



HISTOLOGIA

RINS, VIAS URINÁRIAS E BEXIGA **BIOFUNÇÃO I**

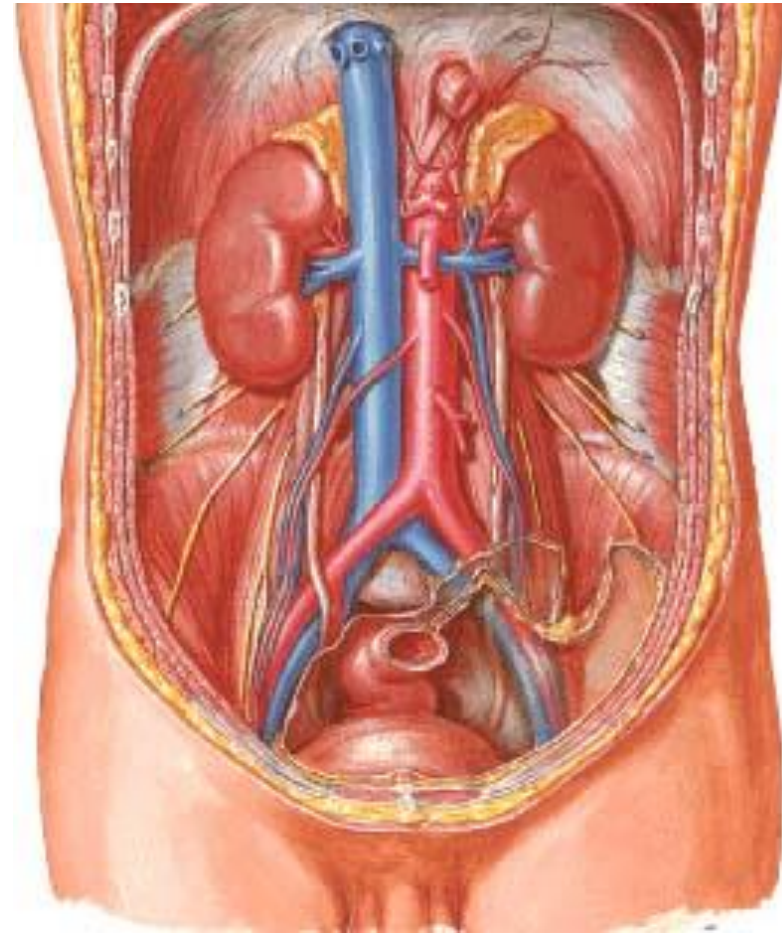
Módulo renal

Prof. Dra. Juliana Fraga Vasconcelos

Os rins



- Órgão par, abdominal, retroperitoneal;
- Situados à direita e à esquerda da coluna vertebral;
- Produção e emissão da urina;
- Funciona como glândula endócrina
- Filtram 110 a 125 ml de sangue/min



1. Artéria renal

2. Veia renal

3. Ureter

4. Cálice maior

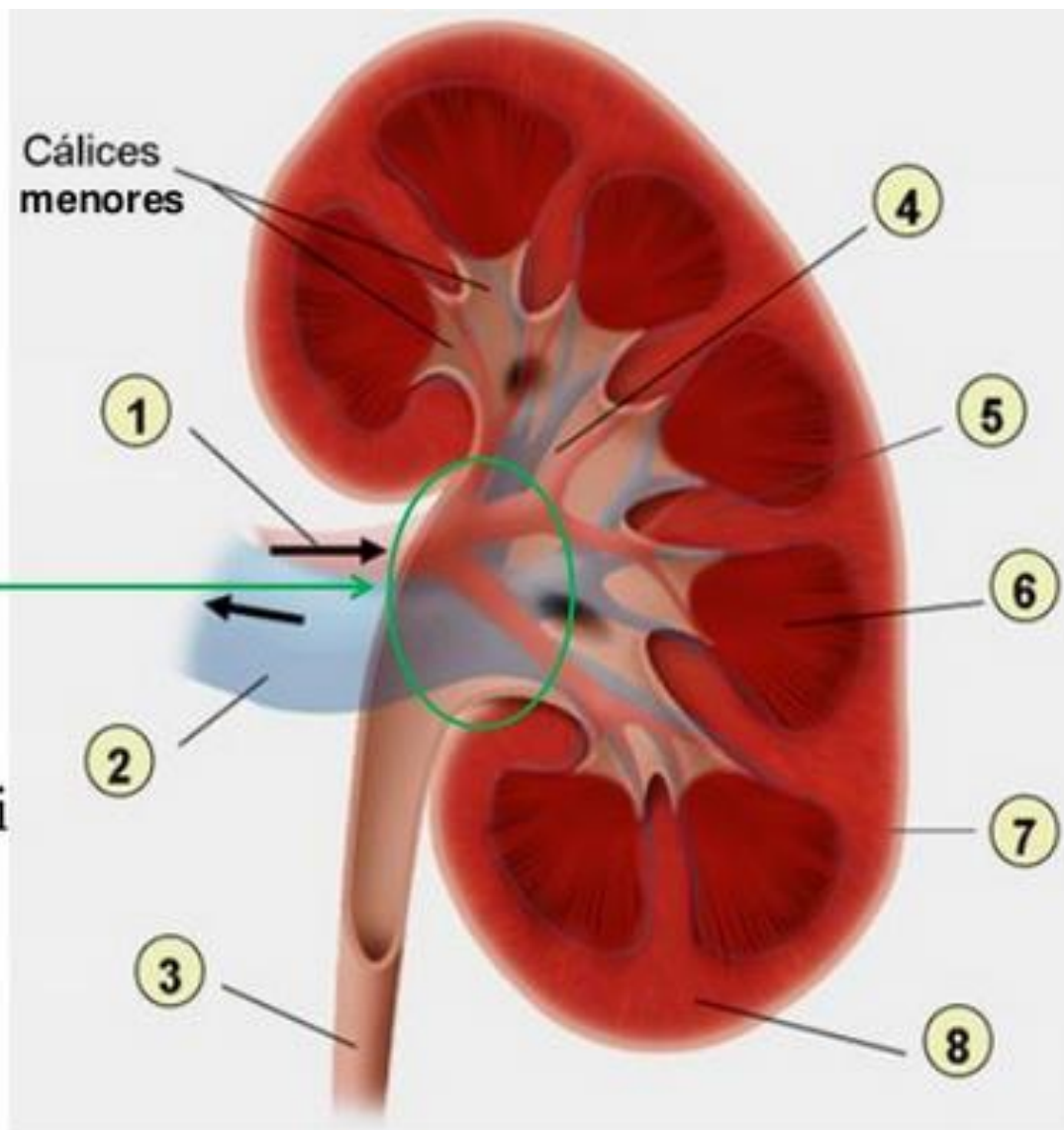
→ **Pelve renal**

5. Medula

6. Pirâmide de Malpighi

7. Cápsula

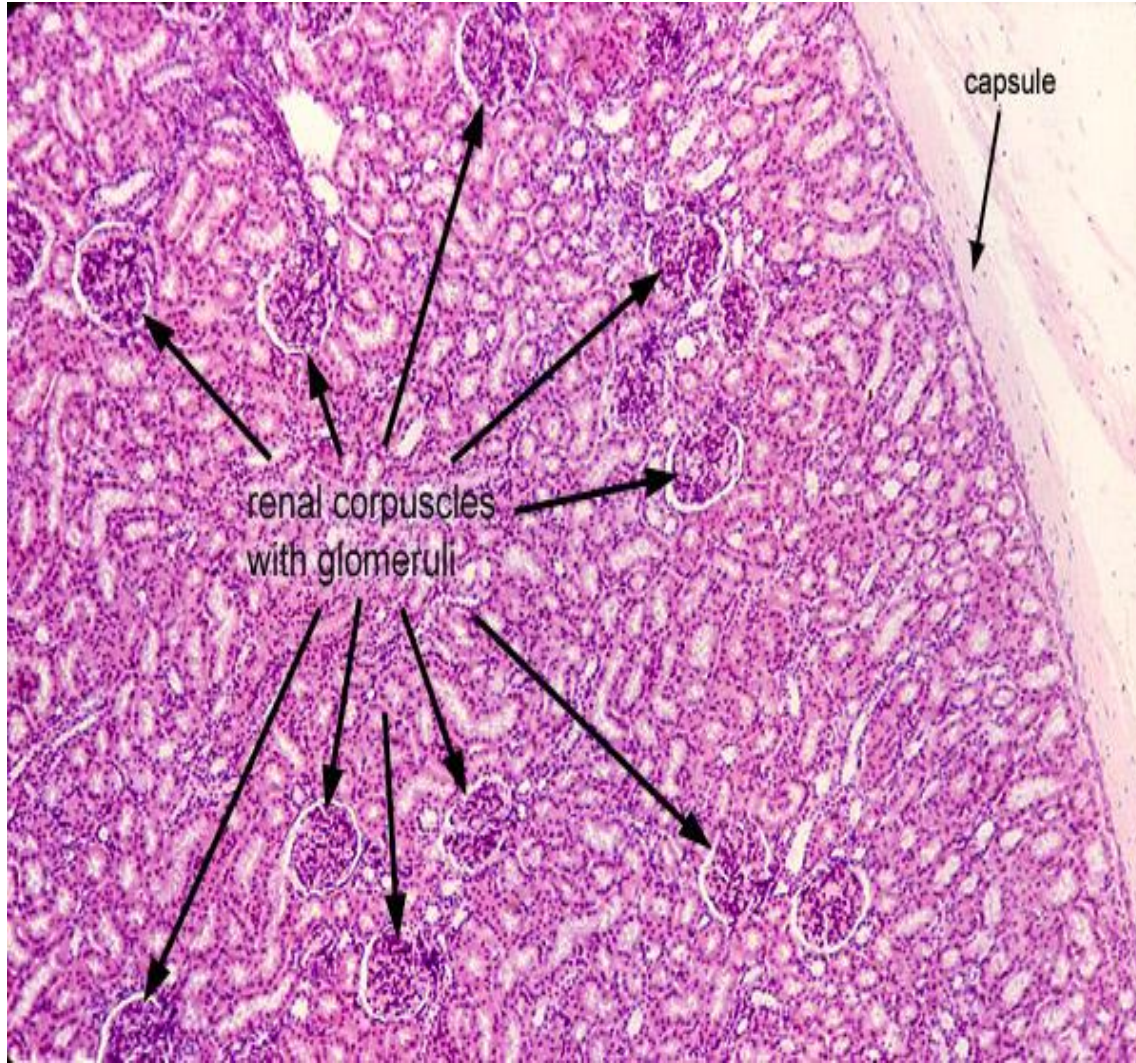
8. Córtex

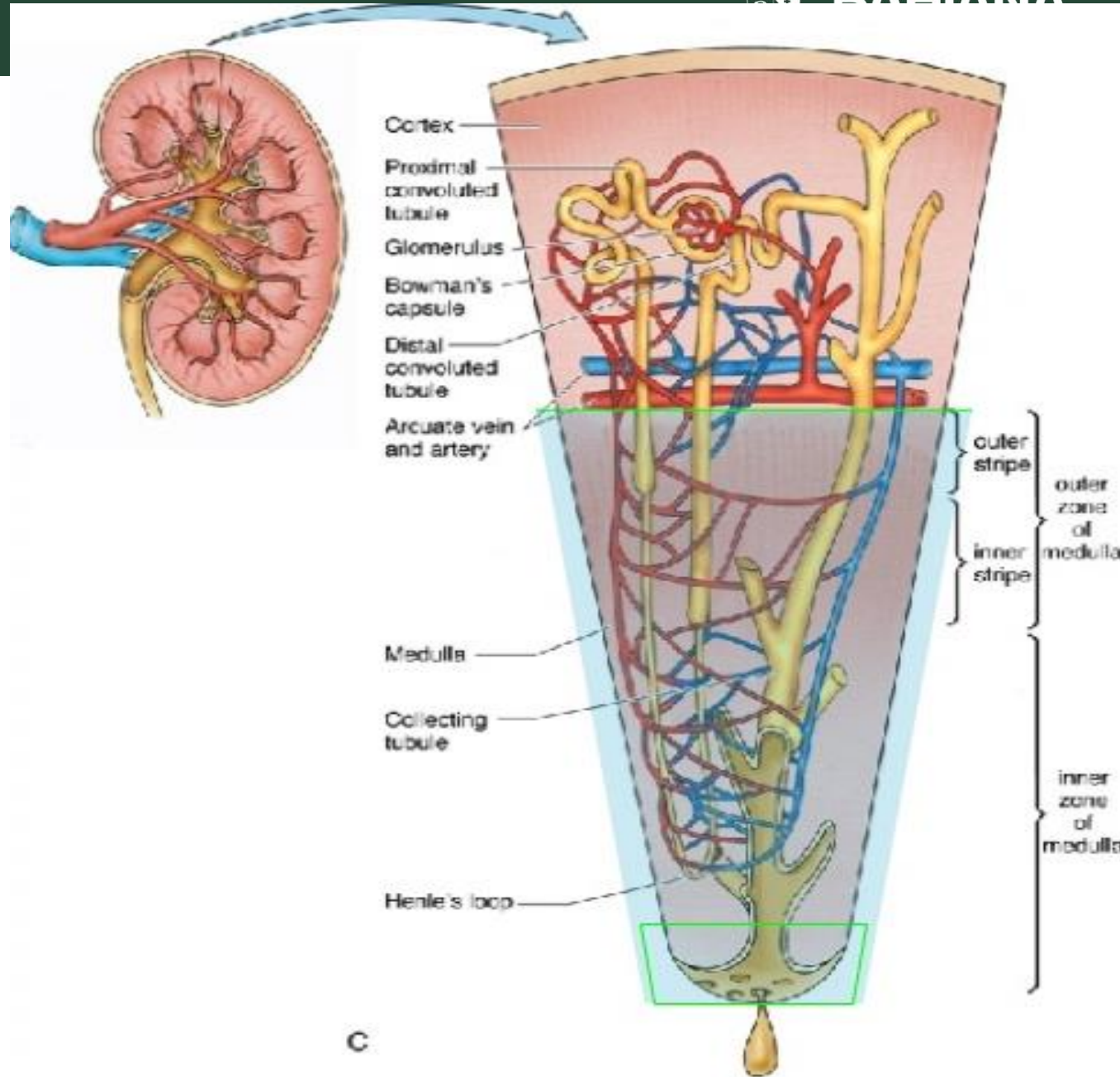


Cápsula renal



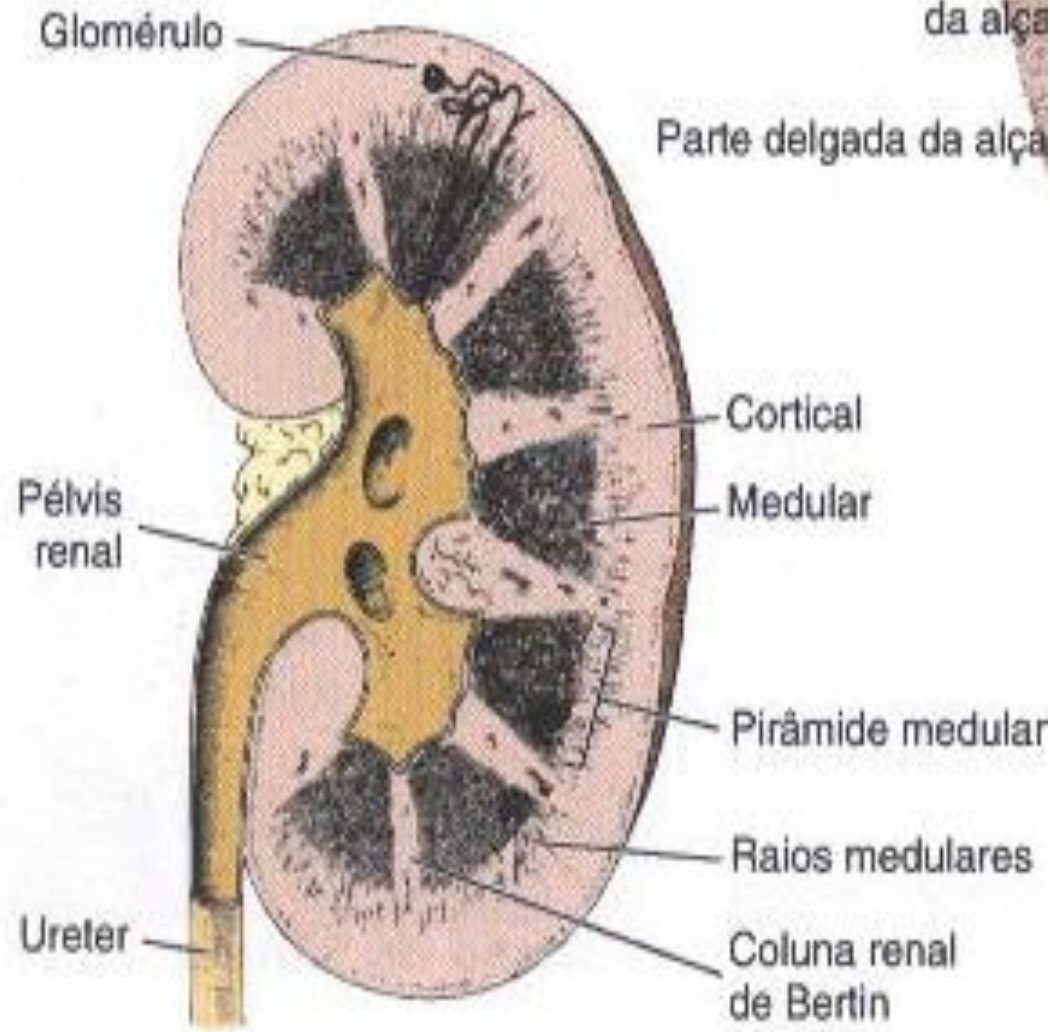
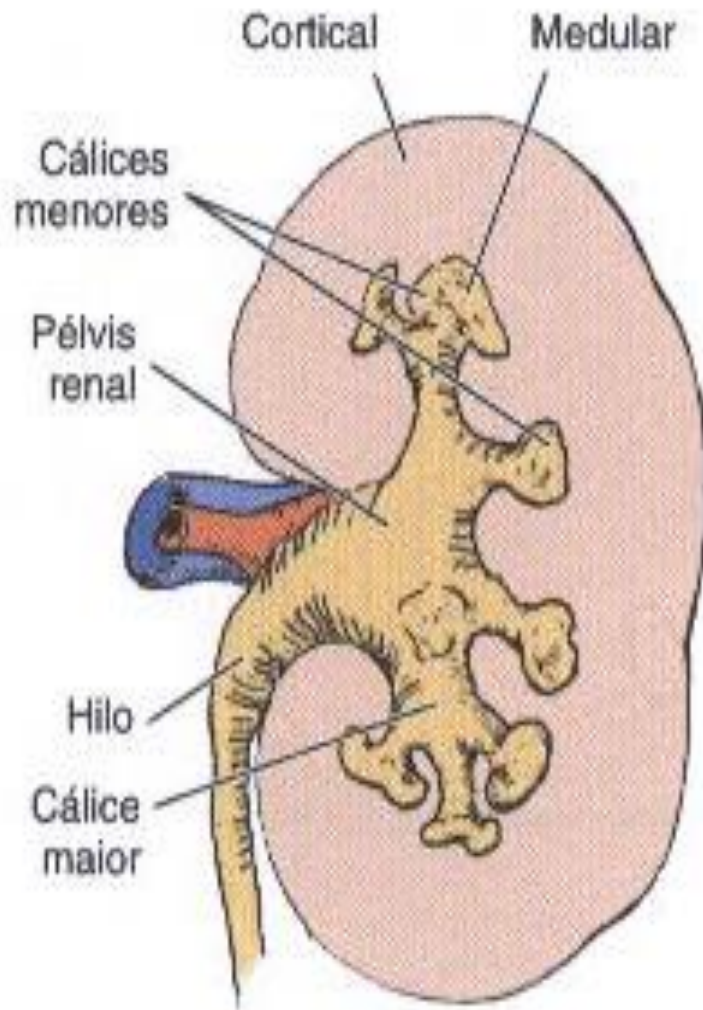
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ESCOLA DE MEDICINA E SAÚDE PÚBLICA





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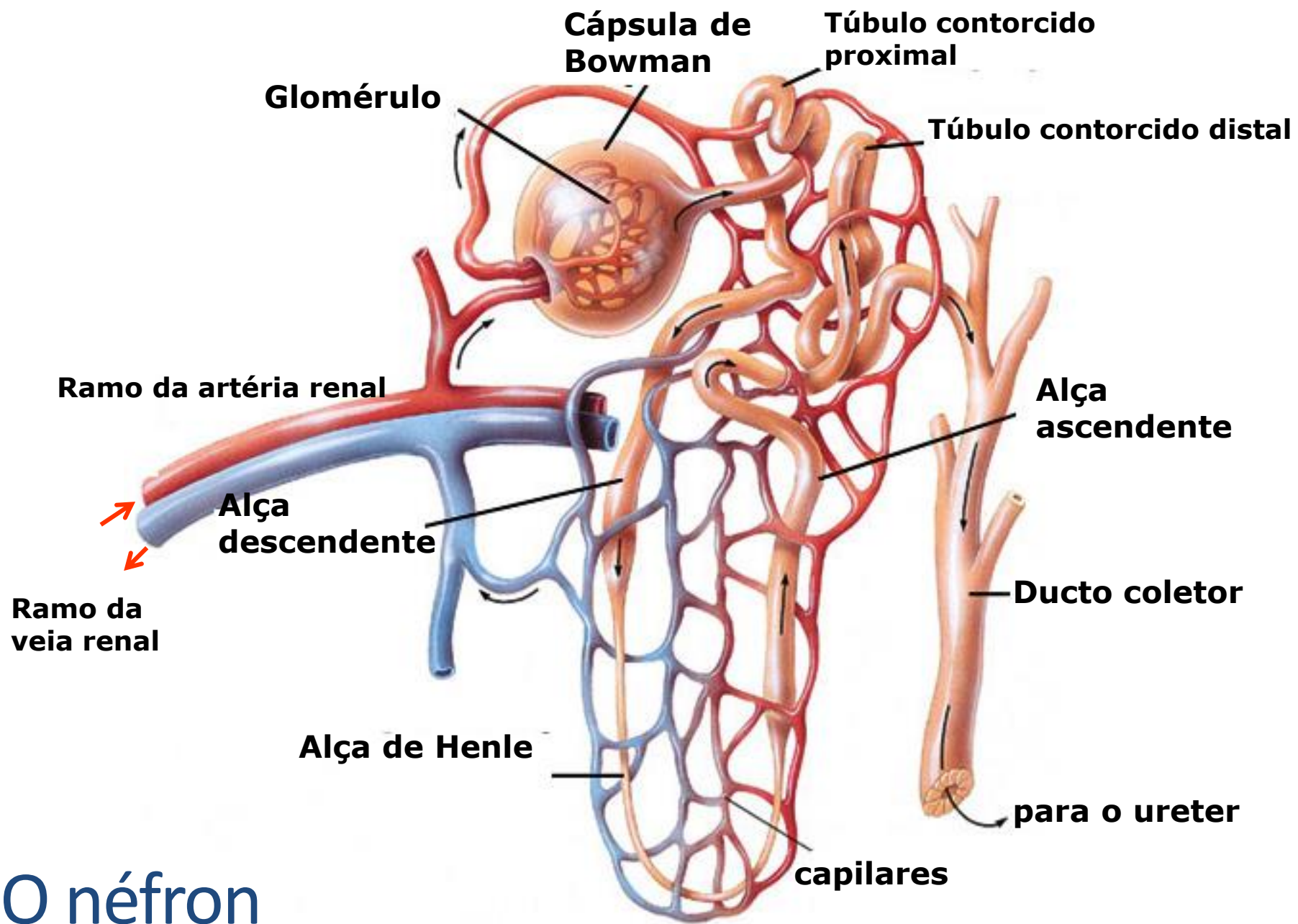
Gartner



- Cerca de 1,2 milhão em cada rim
 - Corpúsculo renal
 - Túbulo Proximal
 - Alça de Henle
 - Túbulo distal
 - Sistema de ductos coletores

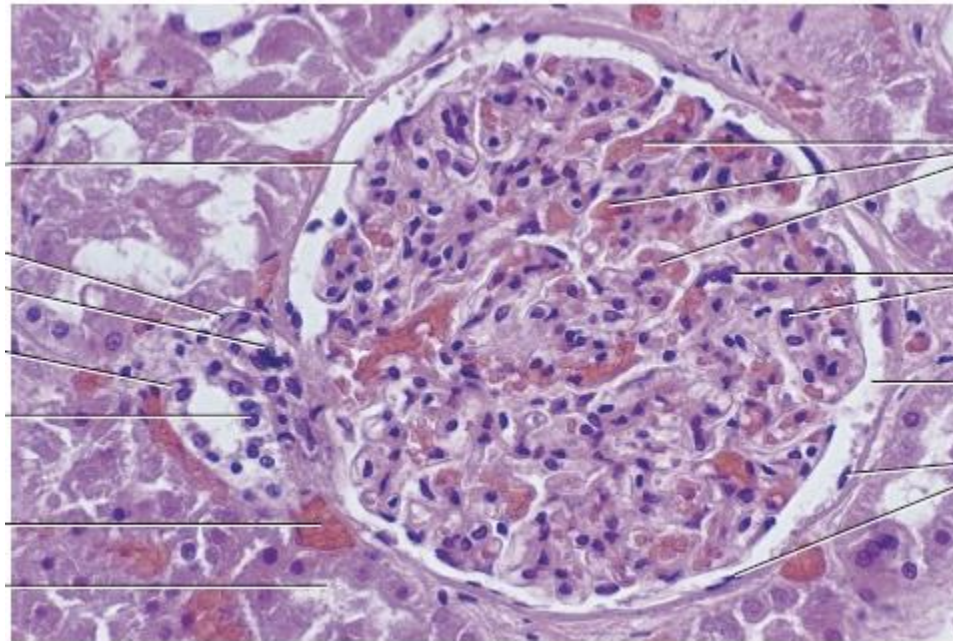
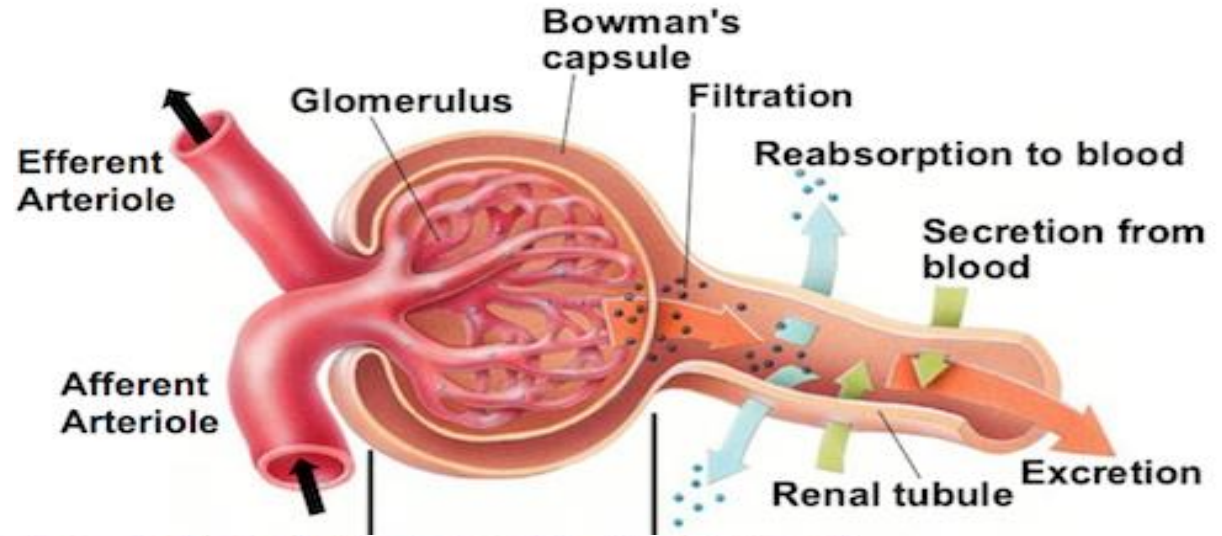


Capilares glomerulares
Cápsula de Bowman



O néfron

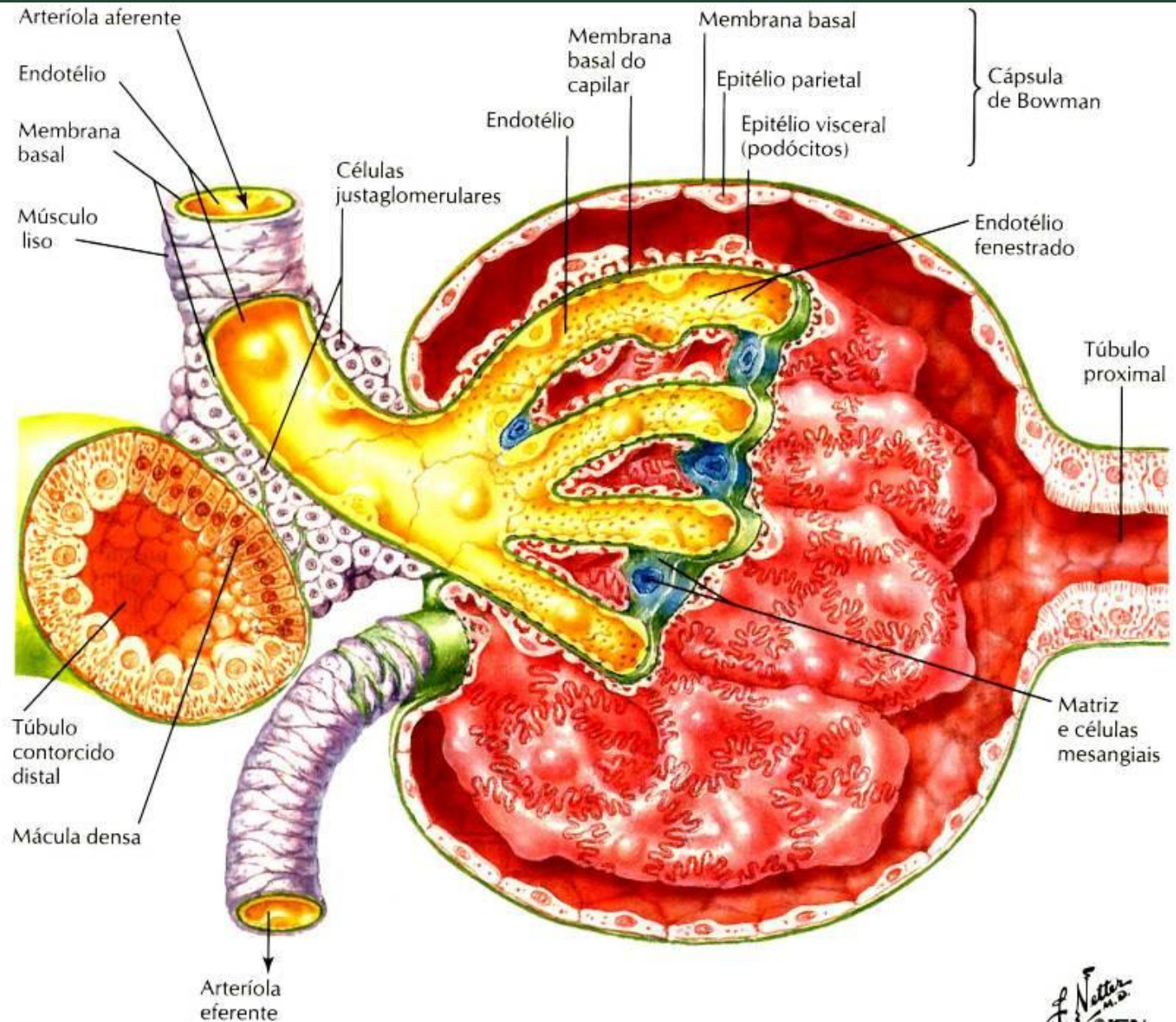
Corpúsculo renal



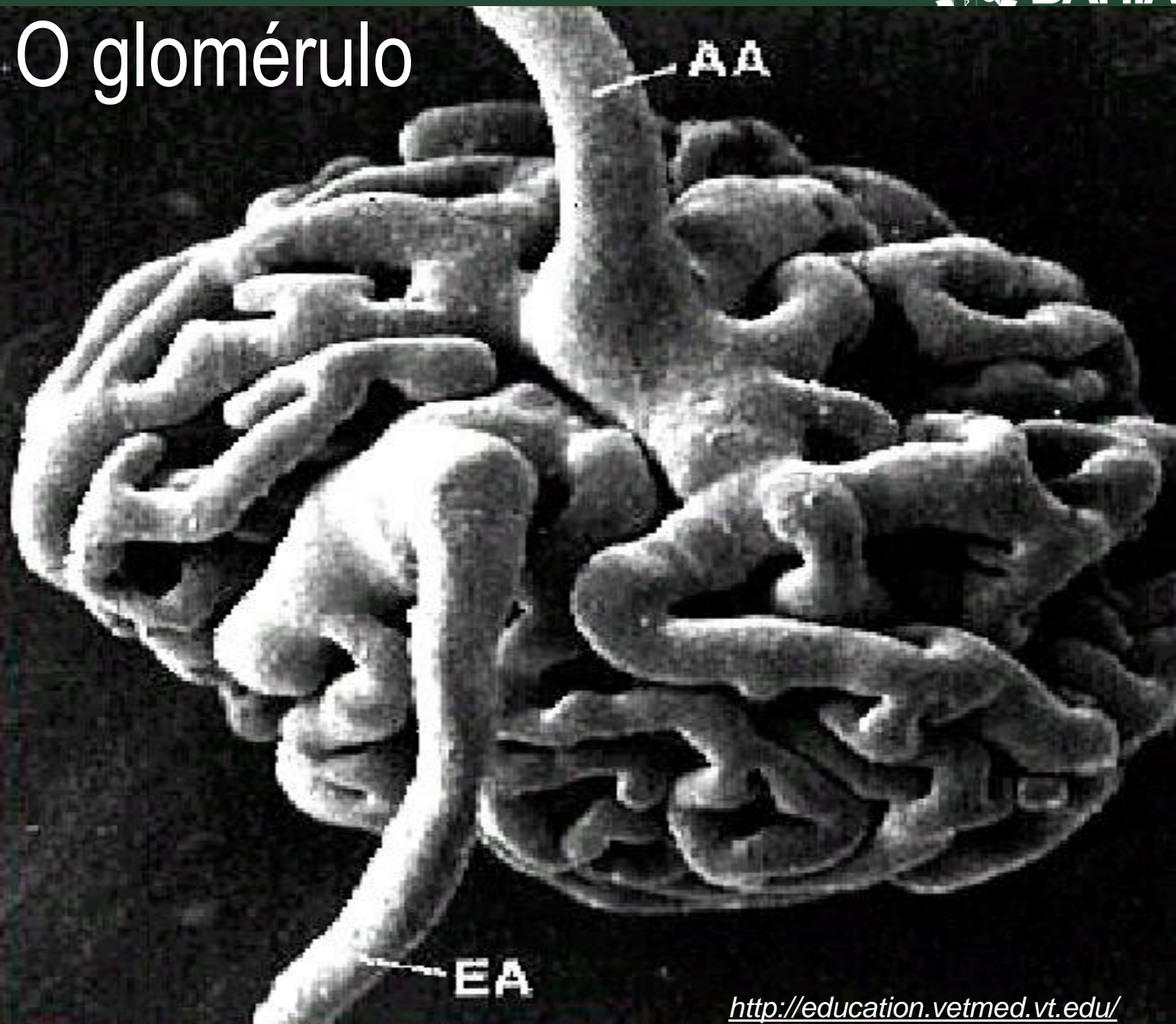
Aparelho justaglomerular



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O glomérulo

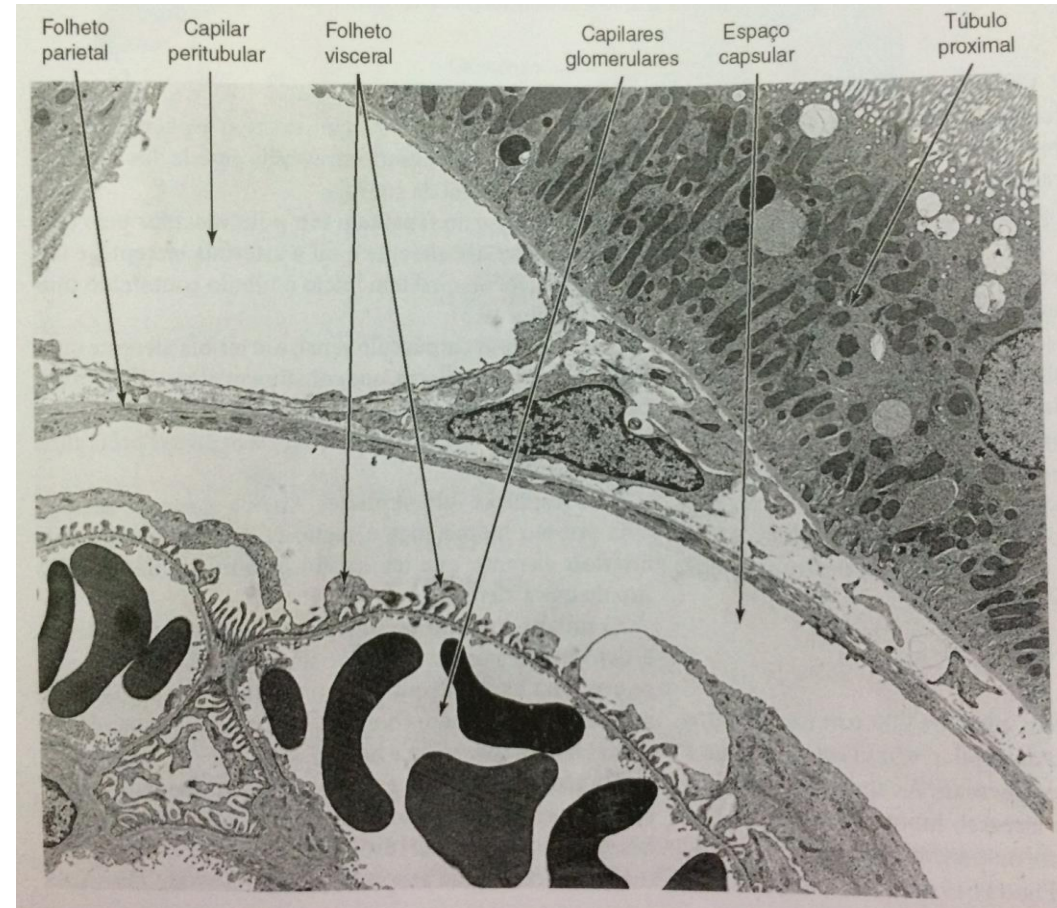


Cápsula de Bowman



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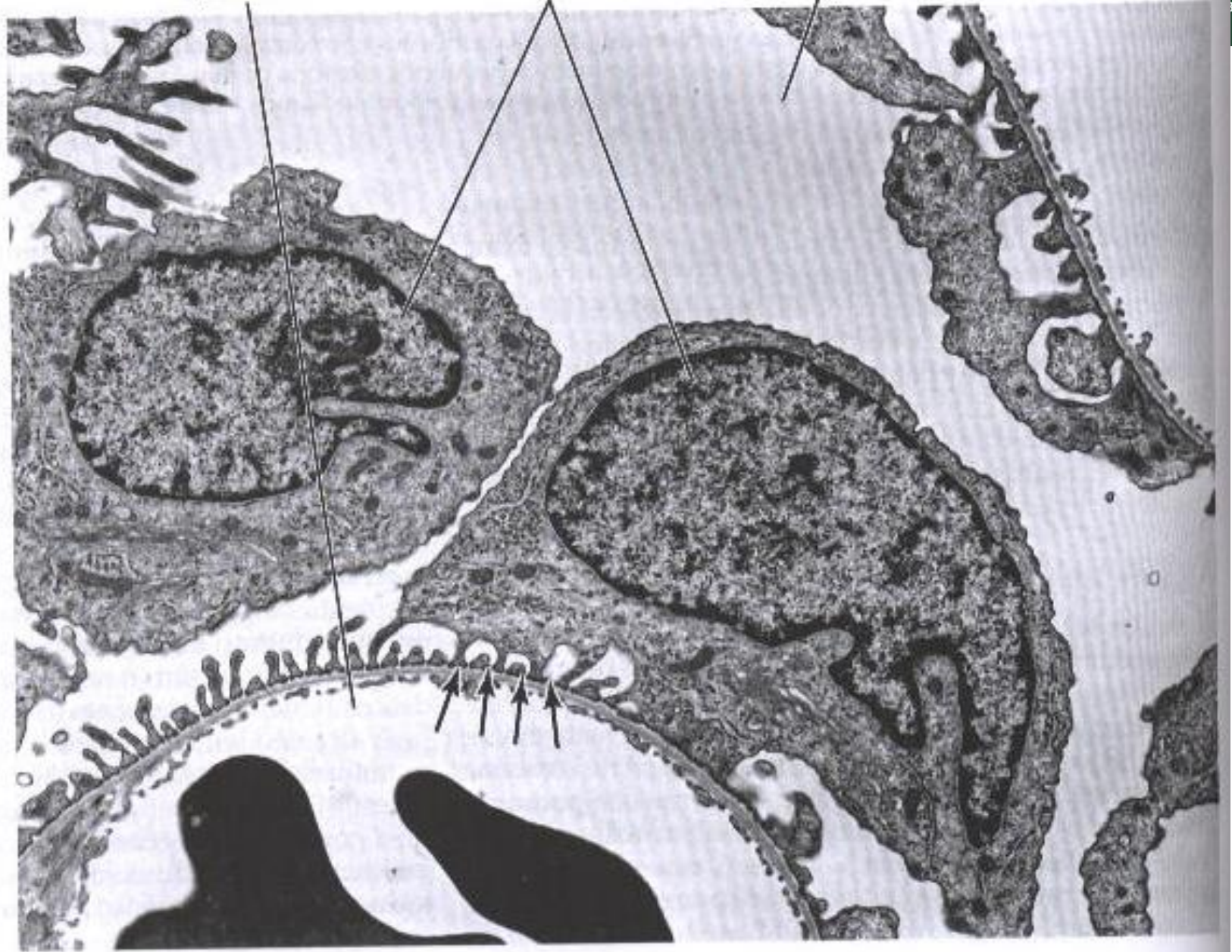
- Folheto externo ou parietal
 - Epitélio simples pavimentoso
 - Fibras reticulares
- Folheto interno ou visceral
 - Podócitos e seus prolongamentos
 - Fendas de filtração



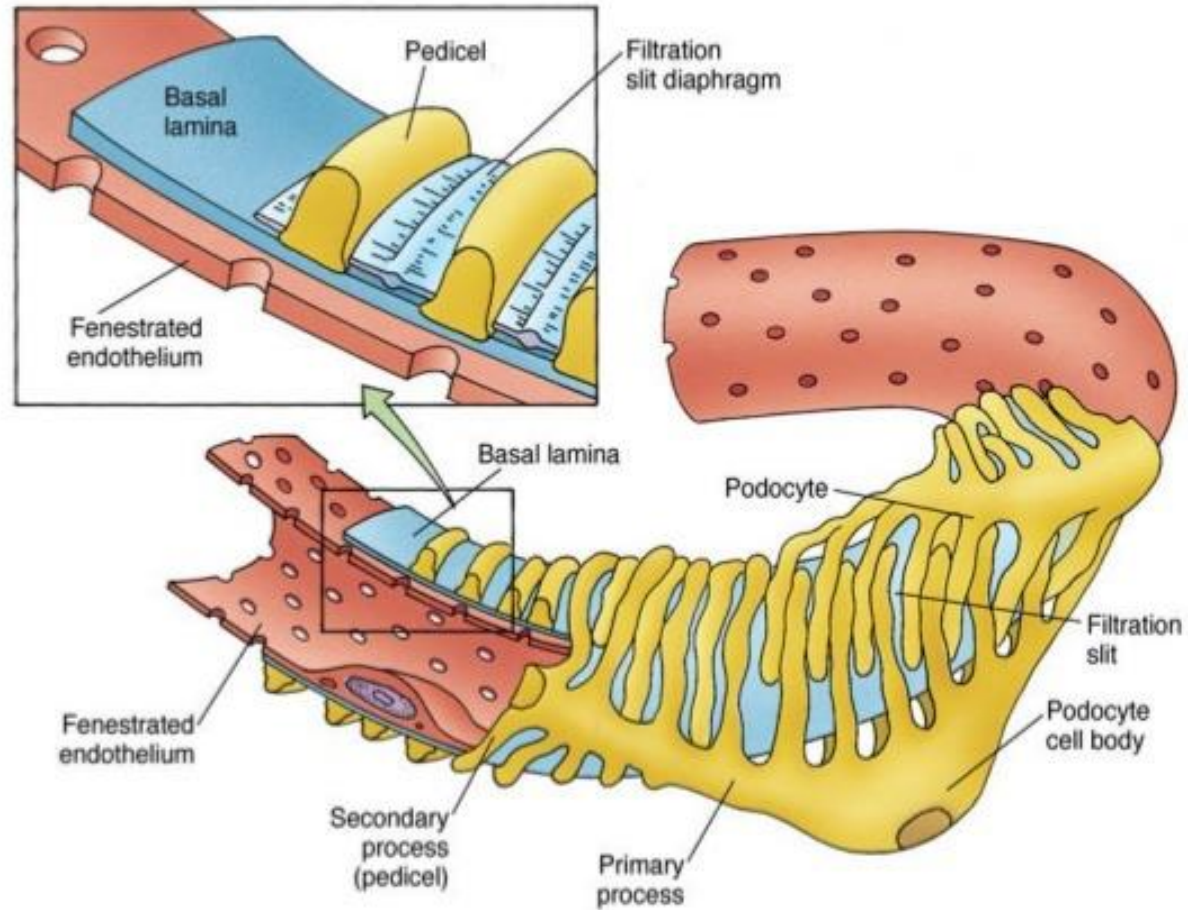
Capilar
glomerular

Podócitos

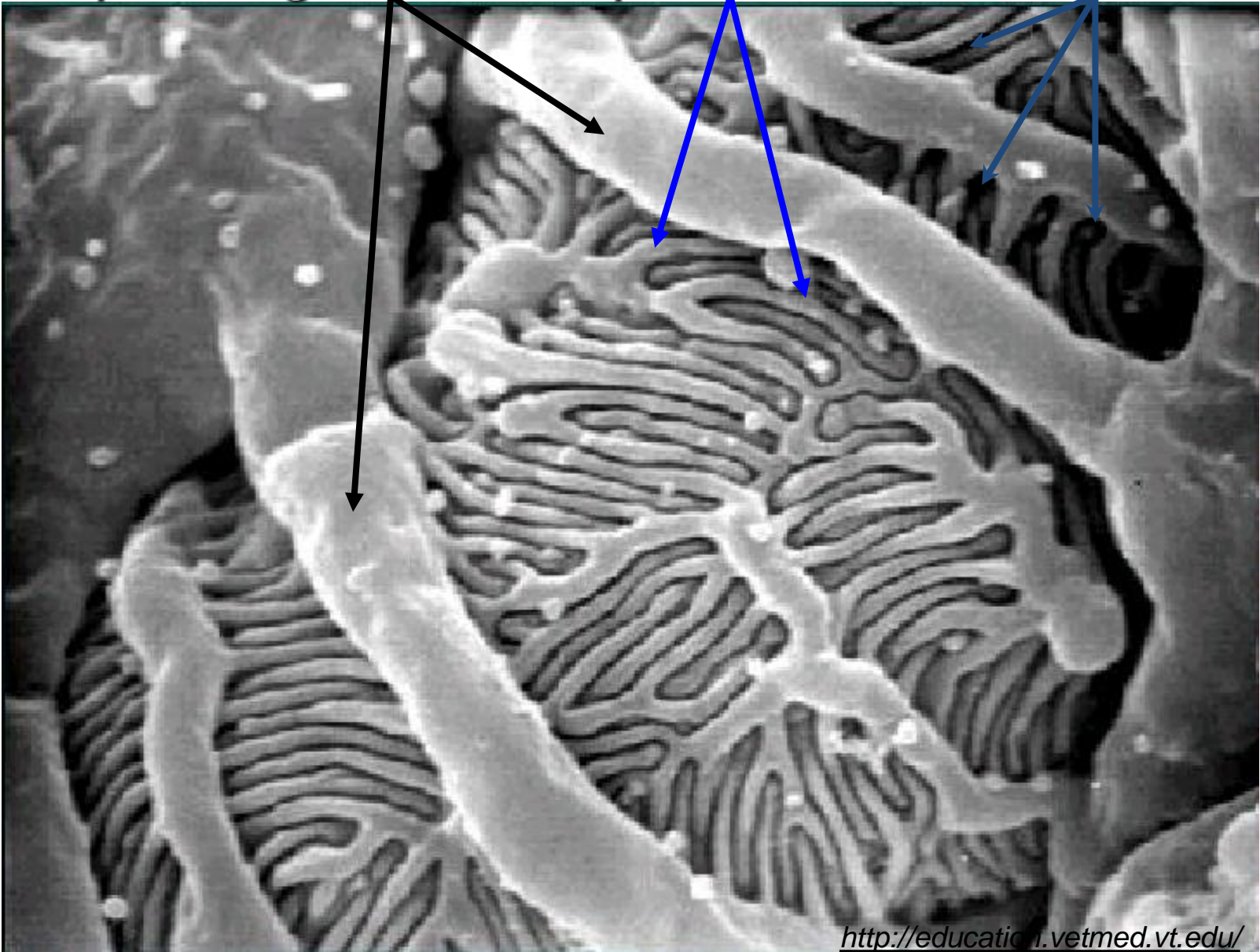
Espaço
capsular



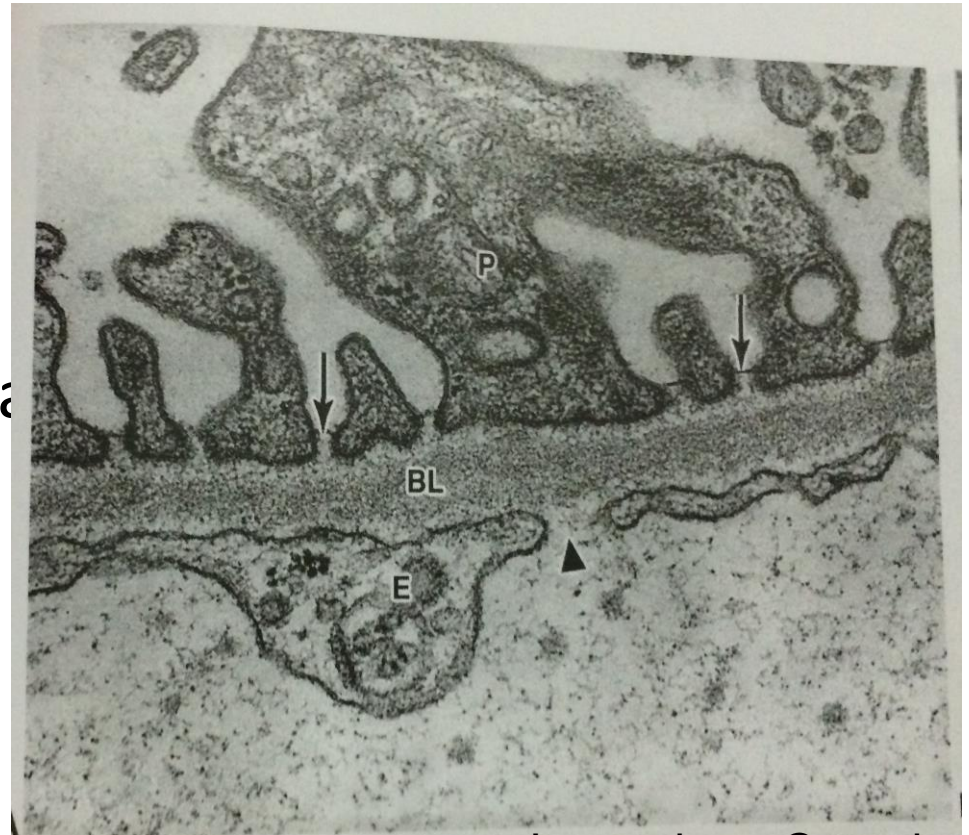
Podócitos



prolongamentos, pedicelos e fendas

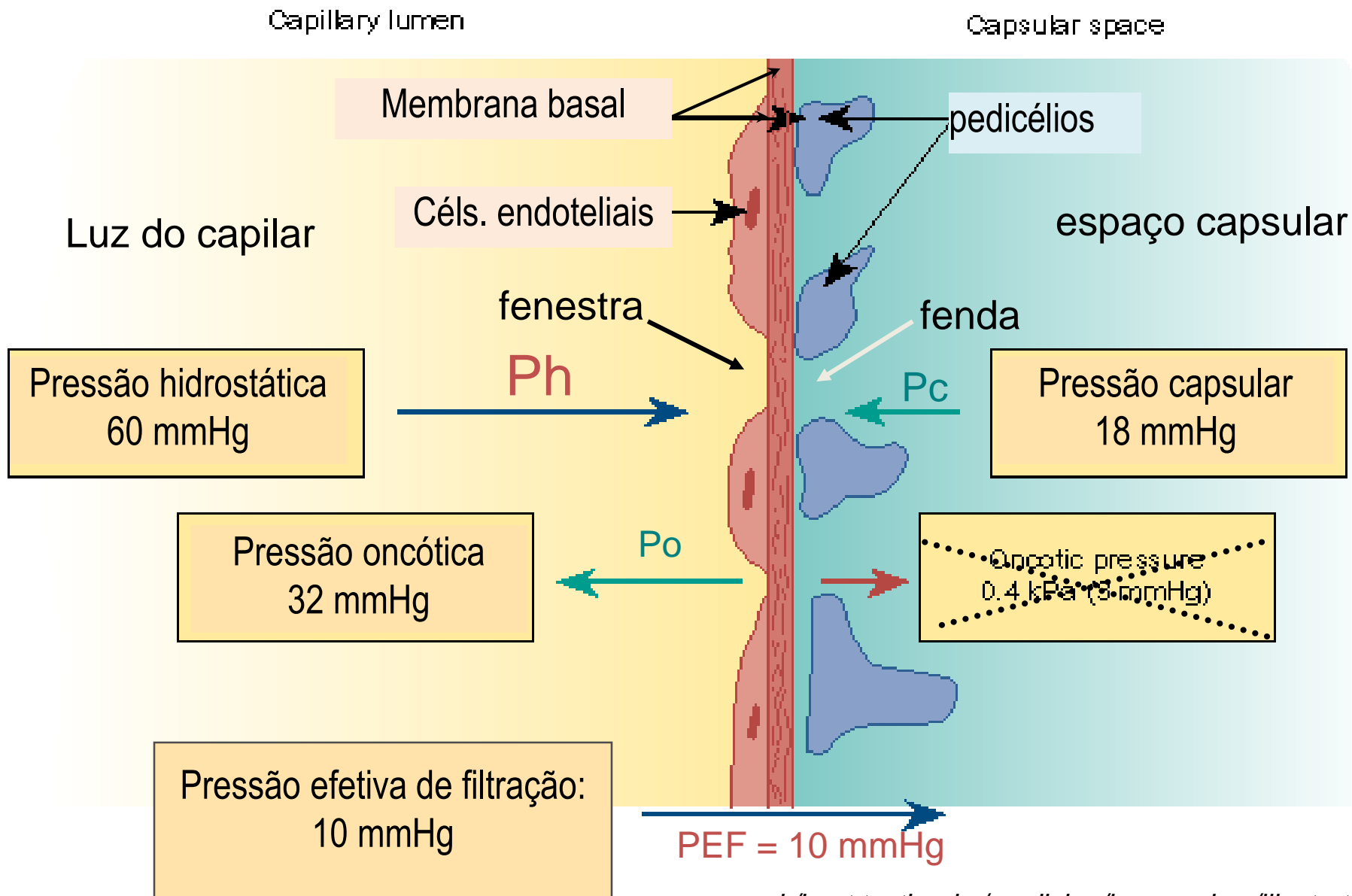


- Fusão das lâminas basais (endotélio + podócitos)
 - Lâmina rara interna
 - fibronectina
 - Lâmina densa
 - Colágeno IV e laminina
 - Proteoglicanos aniônicos



Junqueira e Carneiro

Determinantes da FG

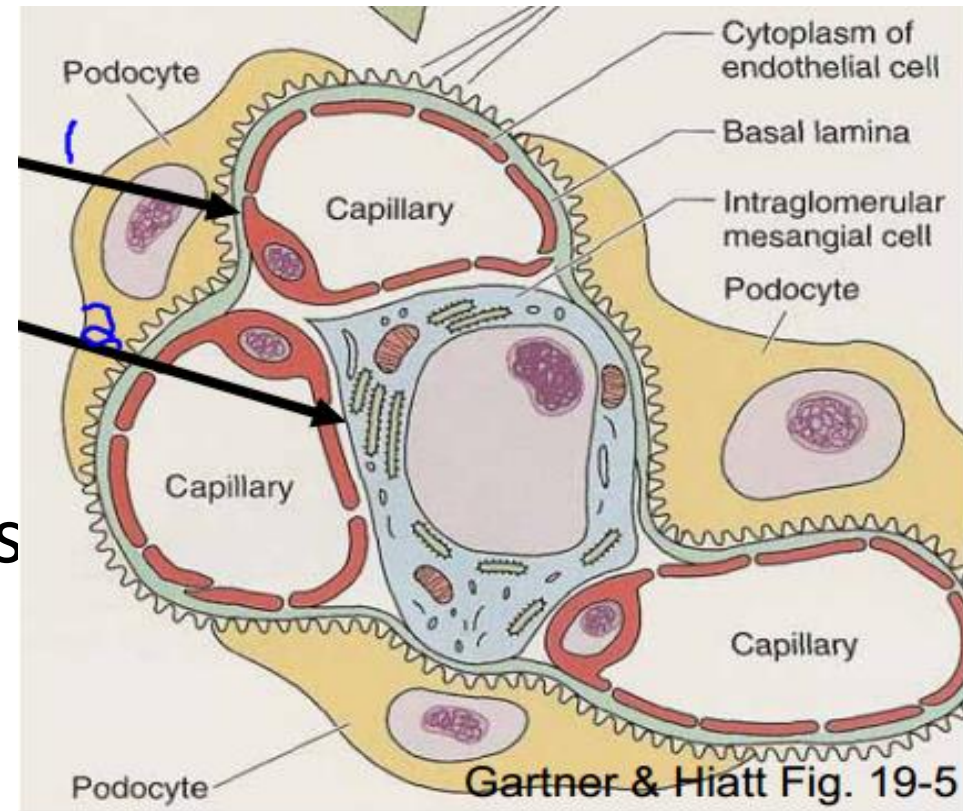


Células mesangiais



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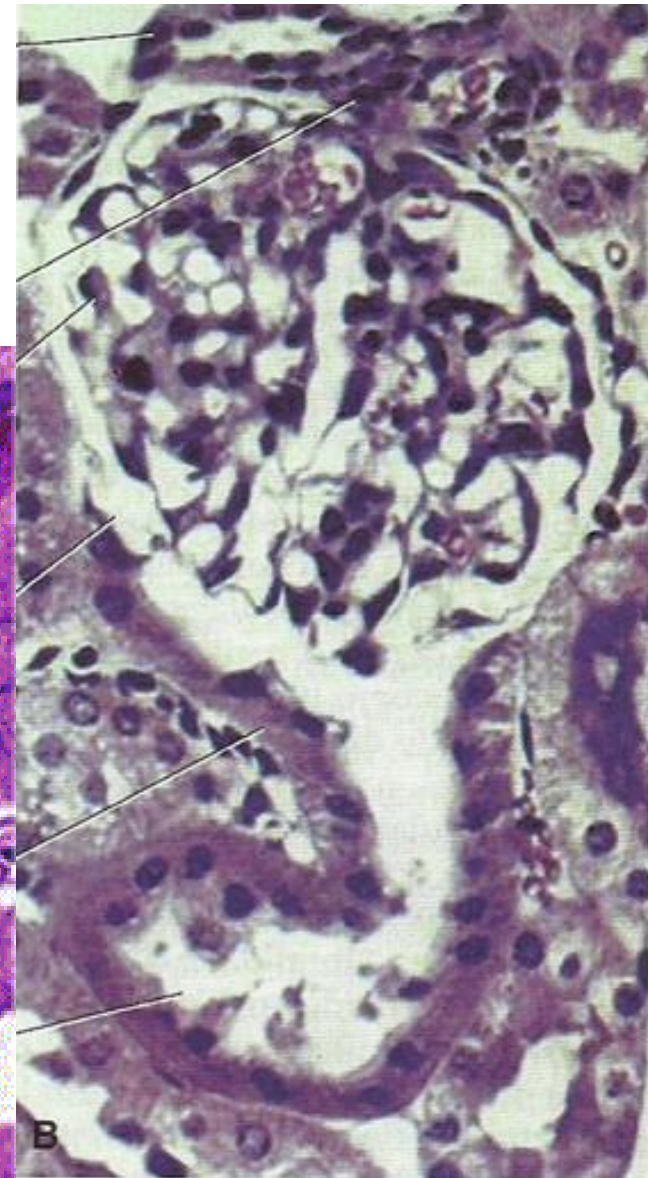
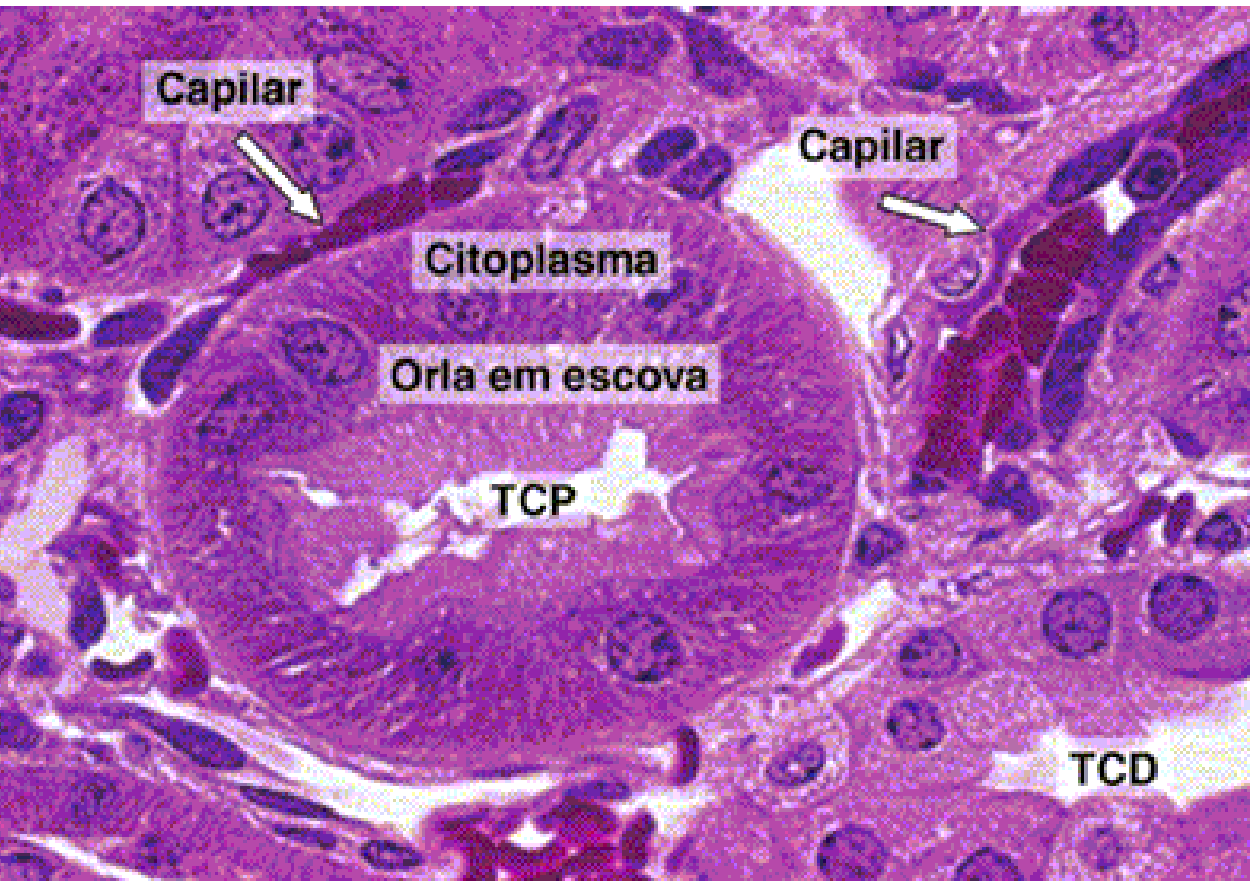
- Localizadas entre os espaços dos capilares
- São fagócitos e produzem MEC
- Produzem mediadores químicos
- São contráteis
 - angiotensina II: reduz o fluxo sanguíneo
 - fator natriurético:

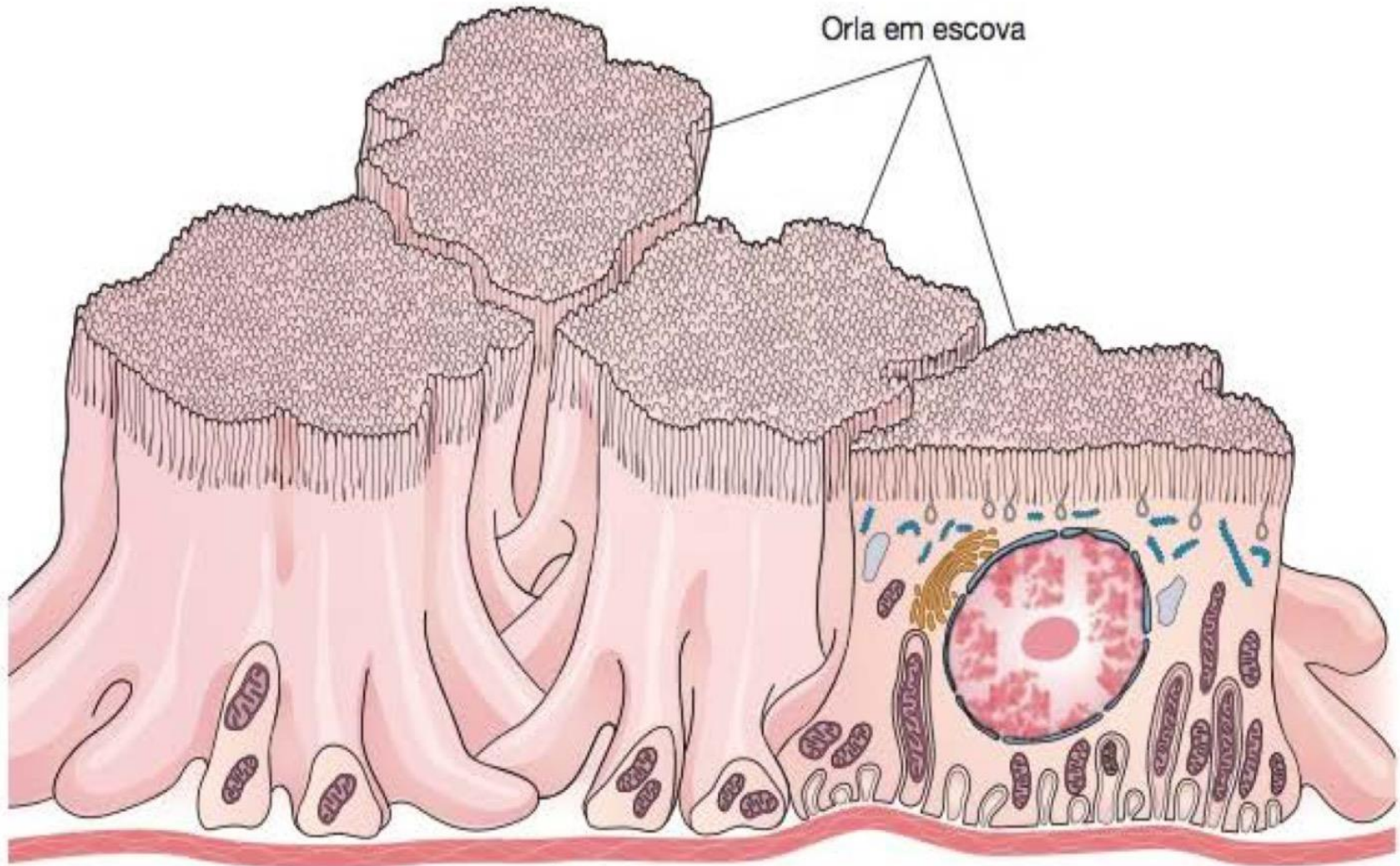


Túbulo contorcido proximal



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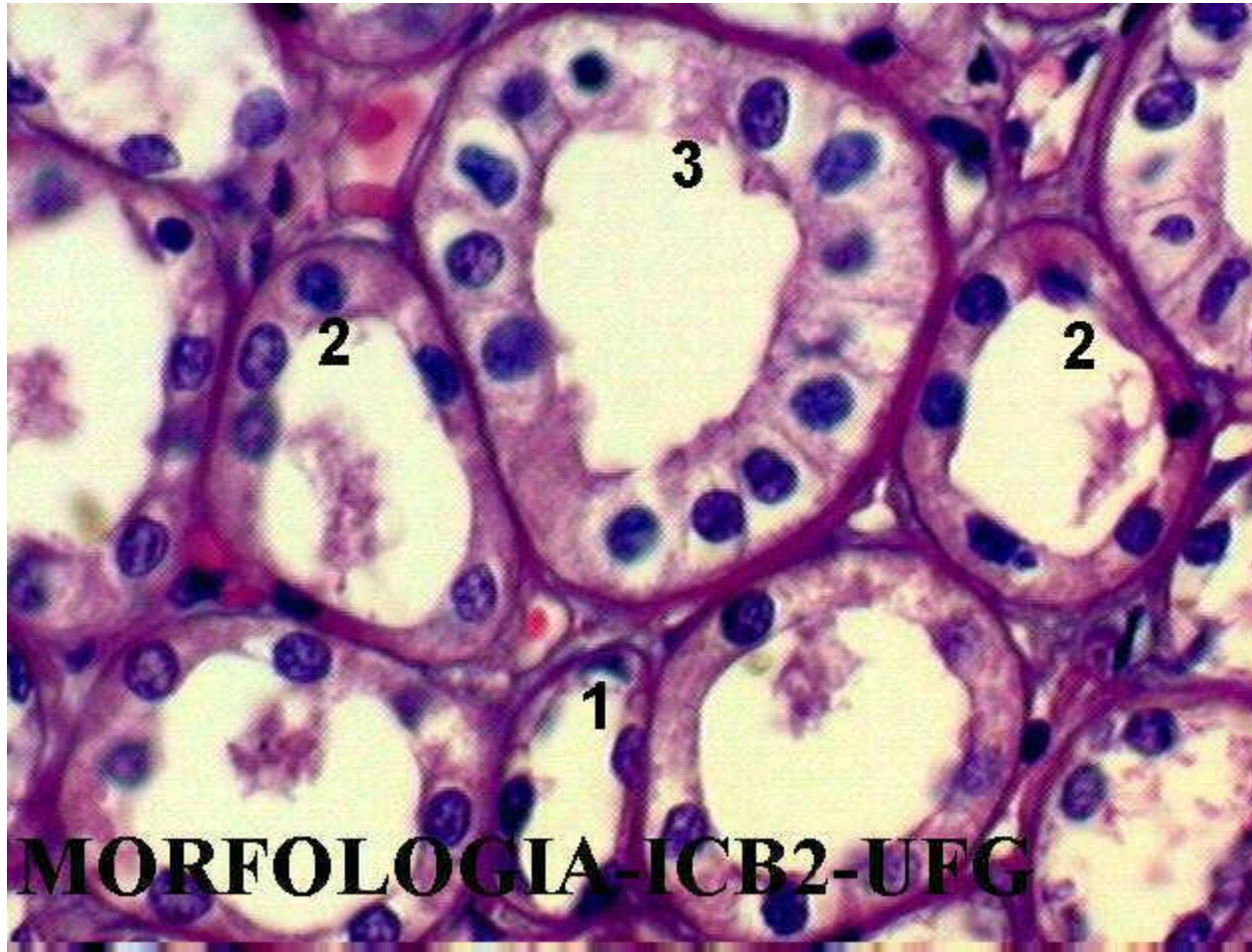




Alça de Henle



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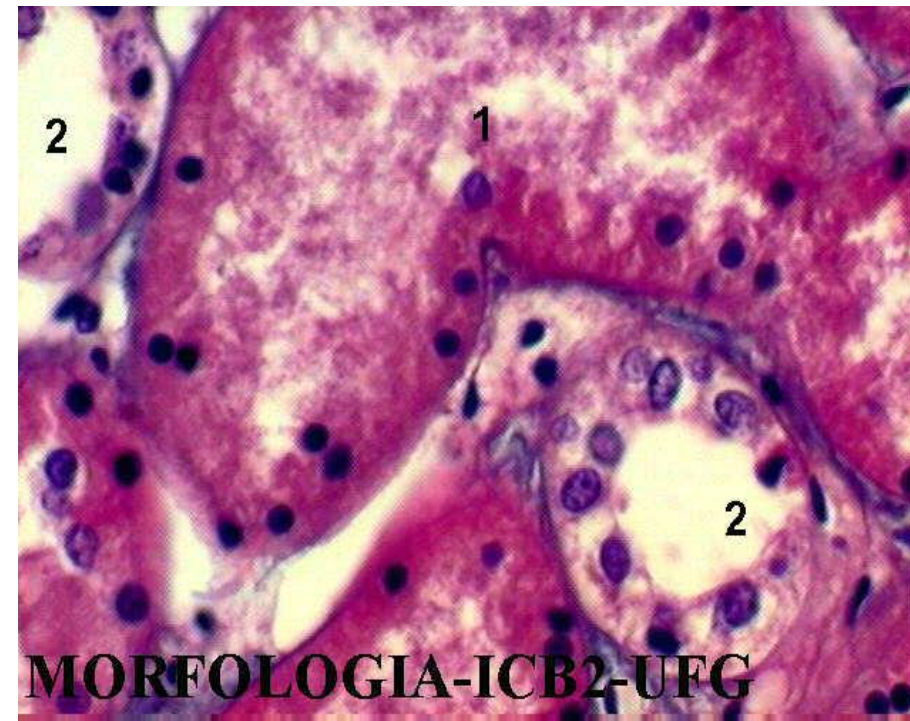
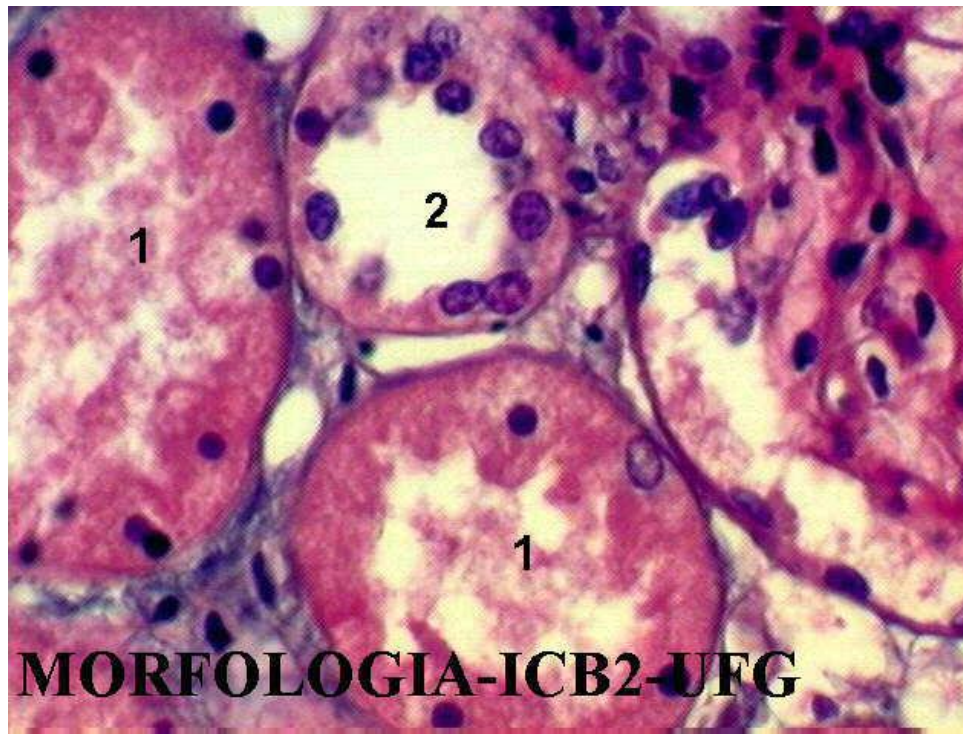
- Simples pavimentoso (delgada)
 - ↑ permeável, entrada de Na, Cl e uréia
 - ↑ AQ-1: saída de água

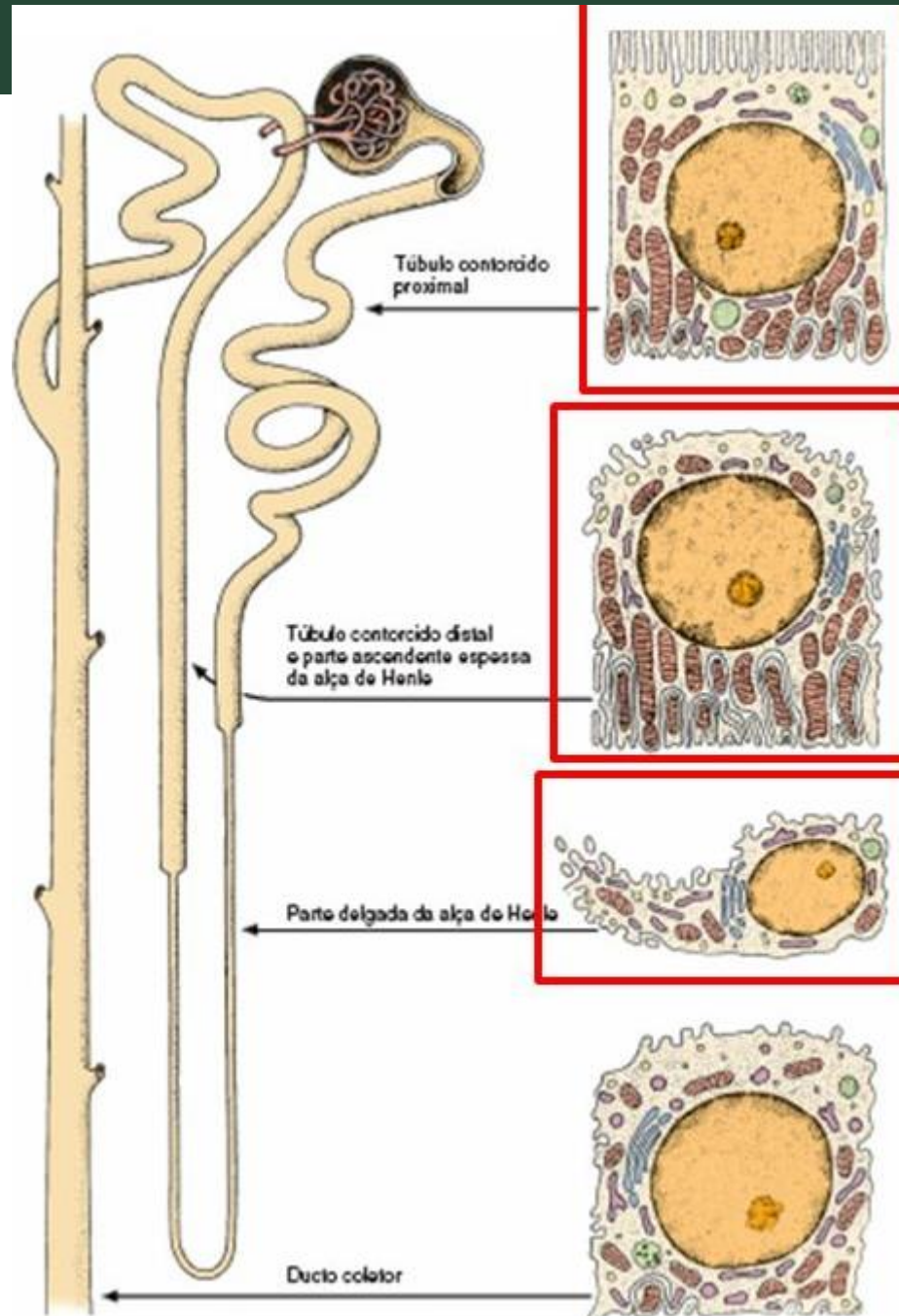
- Simples cúbico (espessa)
 - Impermeável a água e uréia
 - Bombas de Na e Cl
 - Interstício medular hipertônico

Túbulo contorcido distal

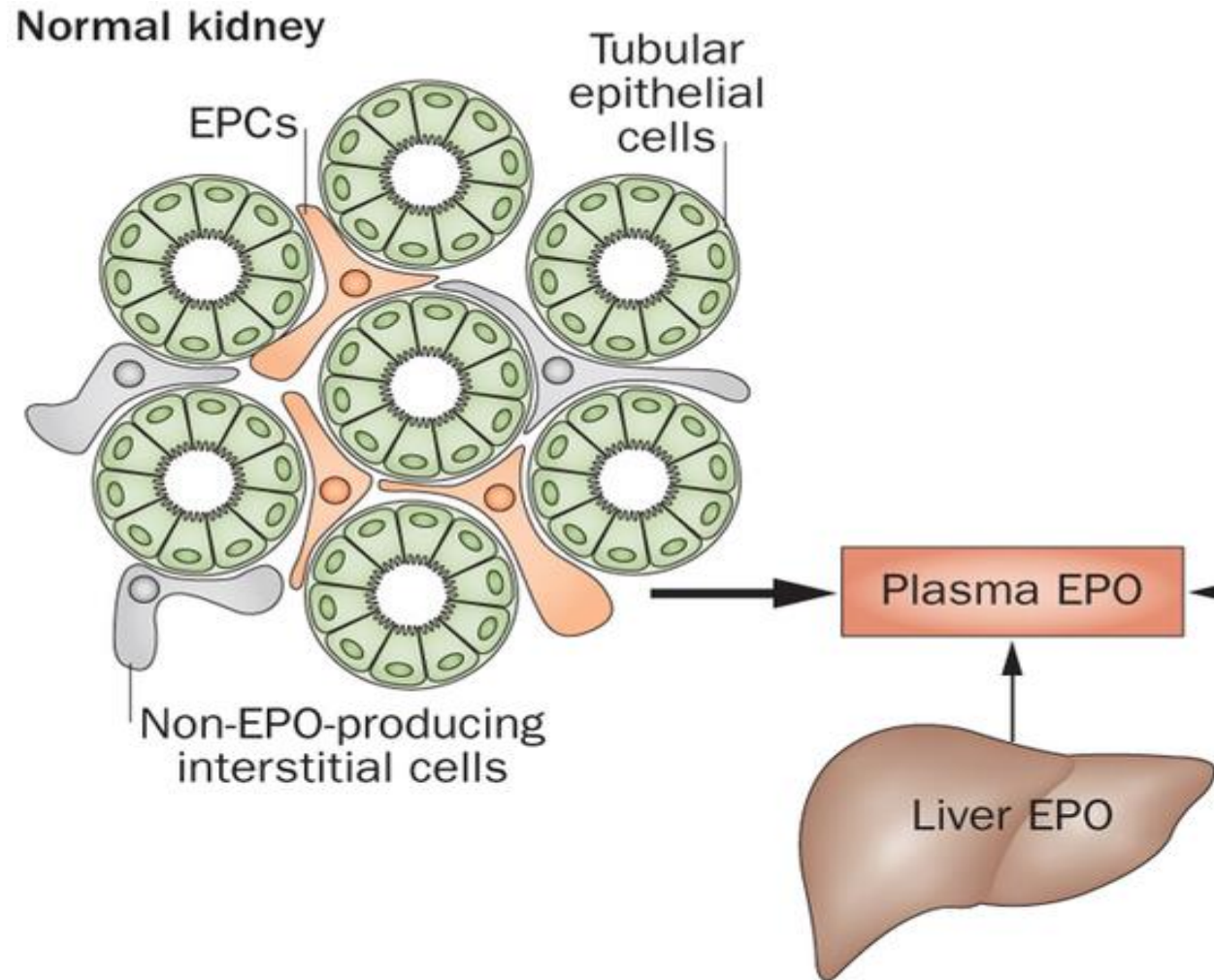


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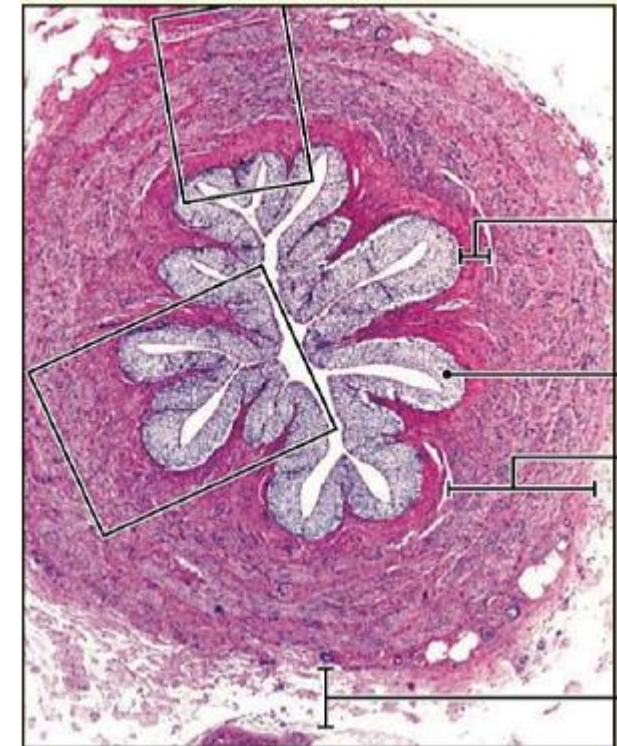
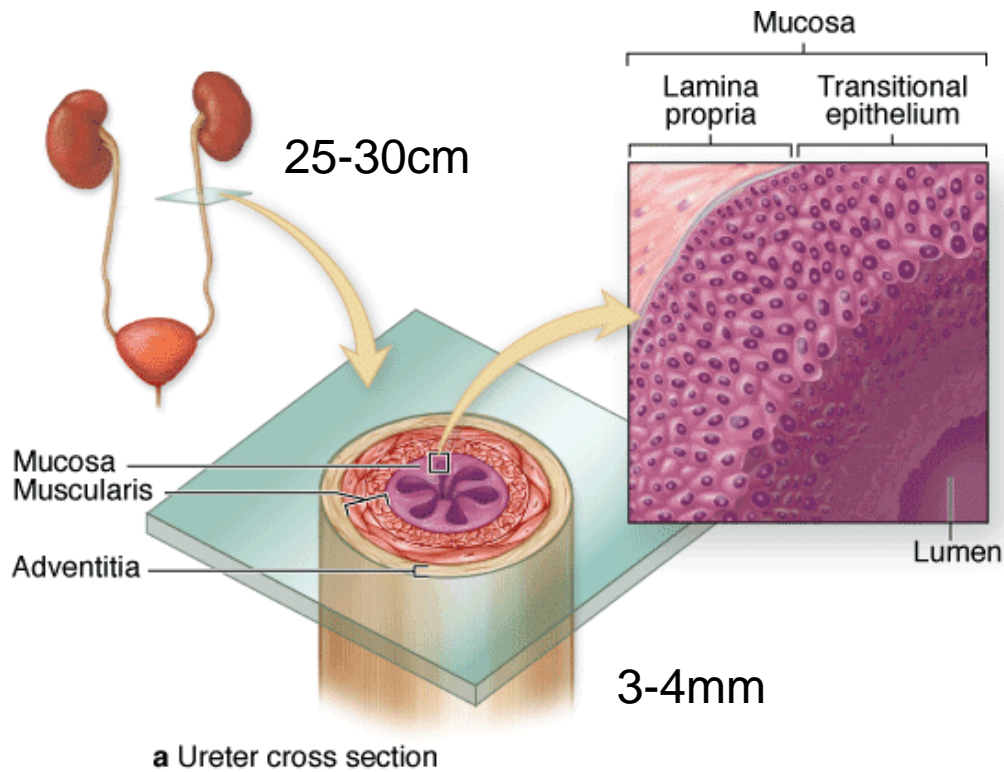




Interstício renal



Ureter

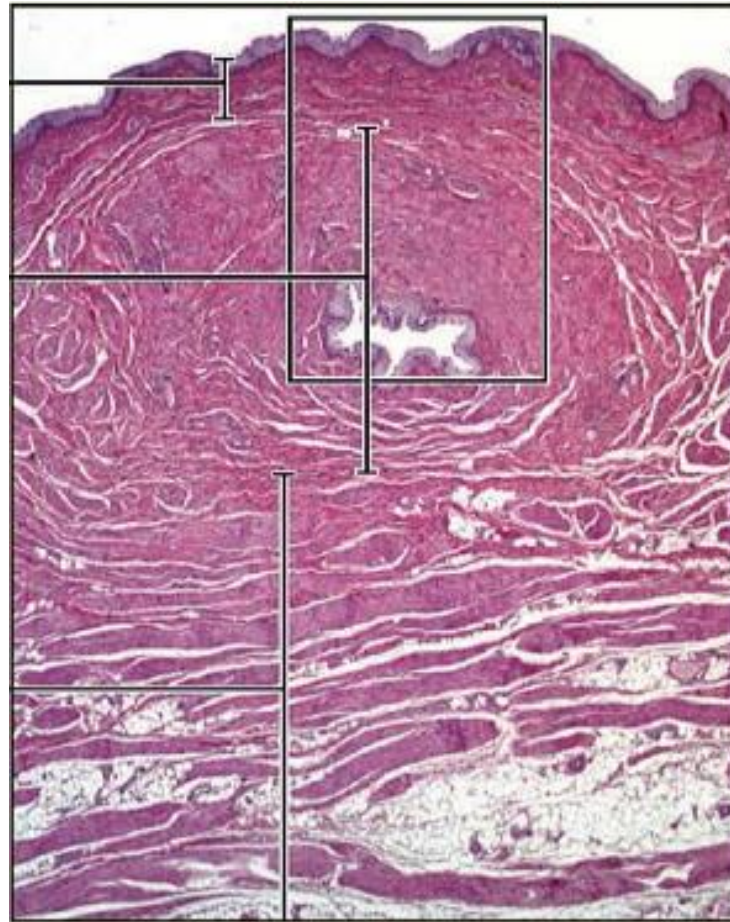


Source: Mescher AL: *Junqueira's Basic Histology: Text and Atlas, 12th Edition*: <http://www.accessmedicine.com>
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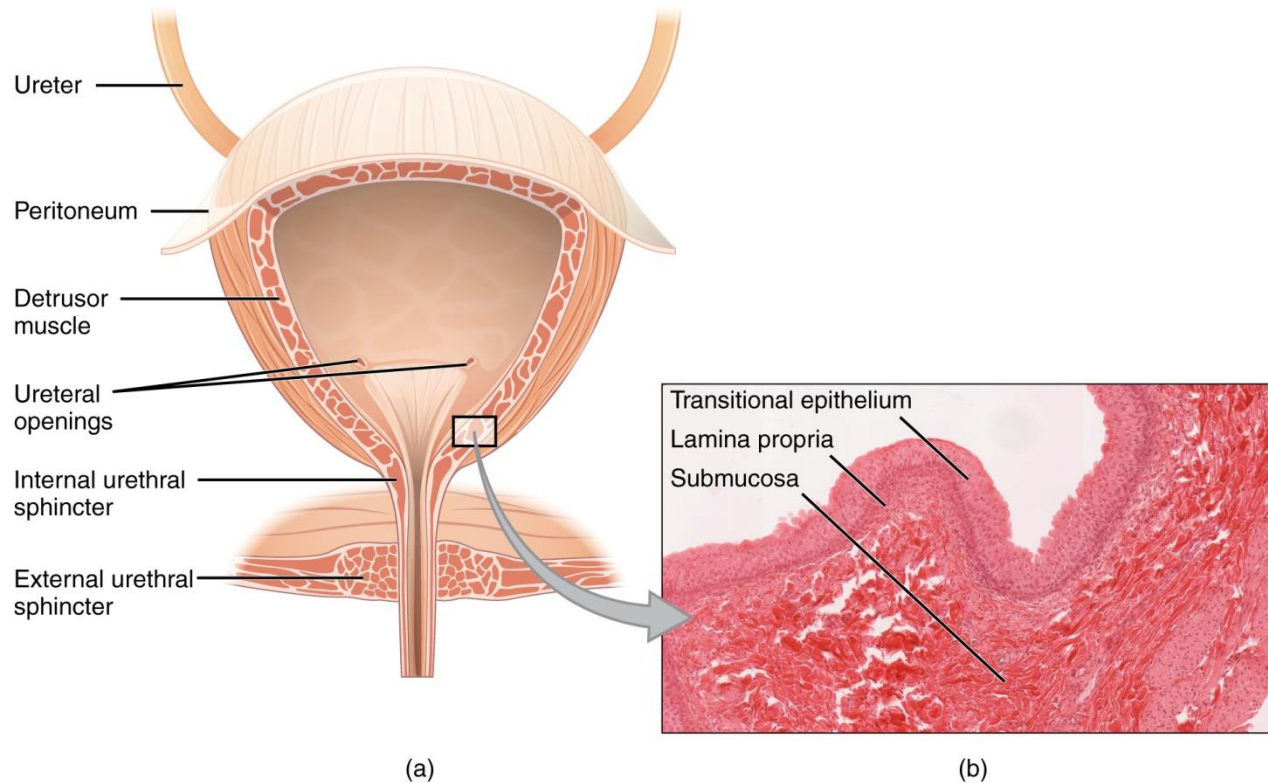
Óstio do ureter na bexiga



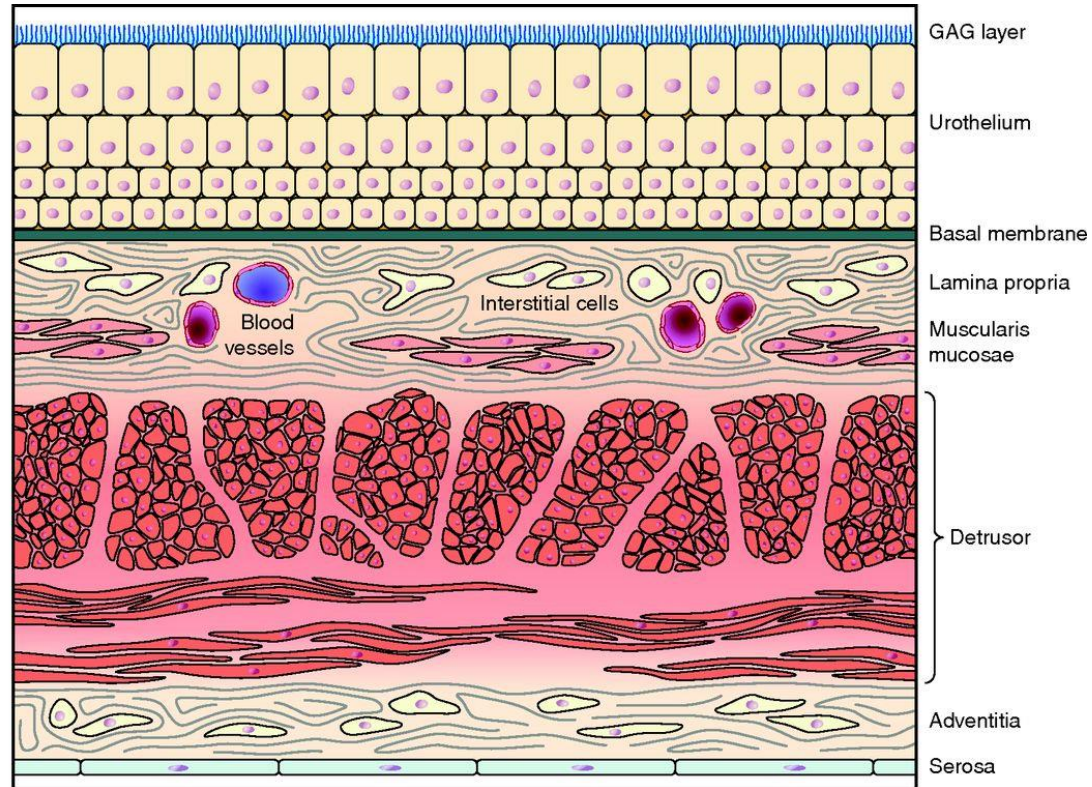
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Bexiga



Bexiga

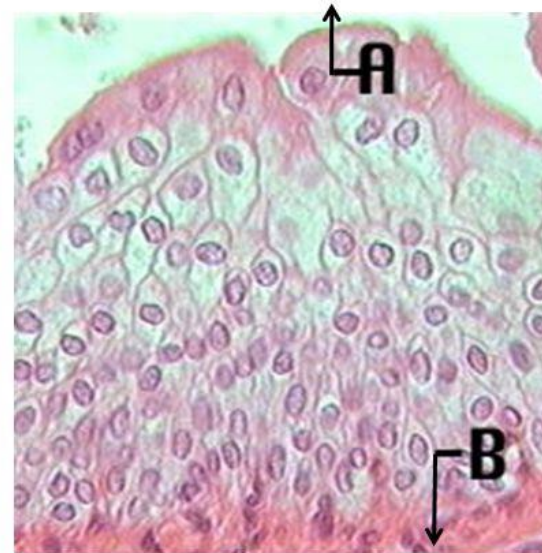


Epitélio de Transição

Presente no uretér e na
bexiga urinária

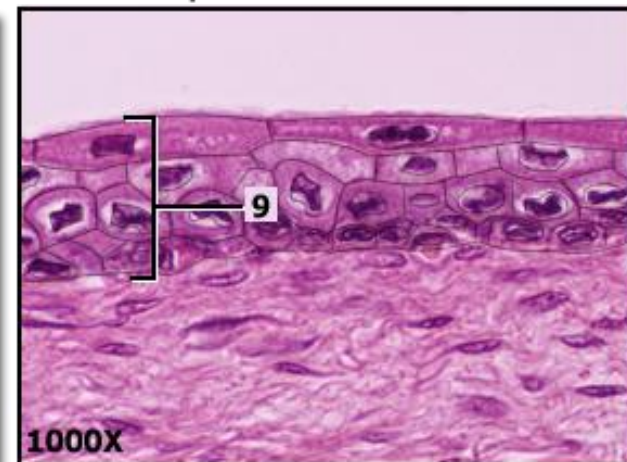
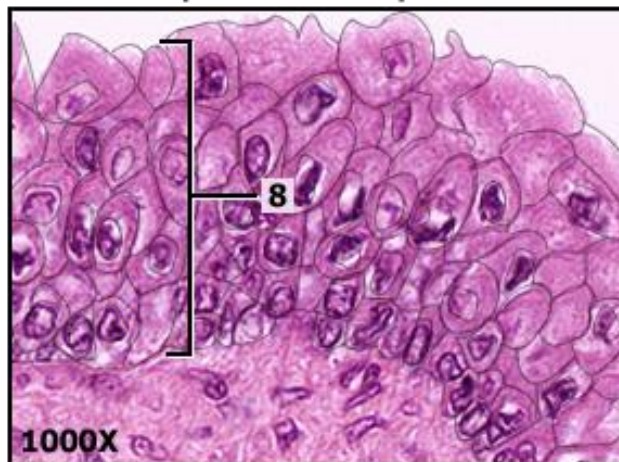
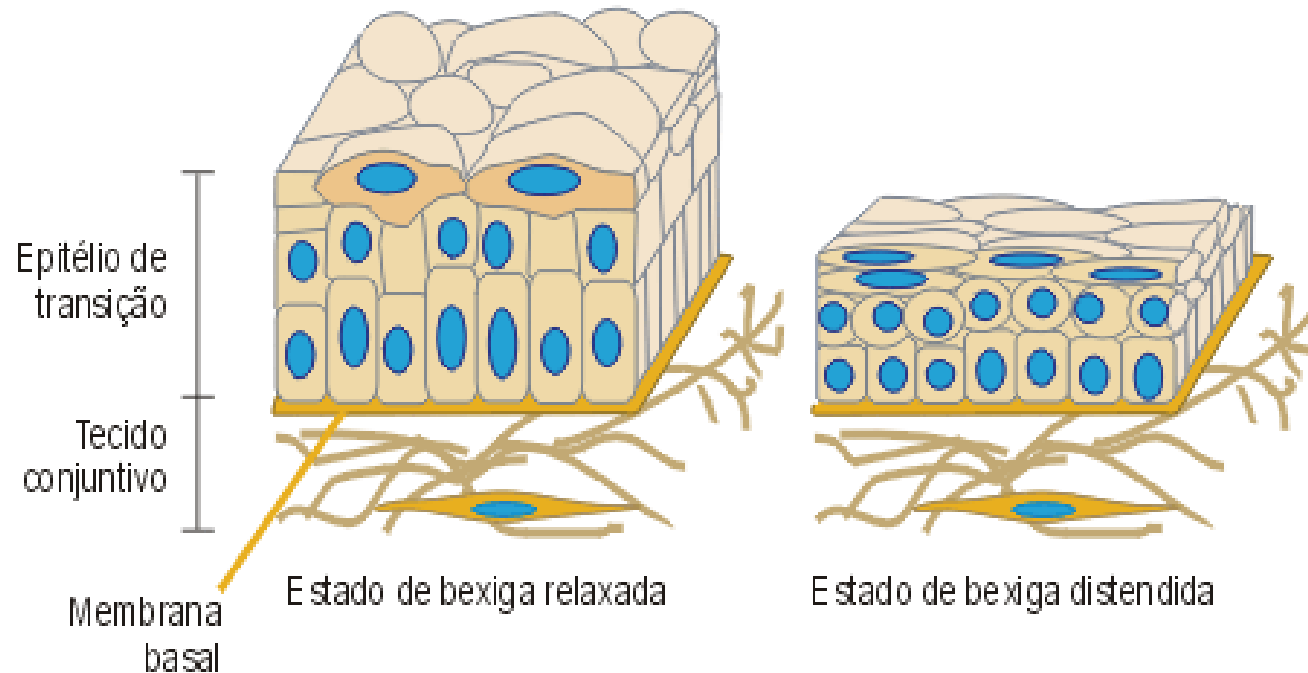


Células da superfície:
Maiores, arredondadas



Células internas:
mais achatadas

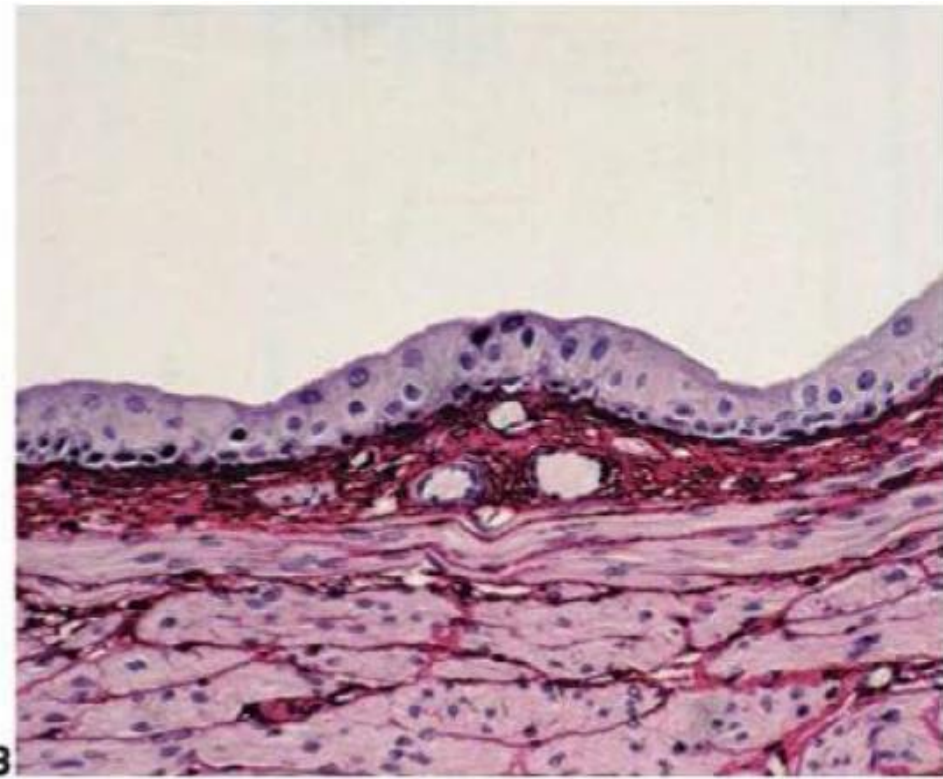
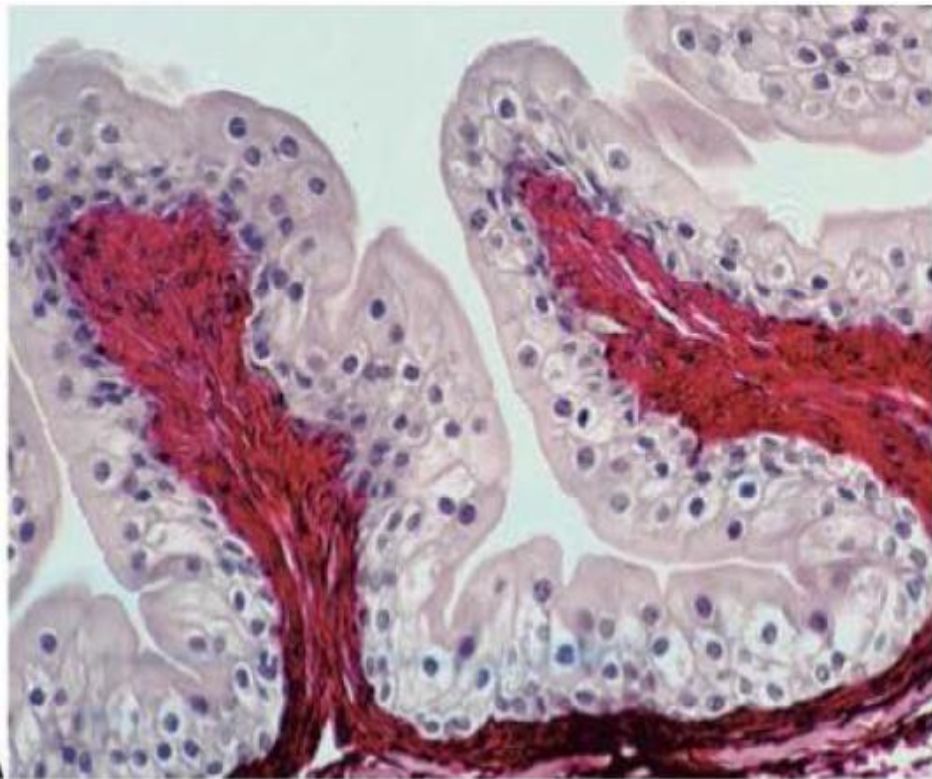
Bexiga



Bexiga



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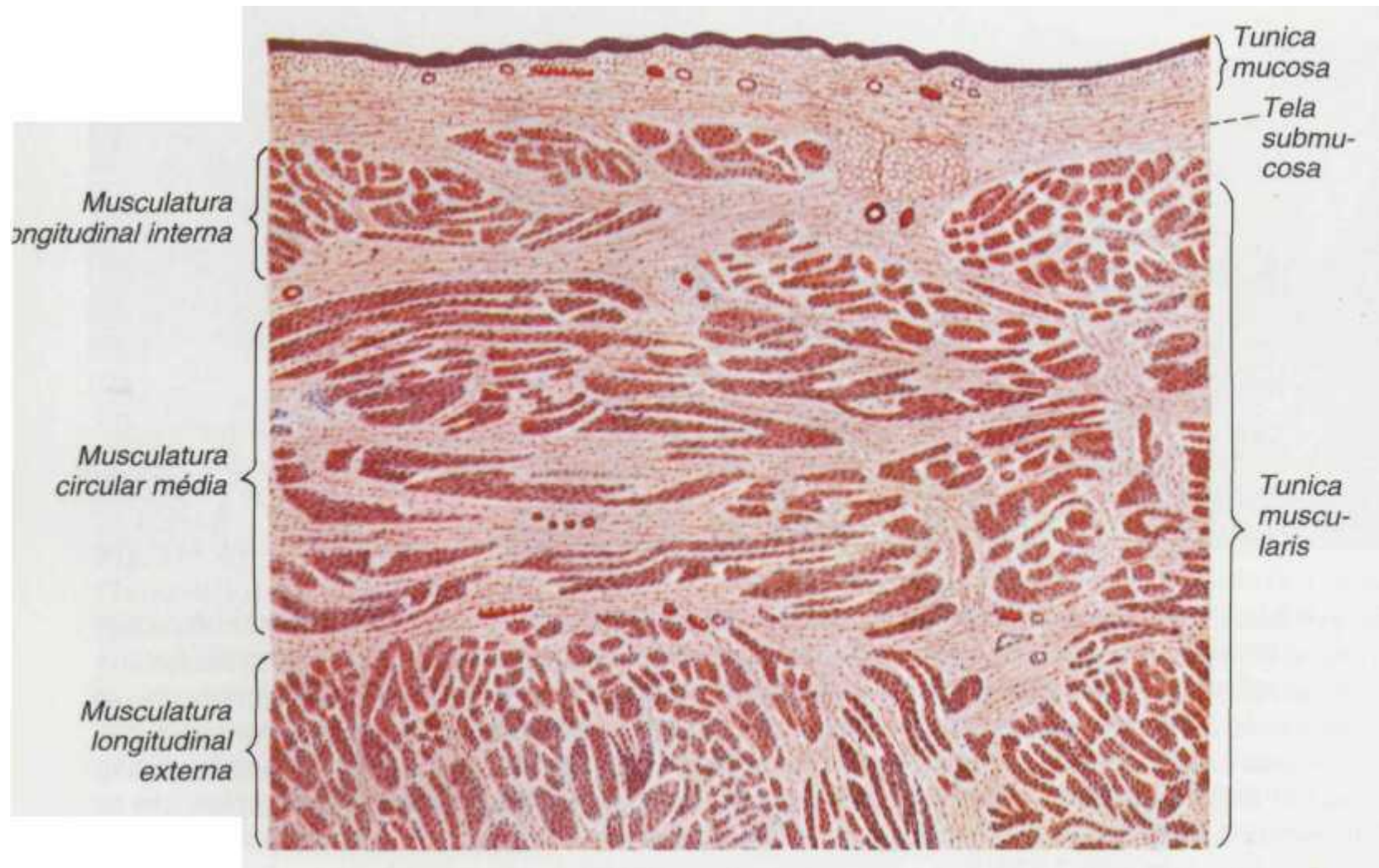


Tecido conjuntivo denso
Tecido conjuntivo frouxo

Músculo detrusor



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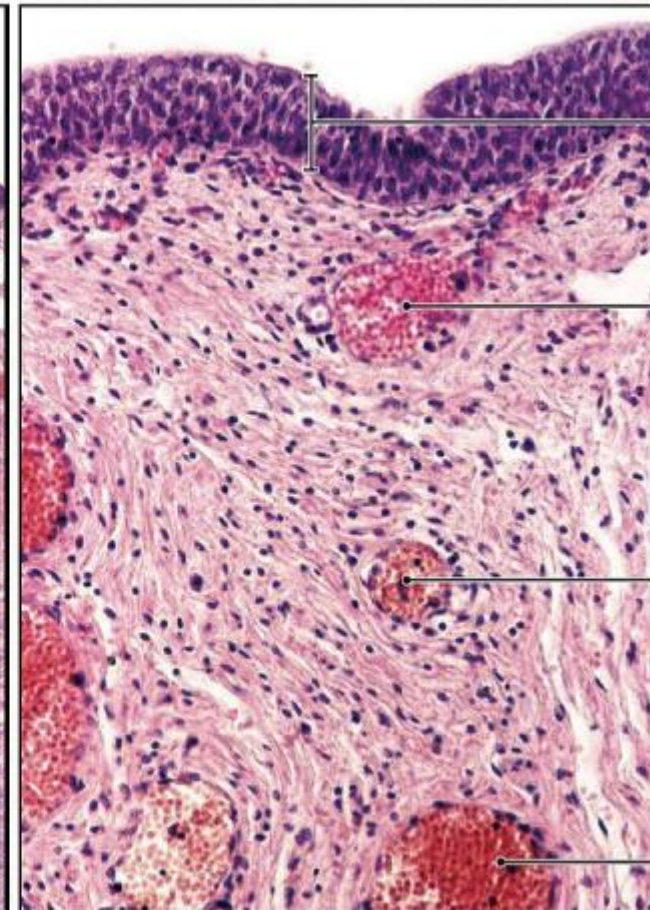
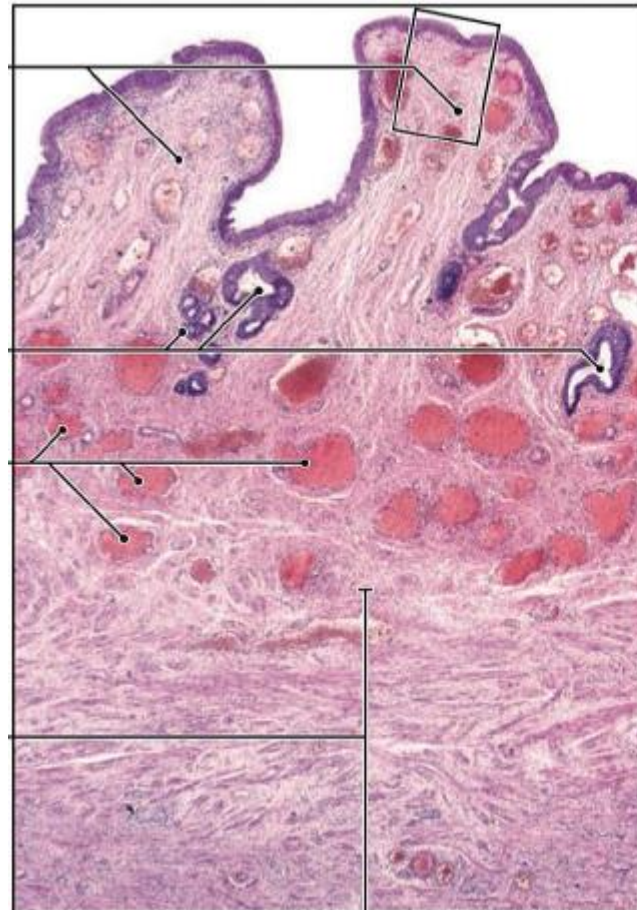


Uretra feminina



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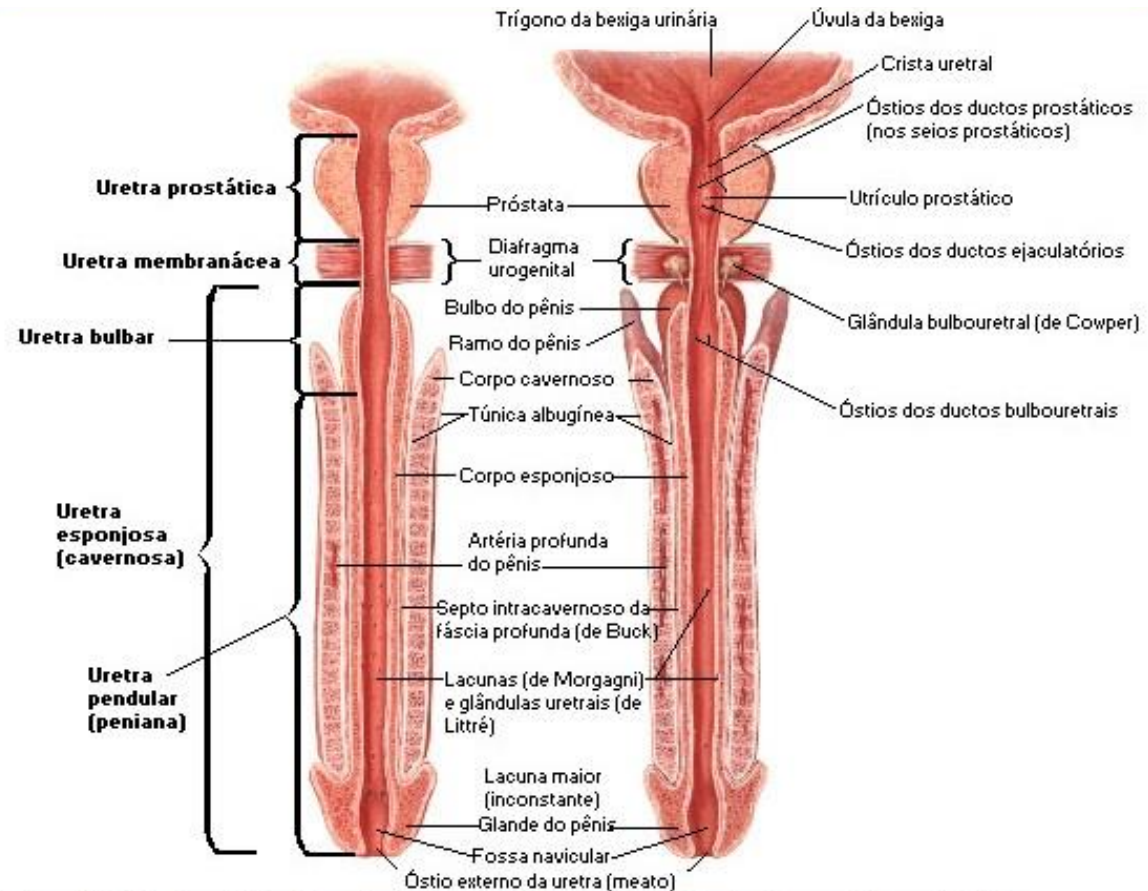
- 4-5 cm de comprimento
- 5-6 mm de diâmetro
- Epitélio pseudoestratificado colunar
- Epitélio estratificado pavimentoso



Uretra masculina



-15-20 cm de comprimento



- Histologia – Junqueira e Carneiro
- Tratado de Histologia – Gartner
- Anatomia orientada para a clínica – Moore