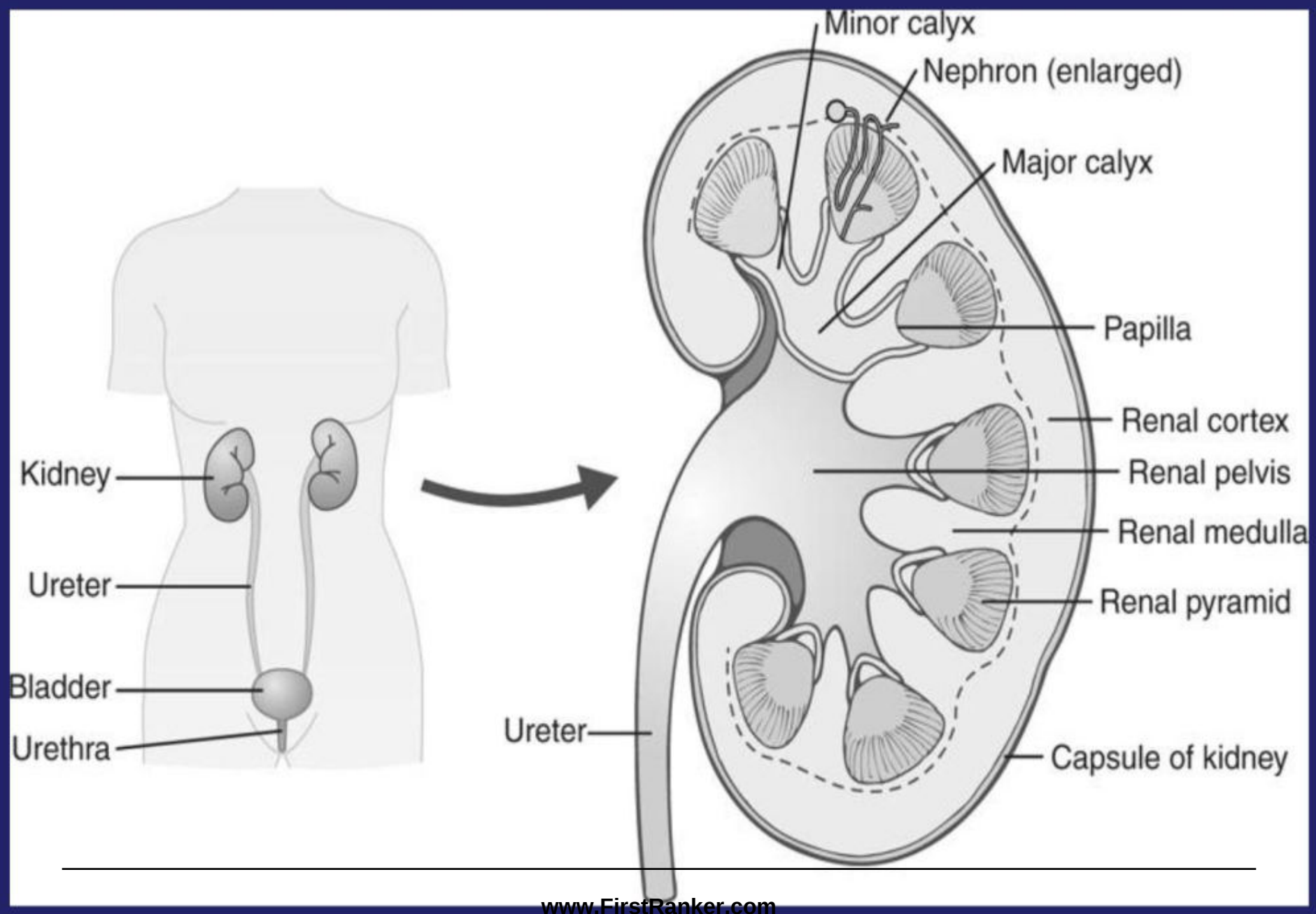


Excretory System

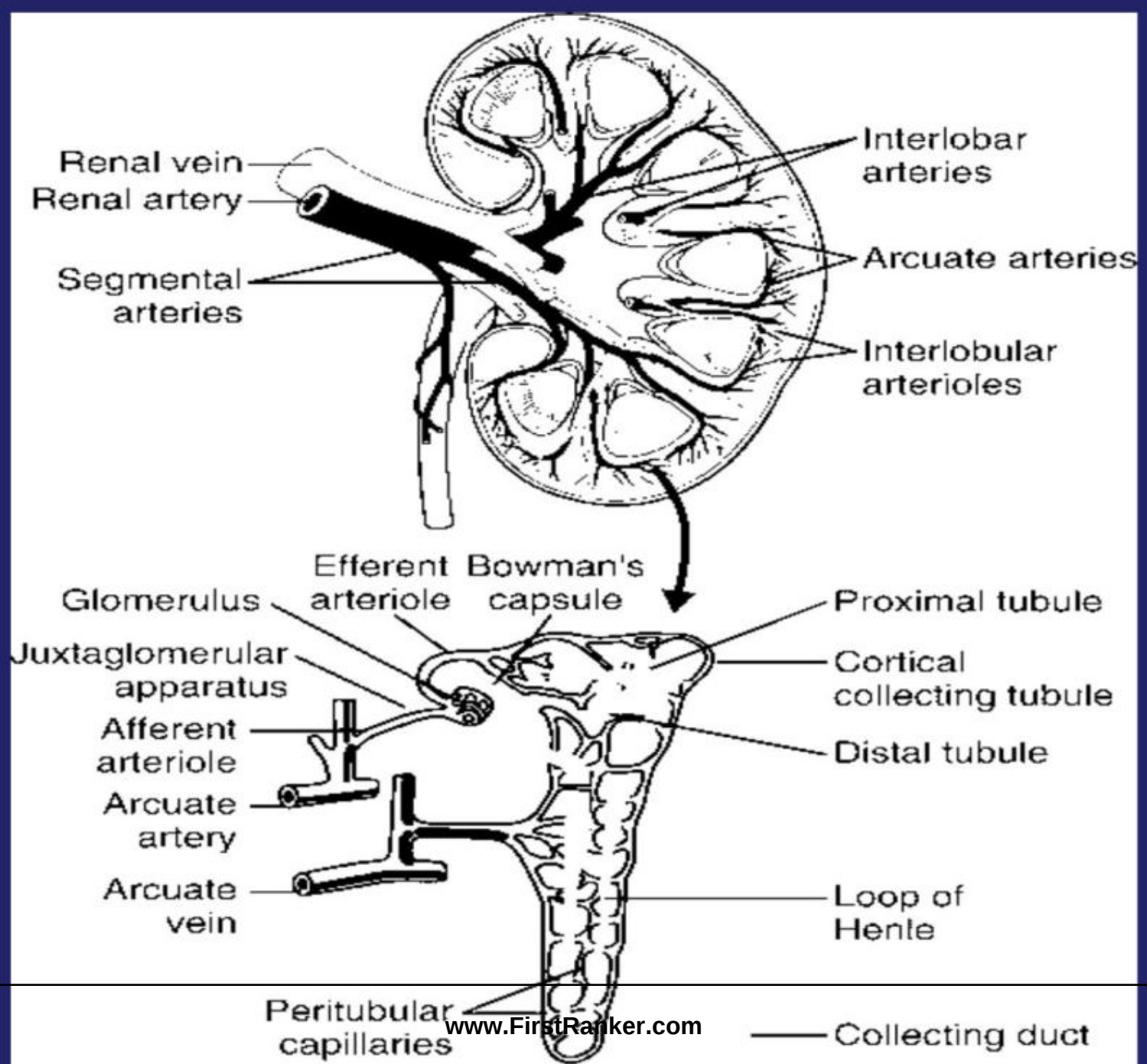
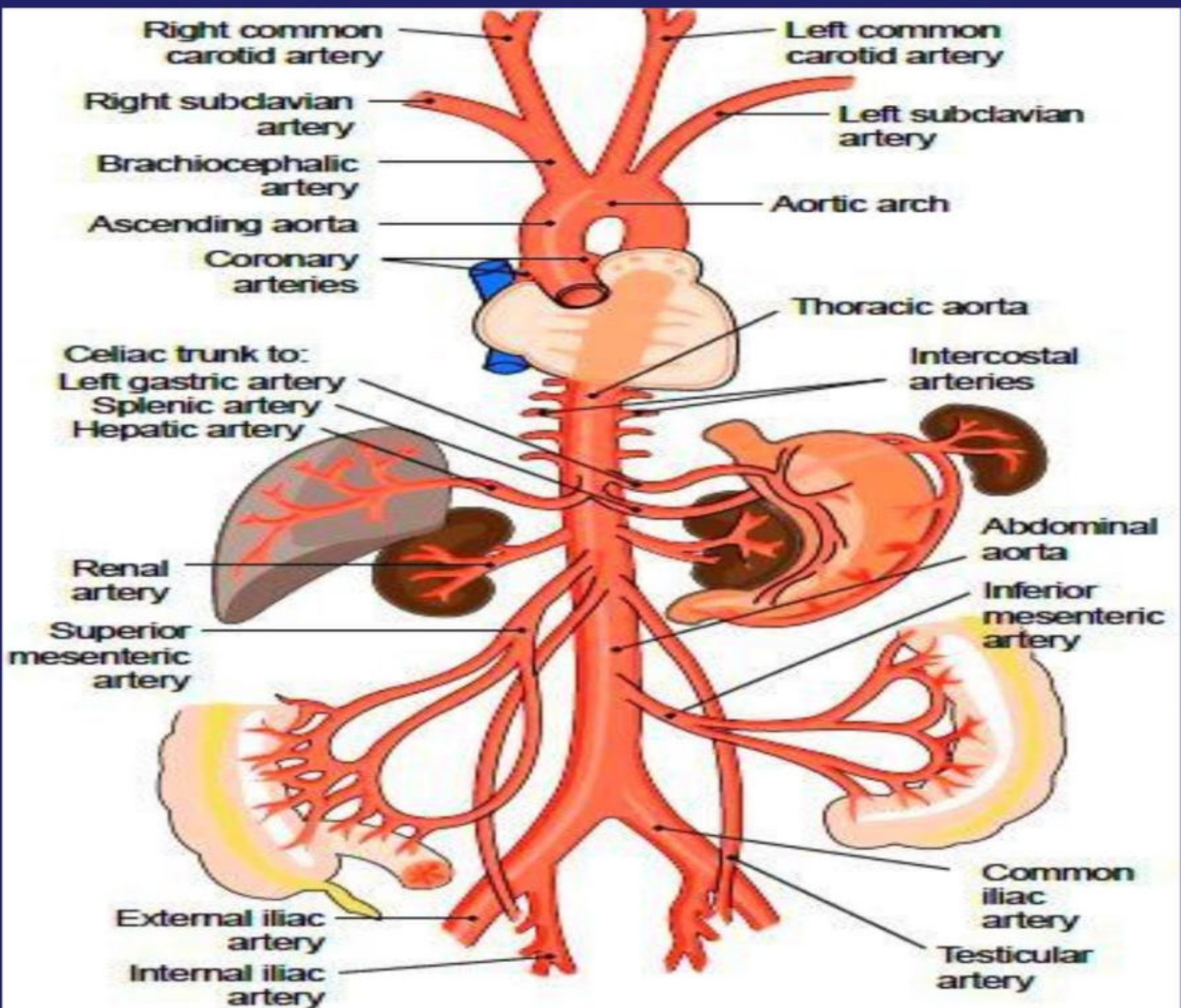


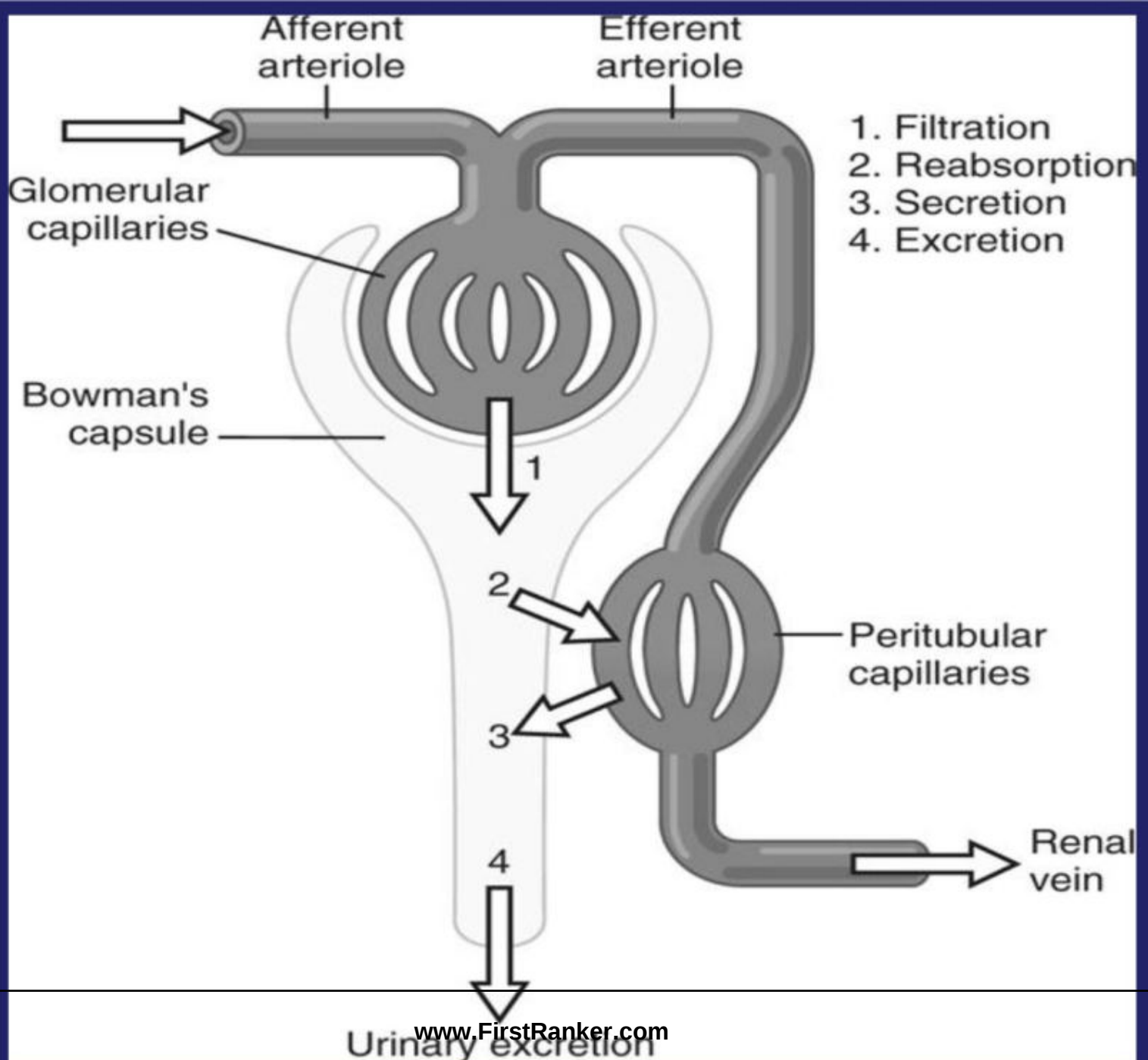
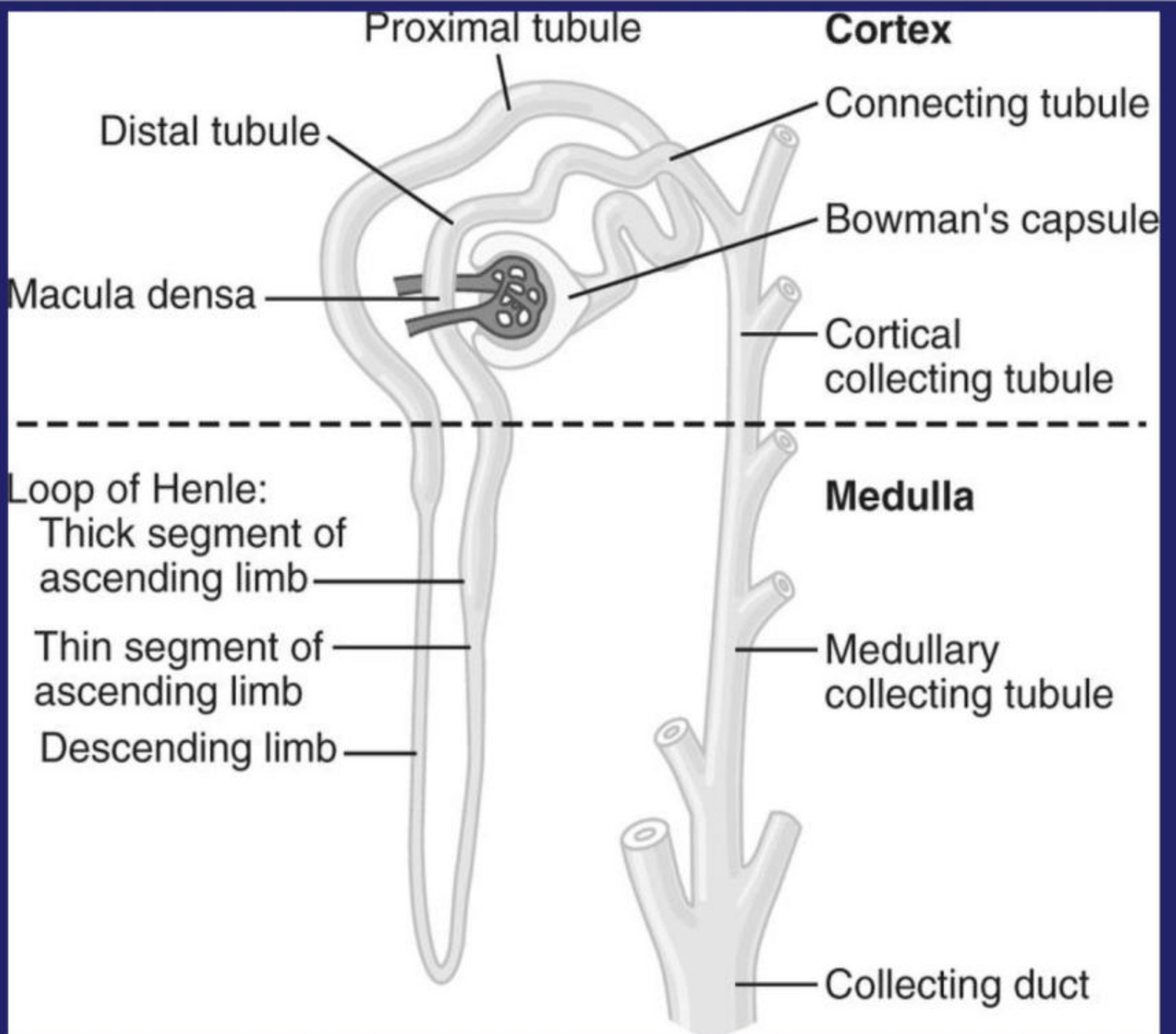
Functions of Kidneys

- Excretion of metabolic waste products and chemicals
- Regulation of water and electrolyte balances
- Regulation of body fluid osmolality and electrolyte concentrations
- Regulation of arterial pressure

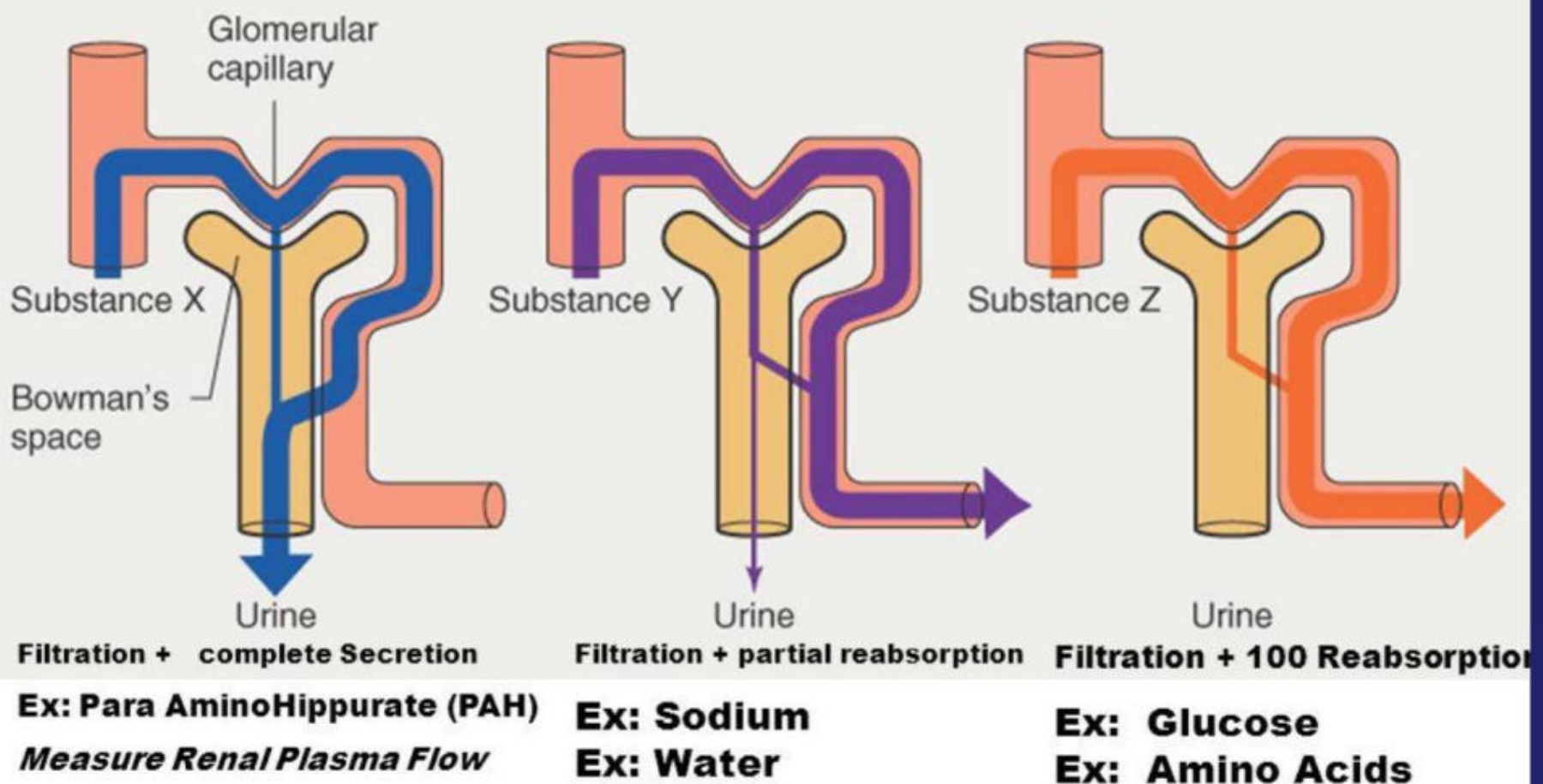
Functions of Kidneys

- Regulation of acid-base balance
- Secretion, metabolism and excretion of hormones
- Gluconeogenesis





Renal Handling of Substances

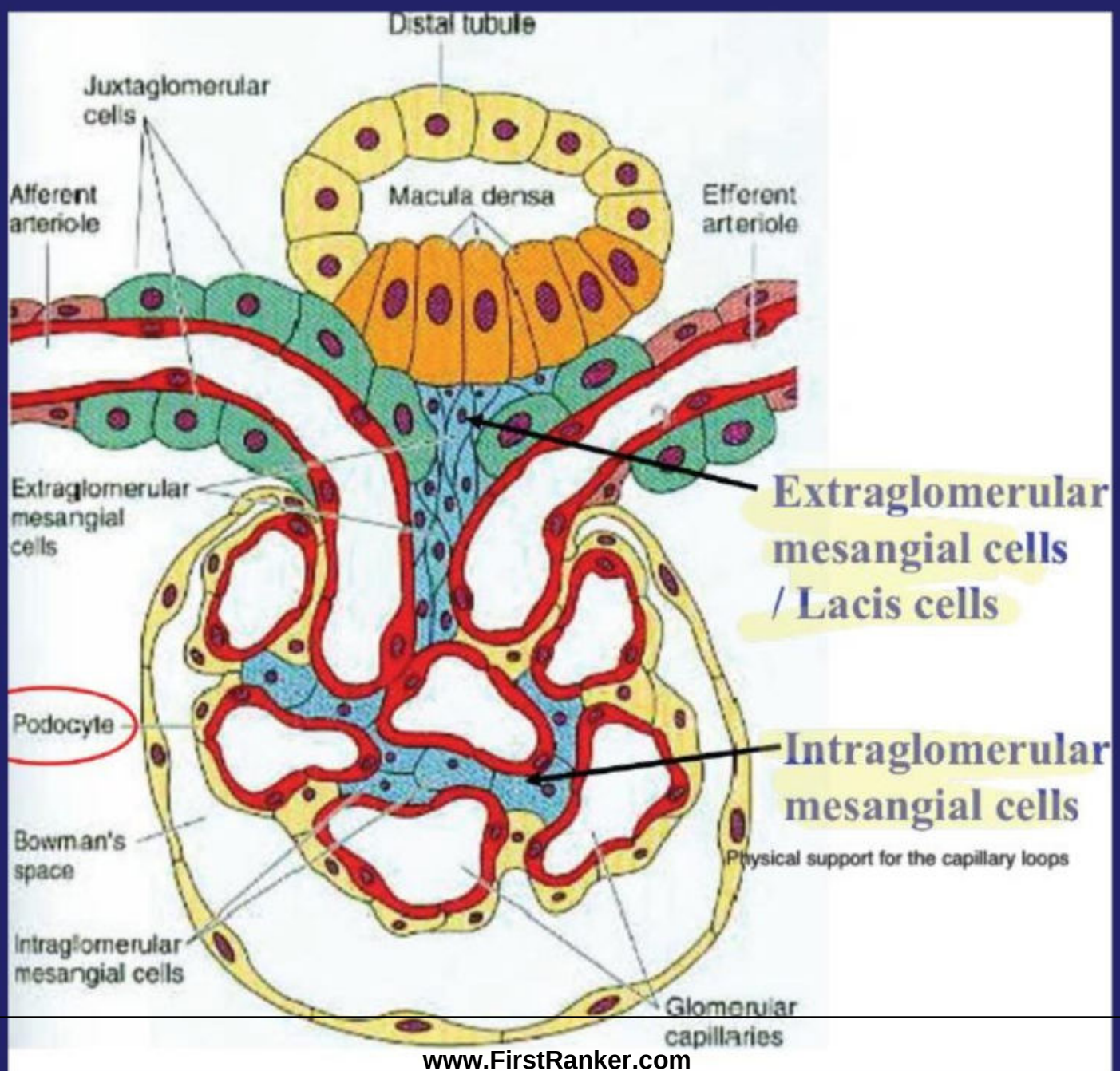
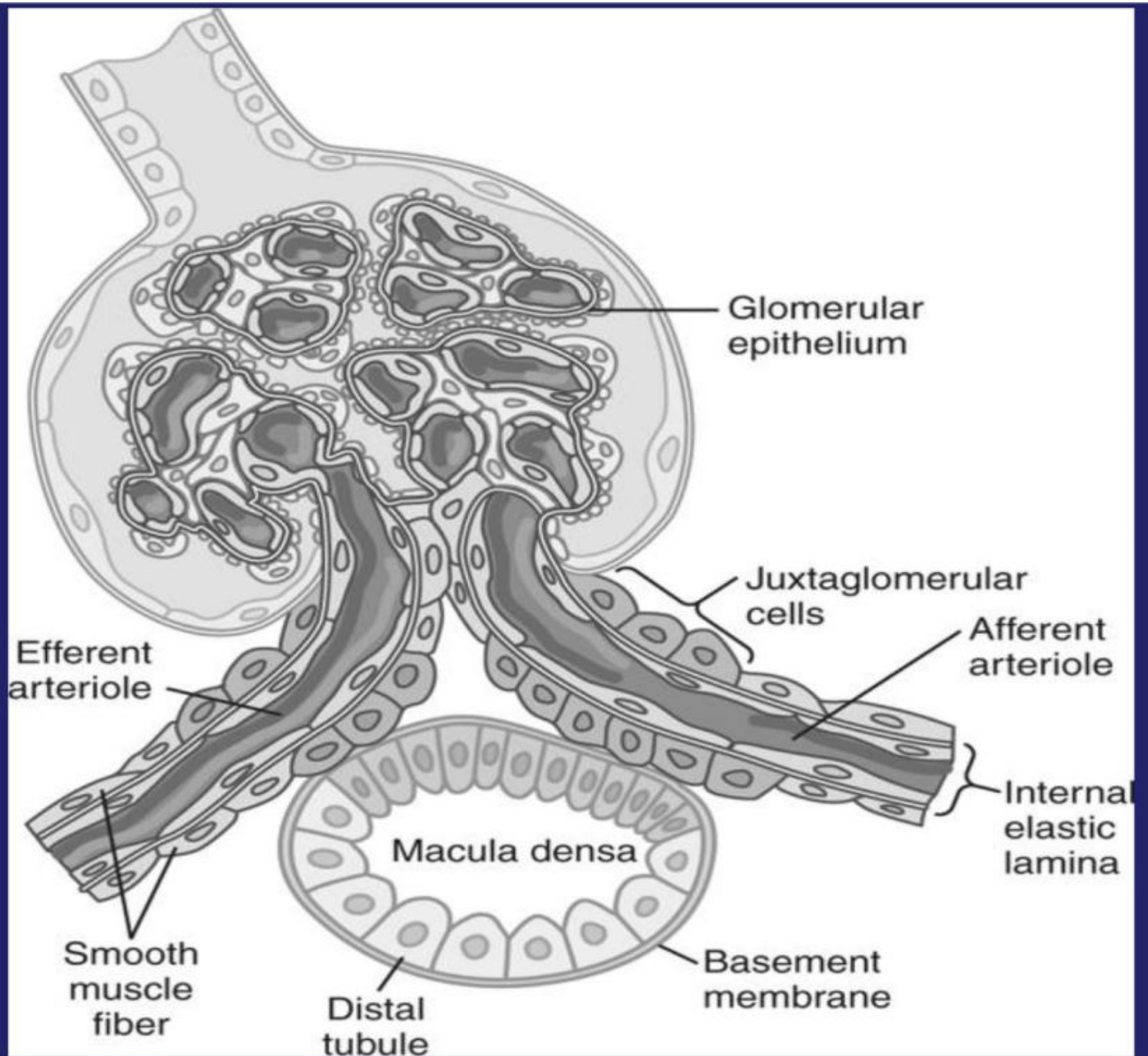


Mesangial Cells

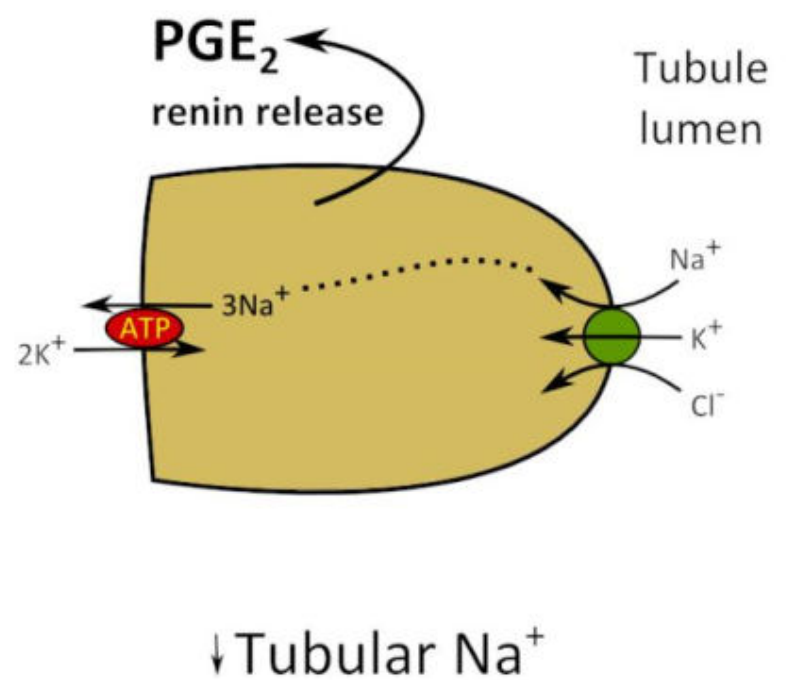
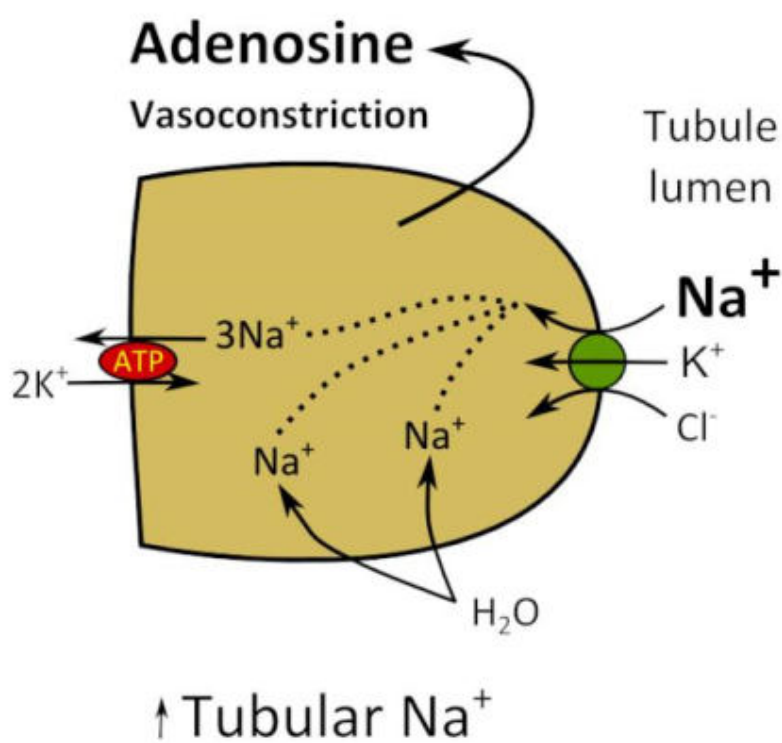
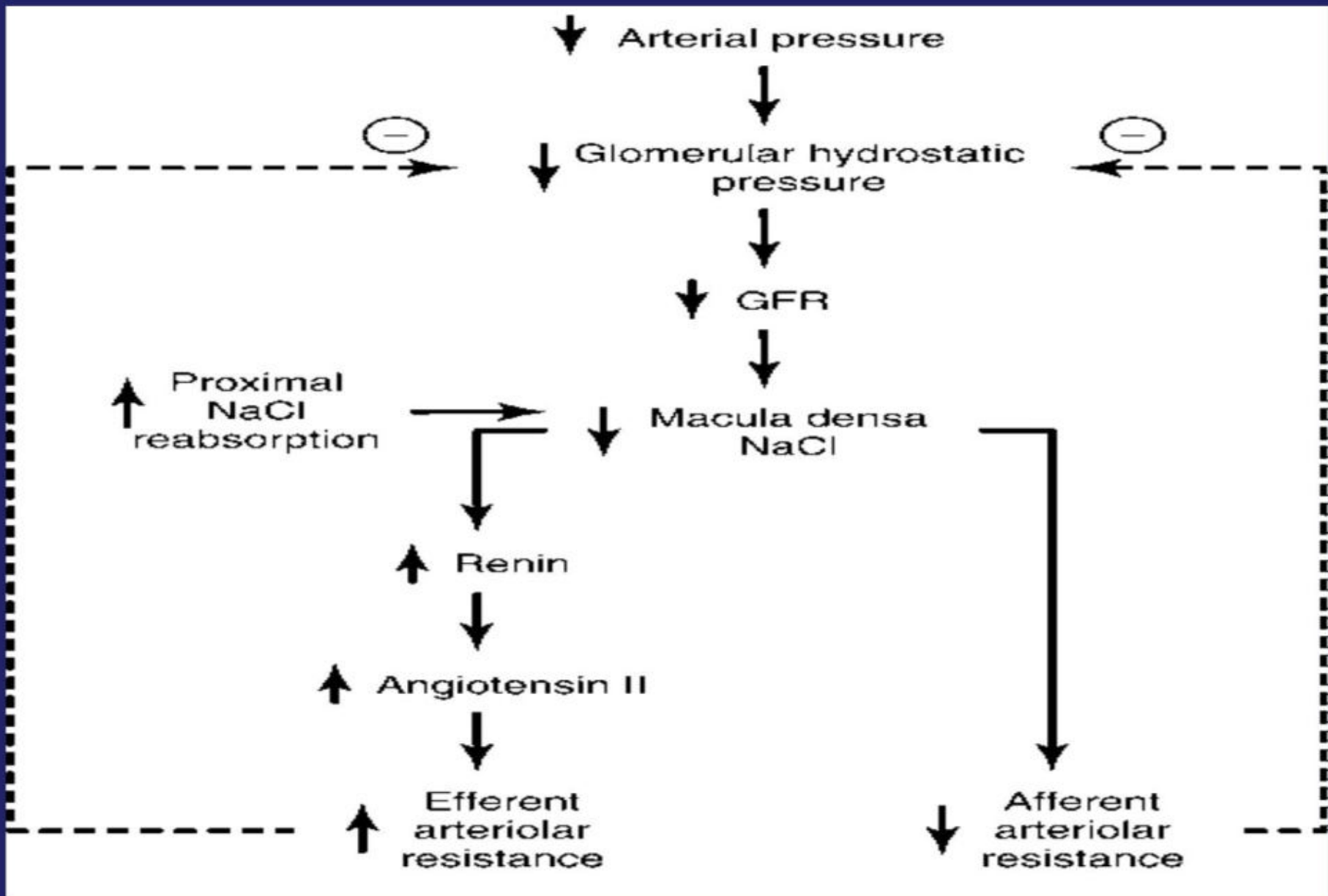
- Stellate cells located between endothelium and basal lamina
- Common in between capillaries
- They are contractile
- Secrete extracellular matrix, take up immune complexes and involved in diseases
- They regulate GFR

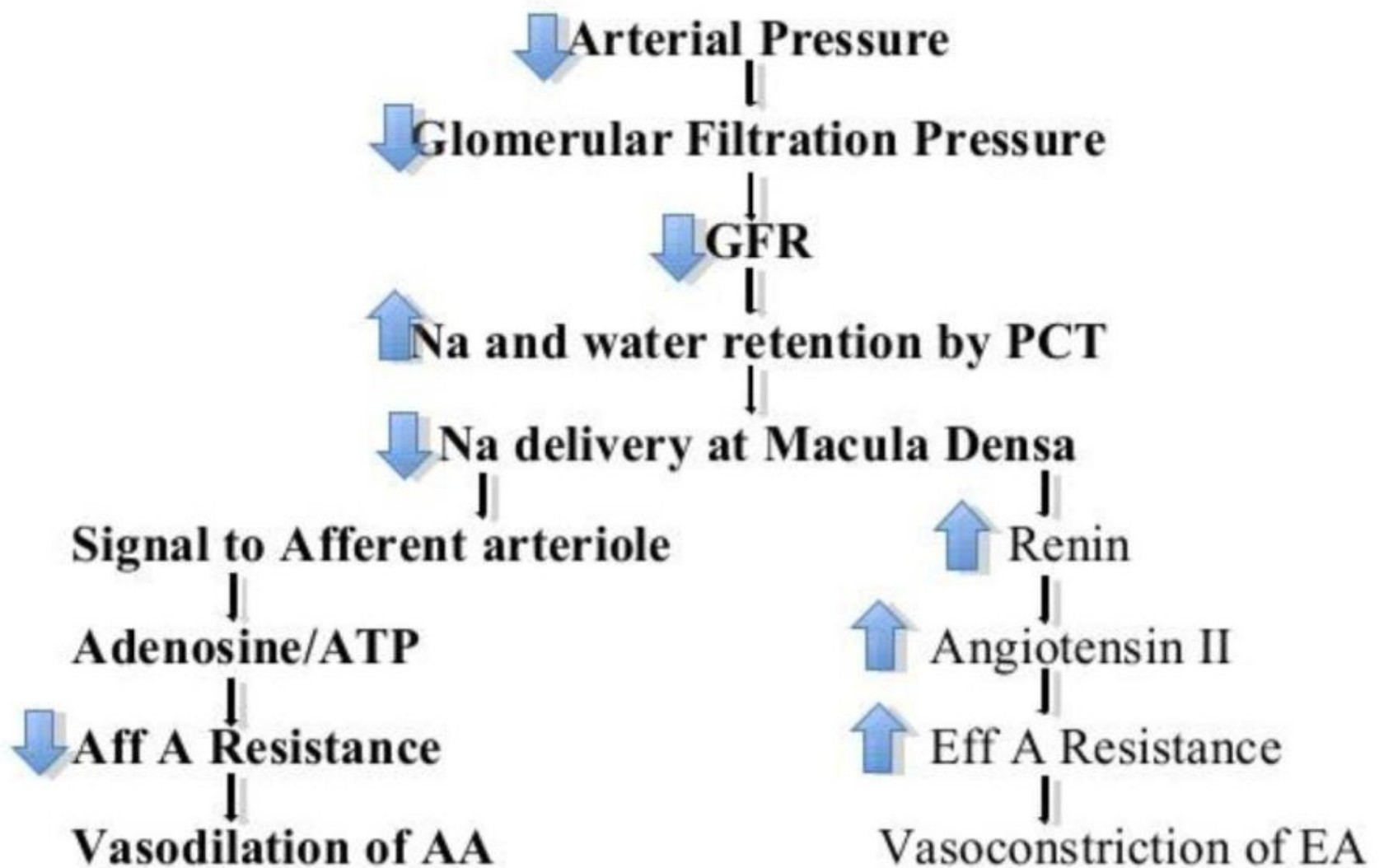
Physiologic control of GFR and Renal blood flow

- Sympathetic nervous system activation decreases GFR
 - Norepinephrine, Epinephrine and Endothelin constricts renal blood vessels and decrease GFR
 - NO, Prostaglandins and Bradykinin increase GFR
-
- Total blood flow through both kidneys is 1100 ml/min or 22% of cardiac output
 - Kidneys consume twice the rate of the brain but receives 7 times the blood flow as brain



Tubulo-glomerular feedback mechanism





Mechanism of Myogenic Autoregulation

