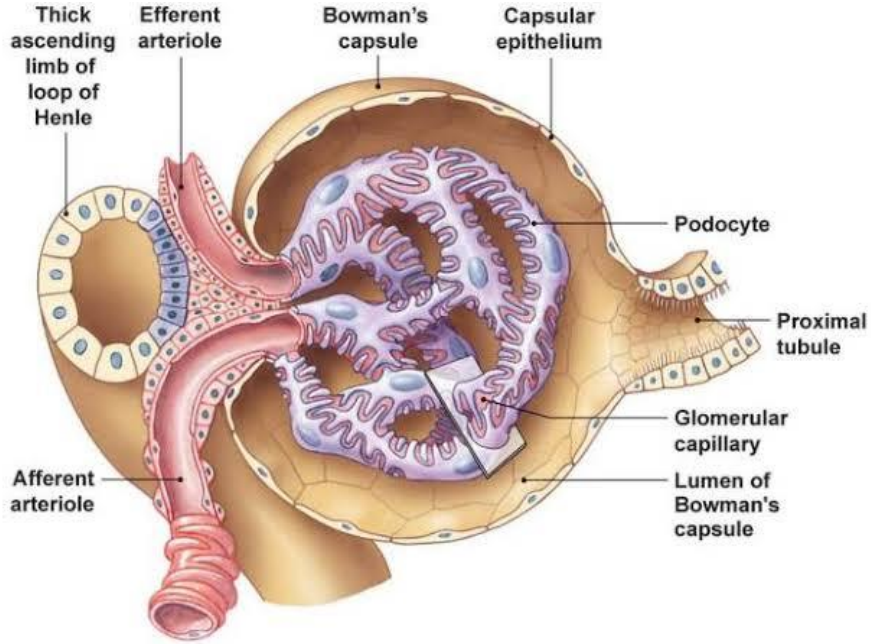


Autoregulation of GFR

- Myogenic mechanism
- Tubuloglomerular Feedback







(a) The epithelium around glomerular capillaries is modified into podocytes.

Influence of Filtration Coefficient on GFR

- Mesangial cells & available surface area for filtration
- Podocytes & permeability through filtration slits