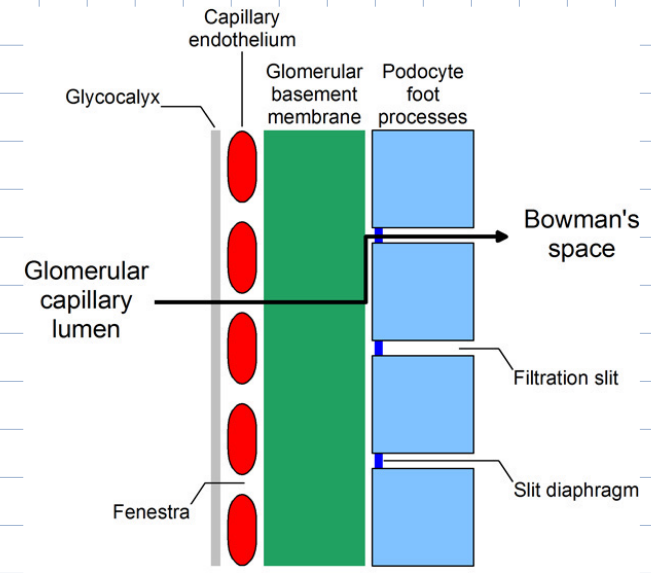
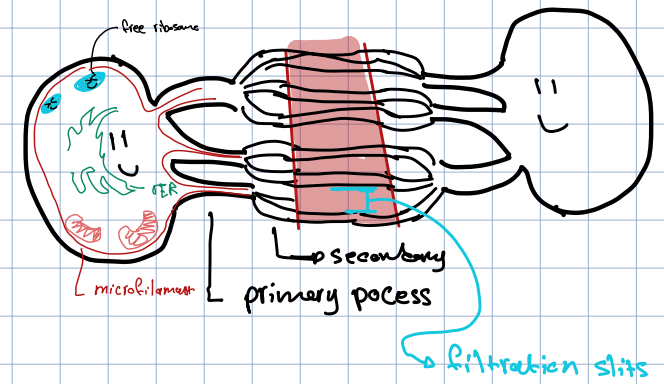
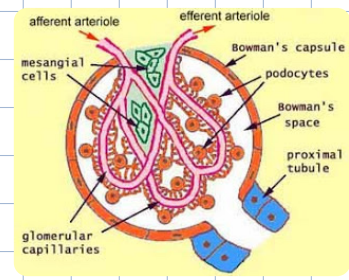


podocytes

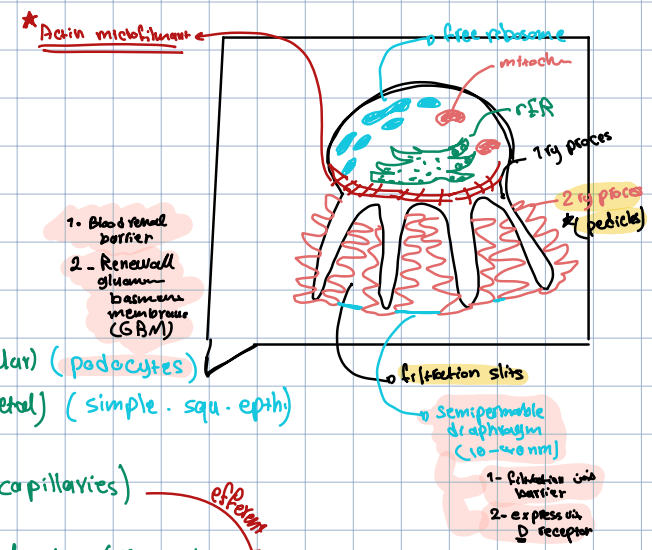


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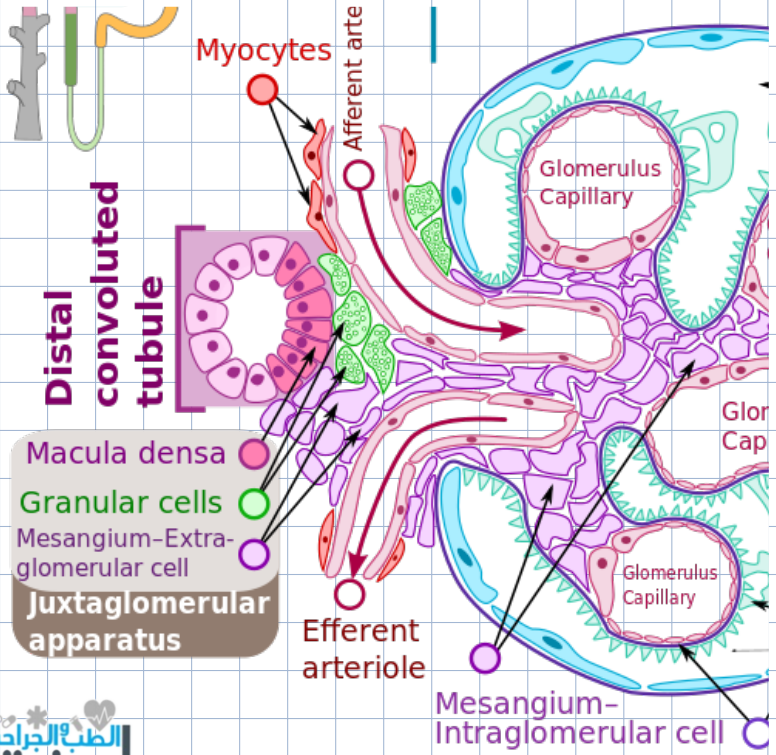
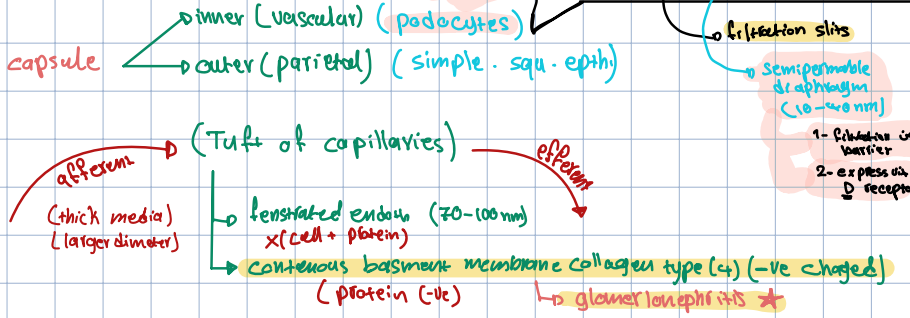
- ⇒ nephrons
- 1 - Cortical nephron (short loop of Henle)
 - 2 - juxta-medullary nephron (long loop of Henle)

- ⇒ 1 - setting up medullary osmotic gradient
- 2 - production of concentrated
 - 3 - hypertonic urine

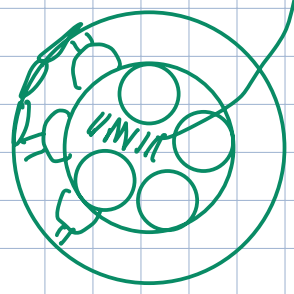


⇒ Renal corpuscle (malpighian)

- 1) urinary → Bowman's capsule
- 2) vascular → glomerulus



Mesangial cell



- intra-glomerular (located along glomerular capillaries)
 - 1- specialized (pericyte)
 - 2- located bet. endothelial cell & BM of capillary
 - 3- form (mesangium)
 - (lacis cell)
 - Extra-glomerular (located at vascular pole)
 - 1- specialized (smooth ms cell)
 - 2) outside glomerulus at vascular end
- Function**
- 1) regulate bl. flow of capillary
 - 2) support glomerulus
 - 3) phagocytosis + normal BM
- 1) regulation of bl. flow → kidney bl. pressure → systemic (Renin-Angiotensin-Aldosterone)
- 2) EPO secretion
 - 3) part of juxta-glom.

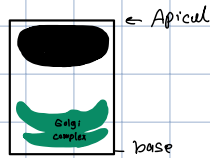
juxtaglomerular apparatus ⇒ (located vascular end of renal corpuscle)

macula densa (Lining of DCT) (NaCl)

1- columnar cell (↑ length)

2) part of DCT fit in $\begin{cases} \text{eff. A} \\ \text{in eff. A} \end{cases}$

3) BM is lost ⇒ (direct contact with granular cell)



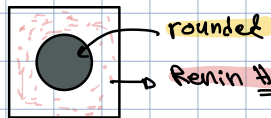
1) Act As osmoreceptor (level of Na⁺ DCT)

granular (juxtaglomerular cell)

1) modified smooth muscle cell in tunica media

2) in the afferent arteriole

3)



secrete Renin #

Lacis cell (Extra glomerular mesangial cell)

1- specialized (smooth ms cell)

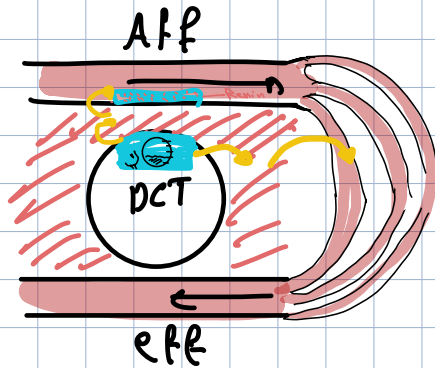
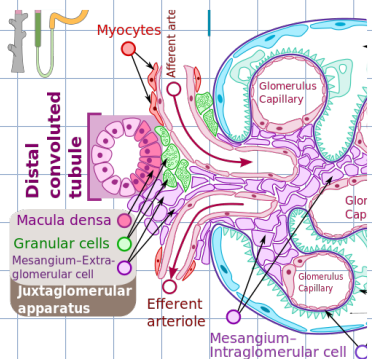
2) outside glomerulus at vascular end (located at vascular pole)

3) bet: 1) afferent Arteriole
2) efferent Arteriole
3) macula densa

1) regulation of bl. flow → kidney
via /
↓
Renin-Angiotensin-Aldosterone

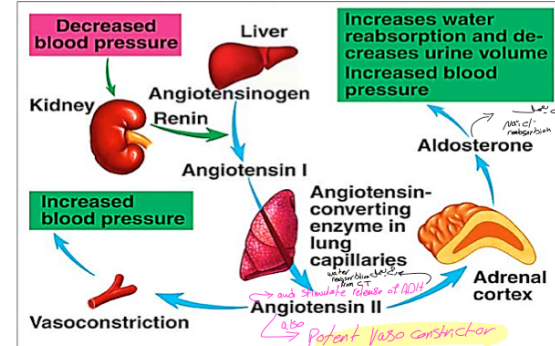
2) EPO secretion

3) part of juxta-glom 1) supportive
2) transmit signals from 1) macula densa
2) glomerulus
VC



:Function of Juxtaglomerular apparatus

Regulation of glomerular filtrate rate & blood pressure through the Renin-angiotensin – Aldosterone system



Mechanism of Renin-angiotensin – aldosterone

Drop in blood pressure or blood volume

volume of glomerular filtrate ↓ →

Na & Cl concentration in DCT ↓ → chemo

Macula densa monitor these changes →

JG cells → Renin ++ →

changes angiotensinogen in blood (formed by liver) → →
angiotensin I → lung (has ACE) → angiotensin II

:Angiotensin II is

potent vasoconstrictor

release of Aldosterone from adrenal cortex & ++
ADH from posterior pituitary

Aldosterone promotes reabsorption of NaCl by DCT

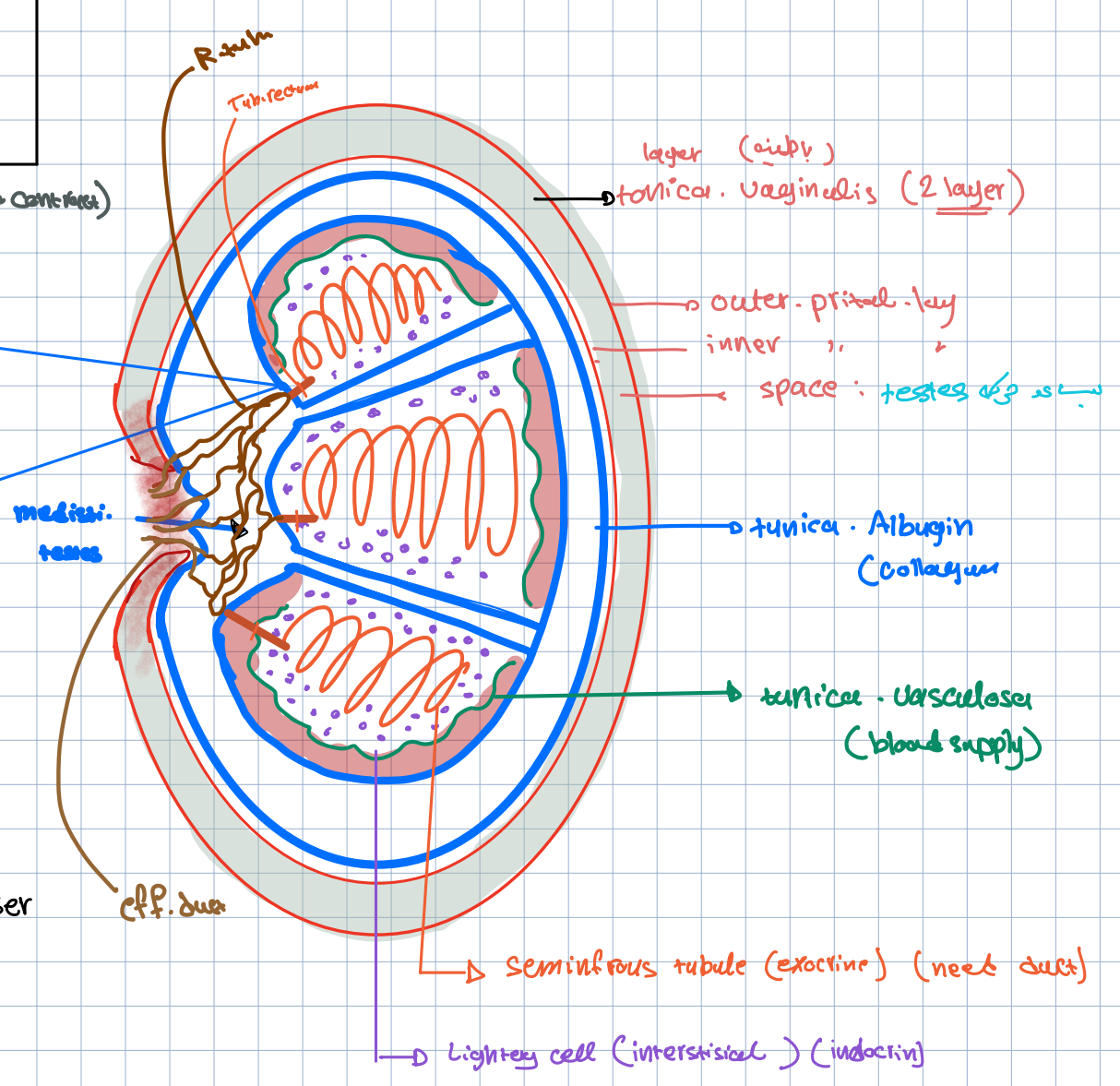
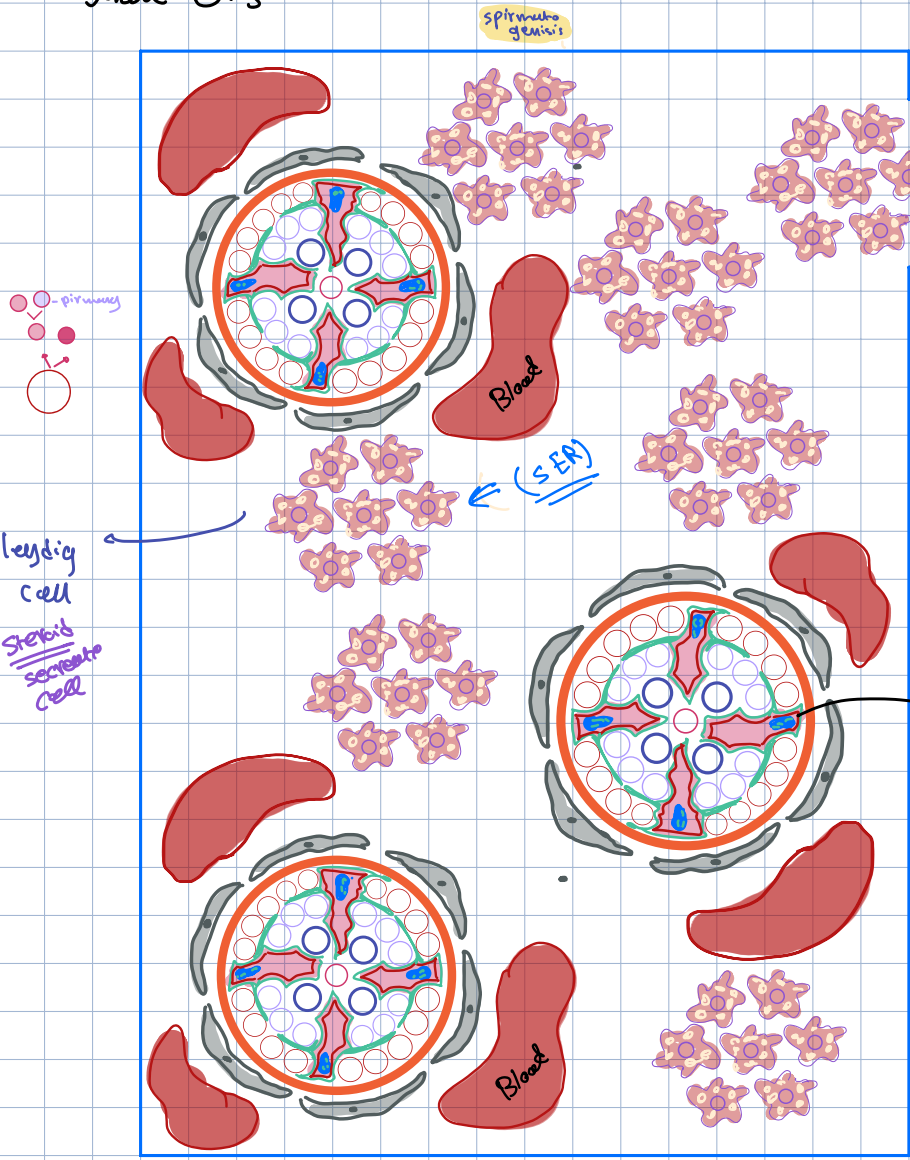
ADH promotes water reabsorption from collecting tubules

Both will cause ↑ blood pressure

testes (primary male genetic organ) → exocrine (sperm)
 glands → endocrine (testosterone H.)
 ducts

Male G.S

myoid cell (have ability to contract)



testes = 250 testicular lobules
 = (250 - 100) seminiferous tubules ← FSH

قف دُونَ رَأْيِكَ فِي الْحَيَاةِ
مُجَاهِدًا
إِنَّ الْحَيَاةَ
تَمْقِيدَةٌ وَجِهَادٌ