

**Hepatic veins (cut)**

**Inferior vena cava**

**Adrenal gland**

**Aorta**

**Iliac crest**

**Rectum (cut)**

**Uterus (part of female reproductive system)**

**Renal artery**

**Renal hilum**

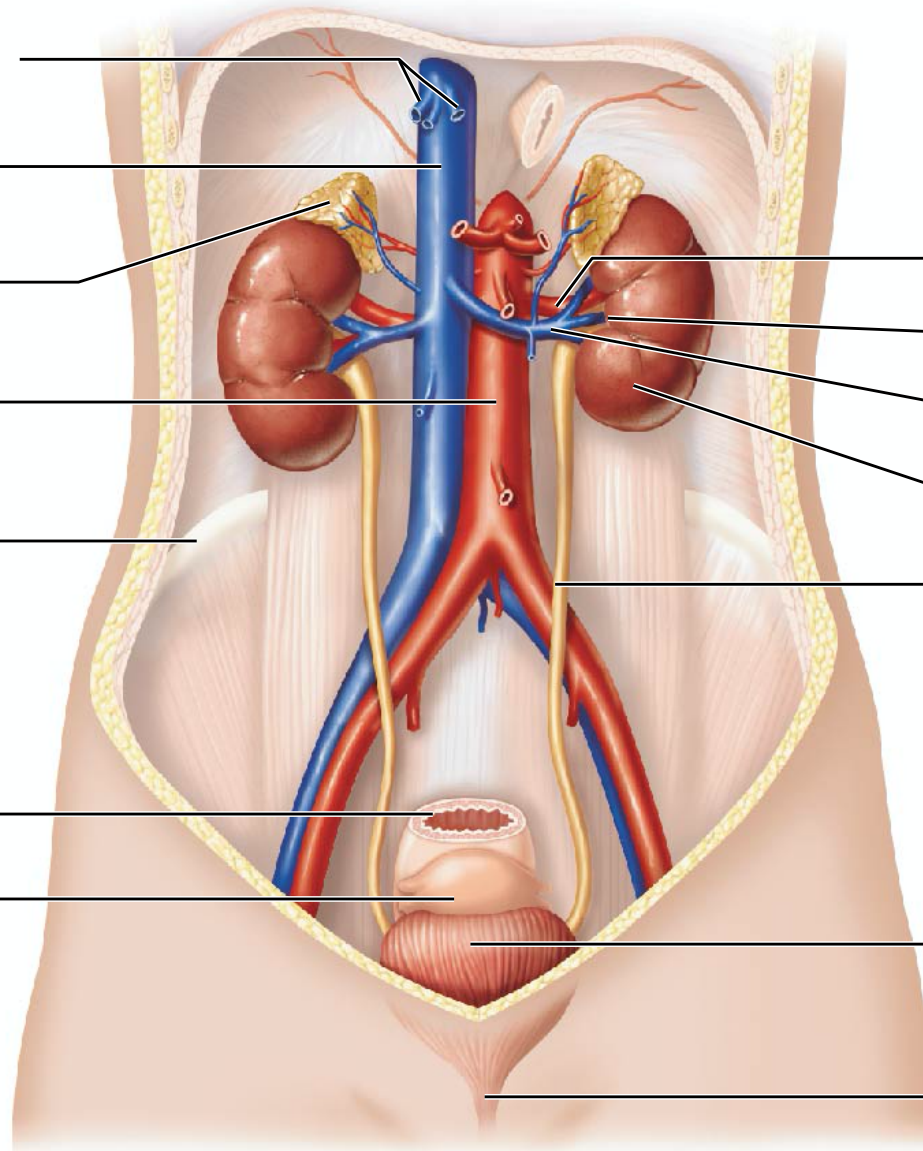
**Renal vein**

**Kidney**

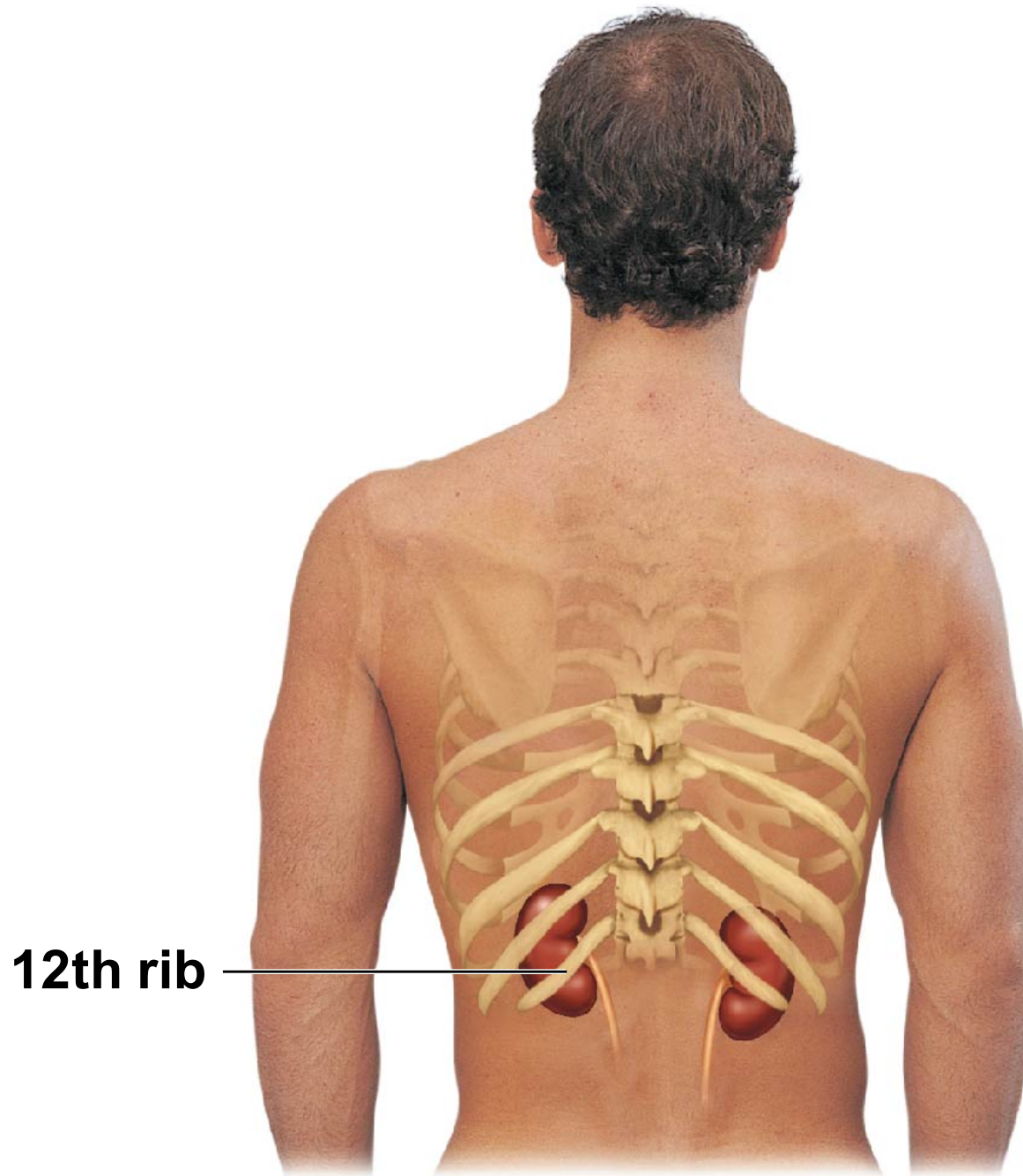
**Ureter**

**Urinary bladder**

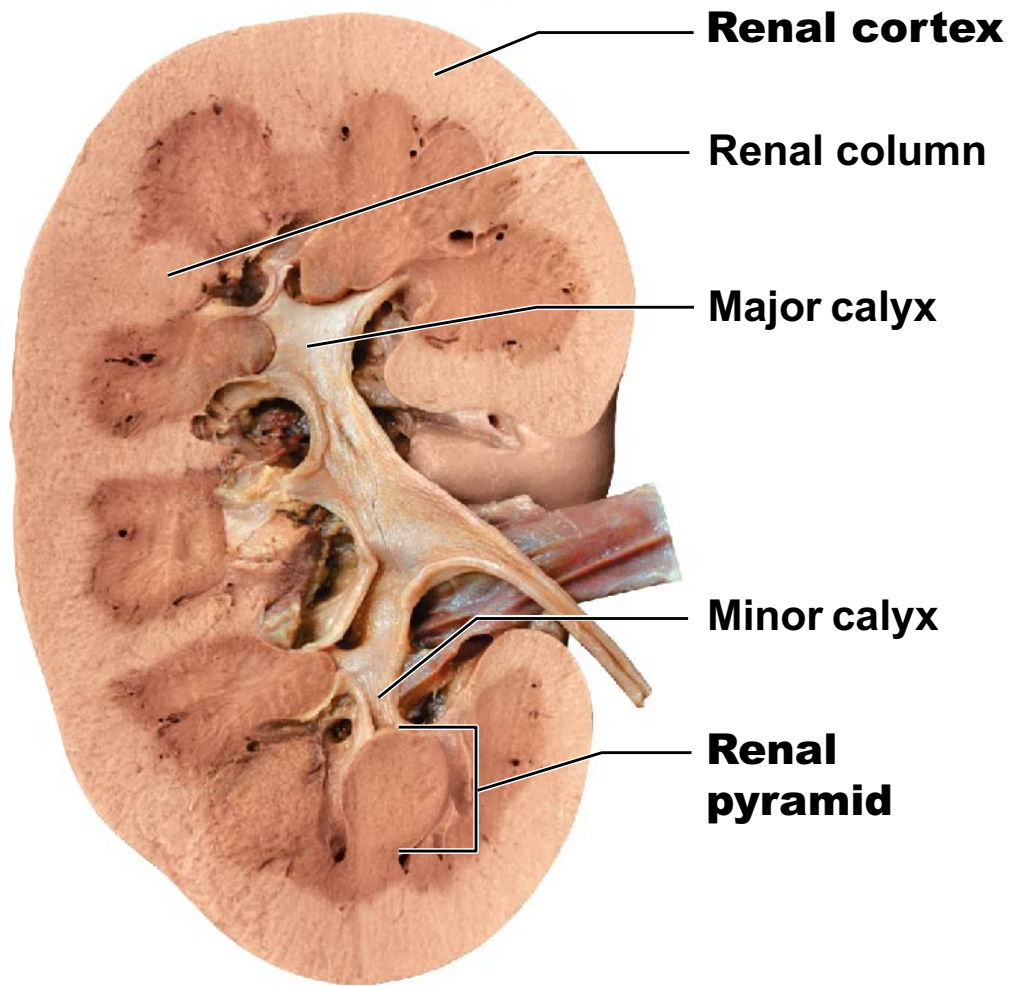
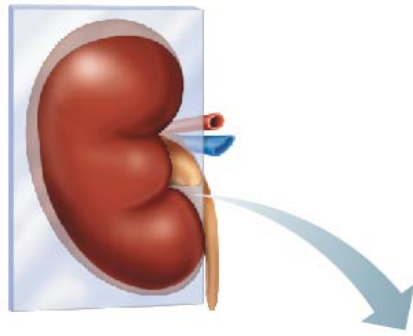
**Urethra**



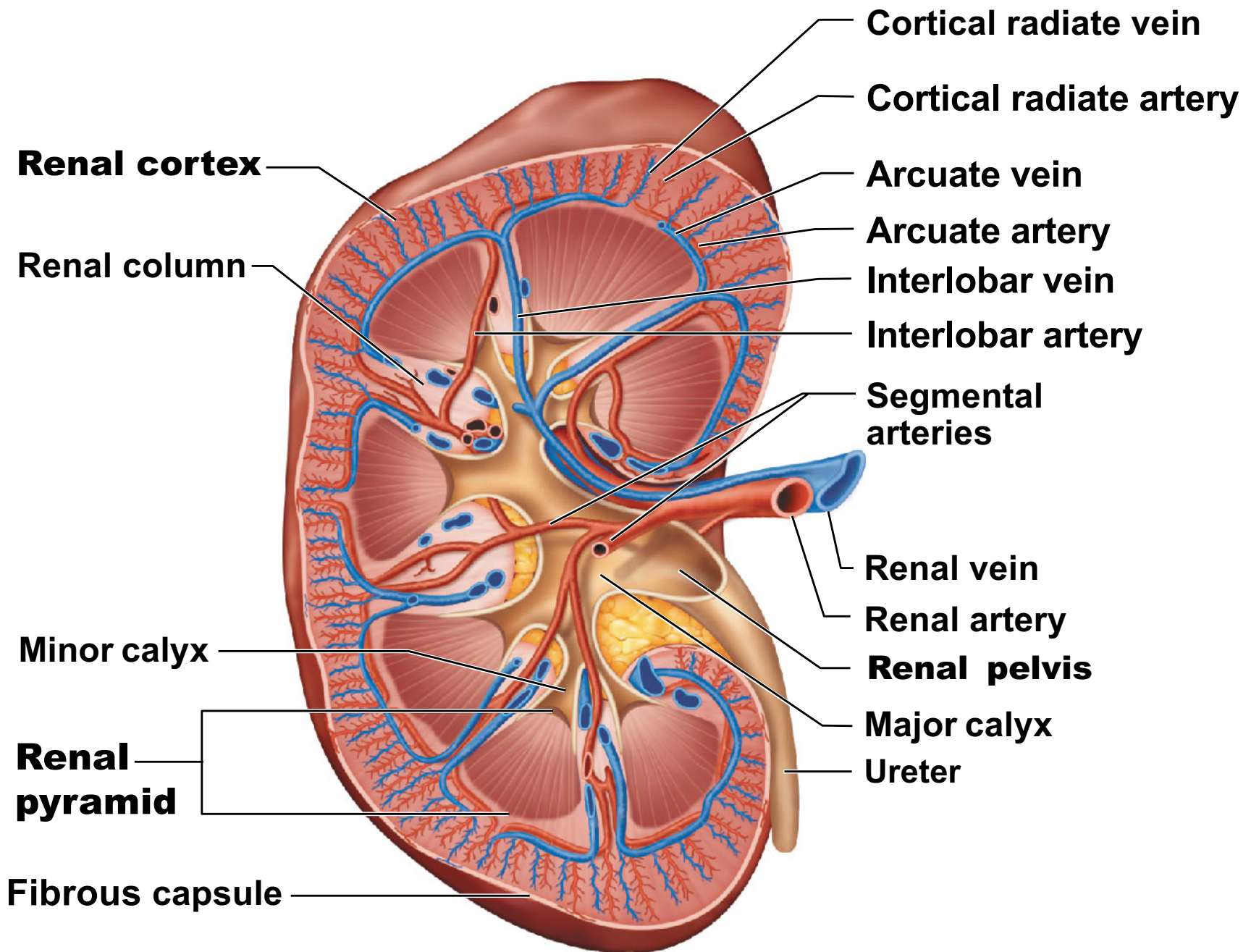
**(a)**



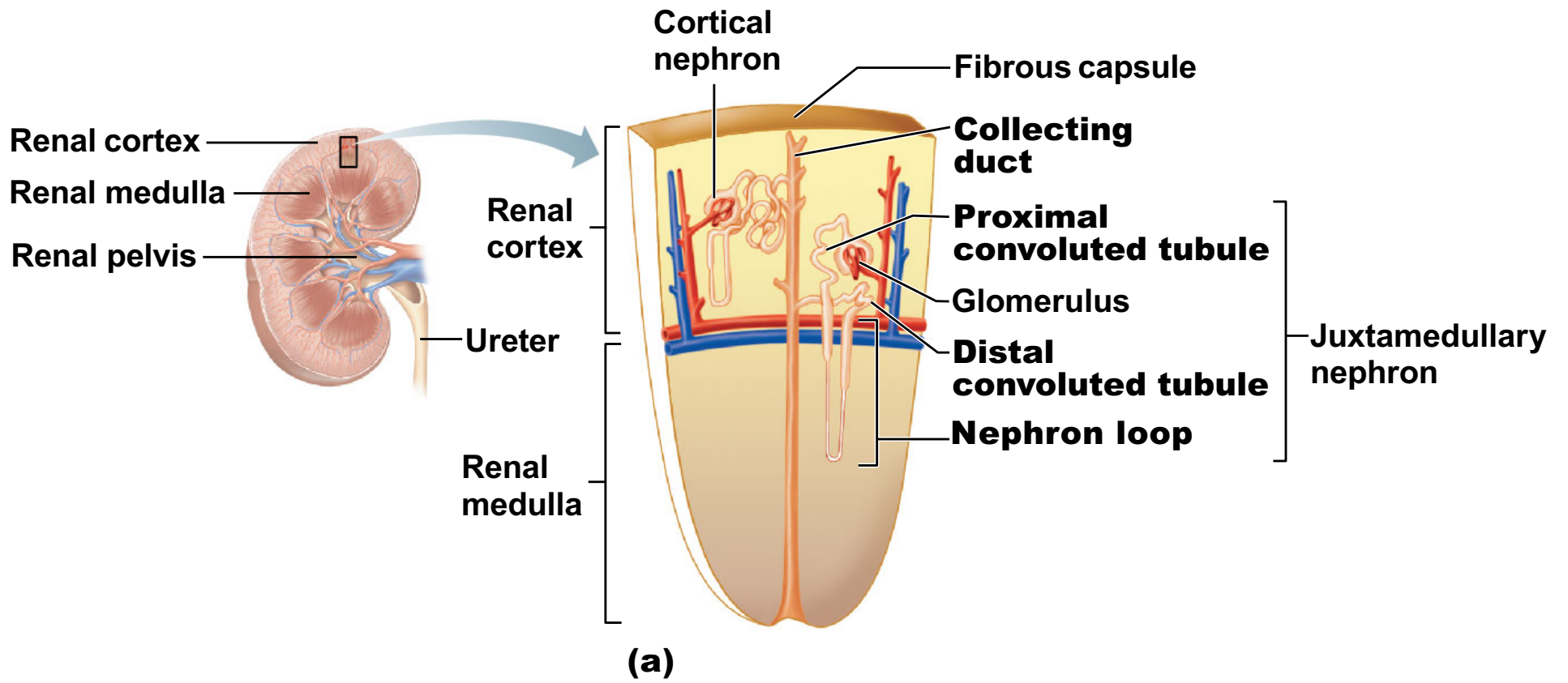
**(b)**

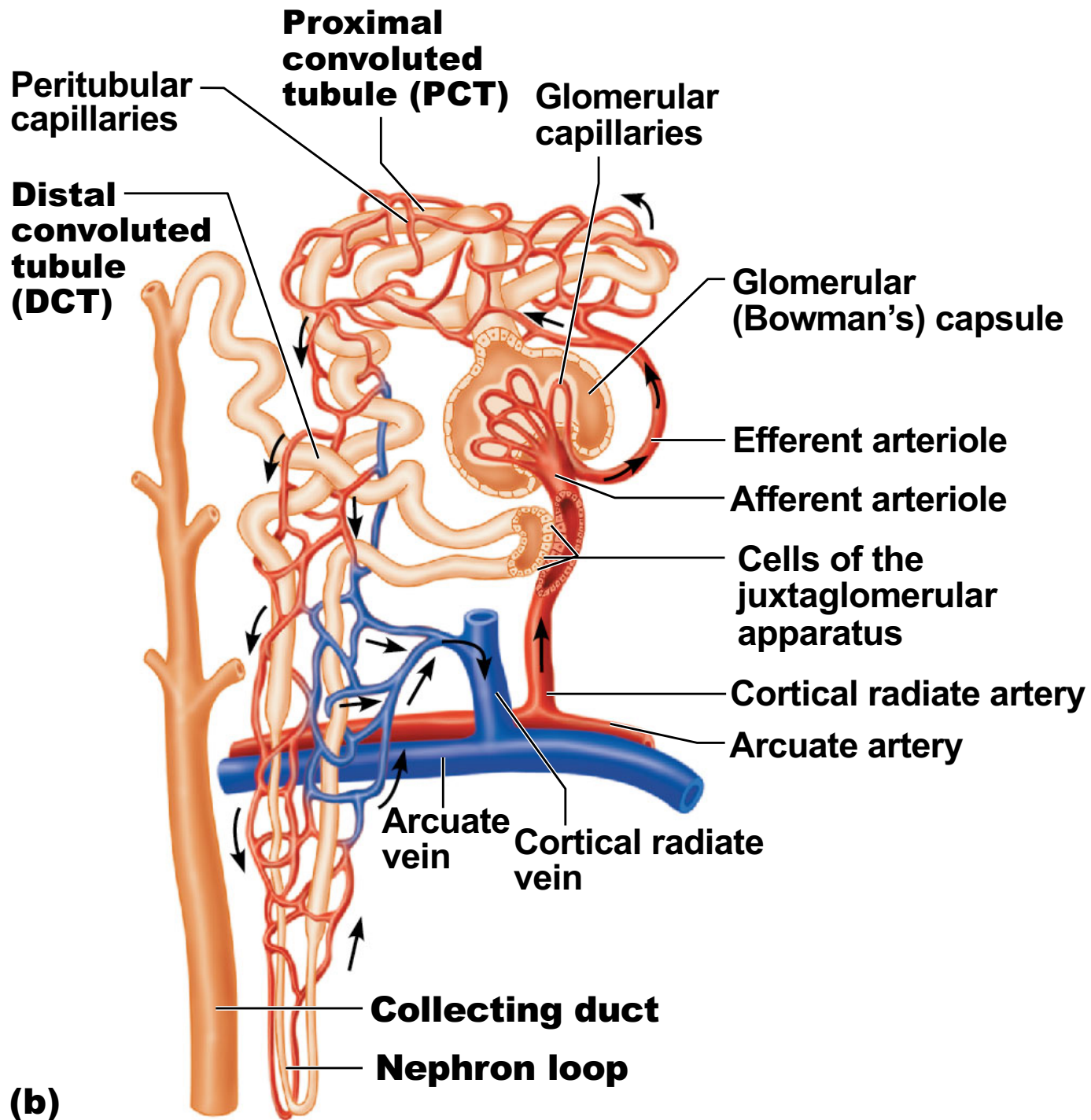


**(a)**

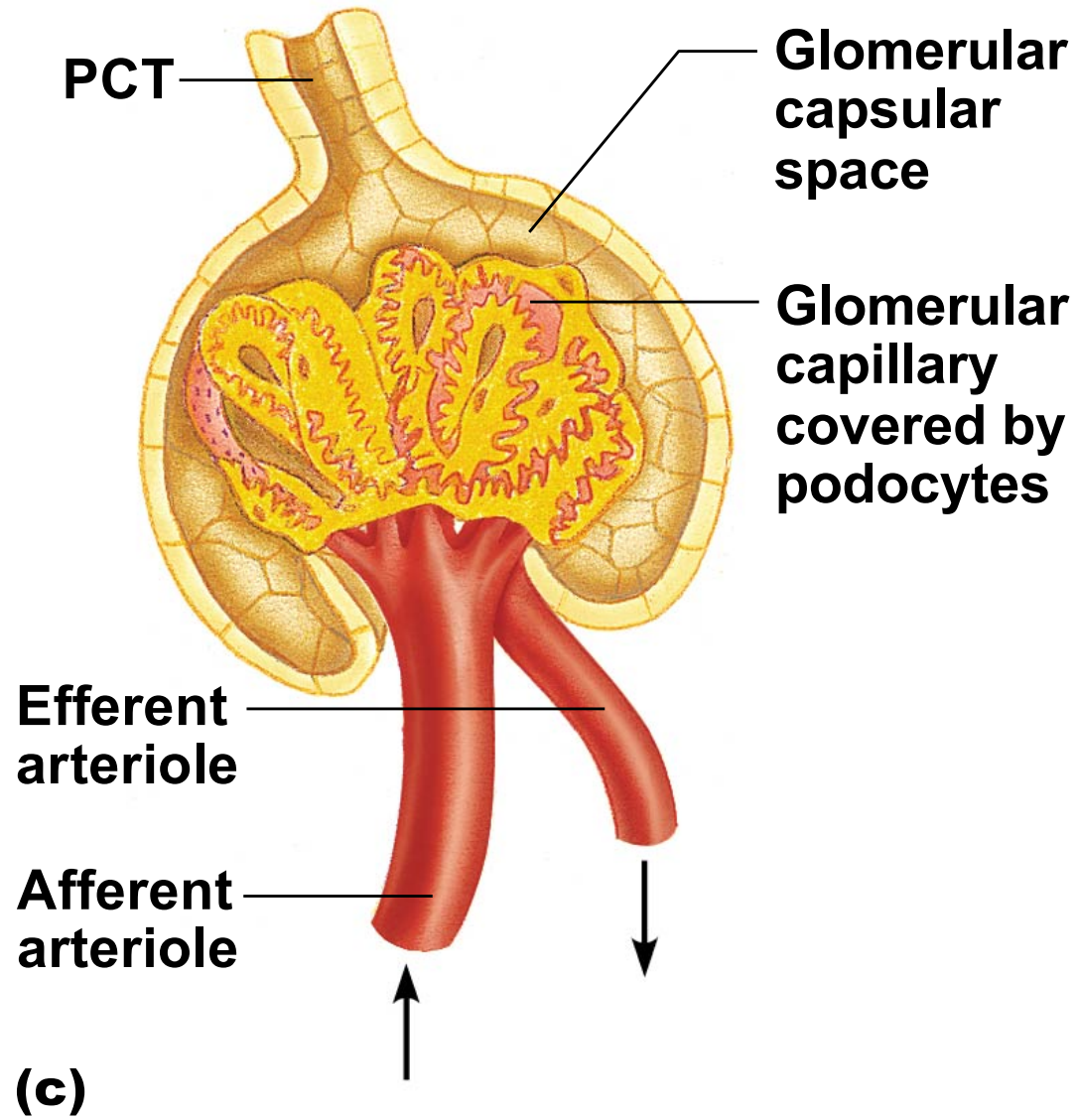


**(b)**

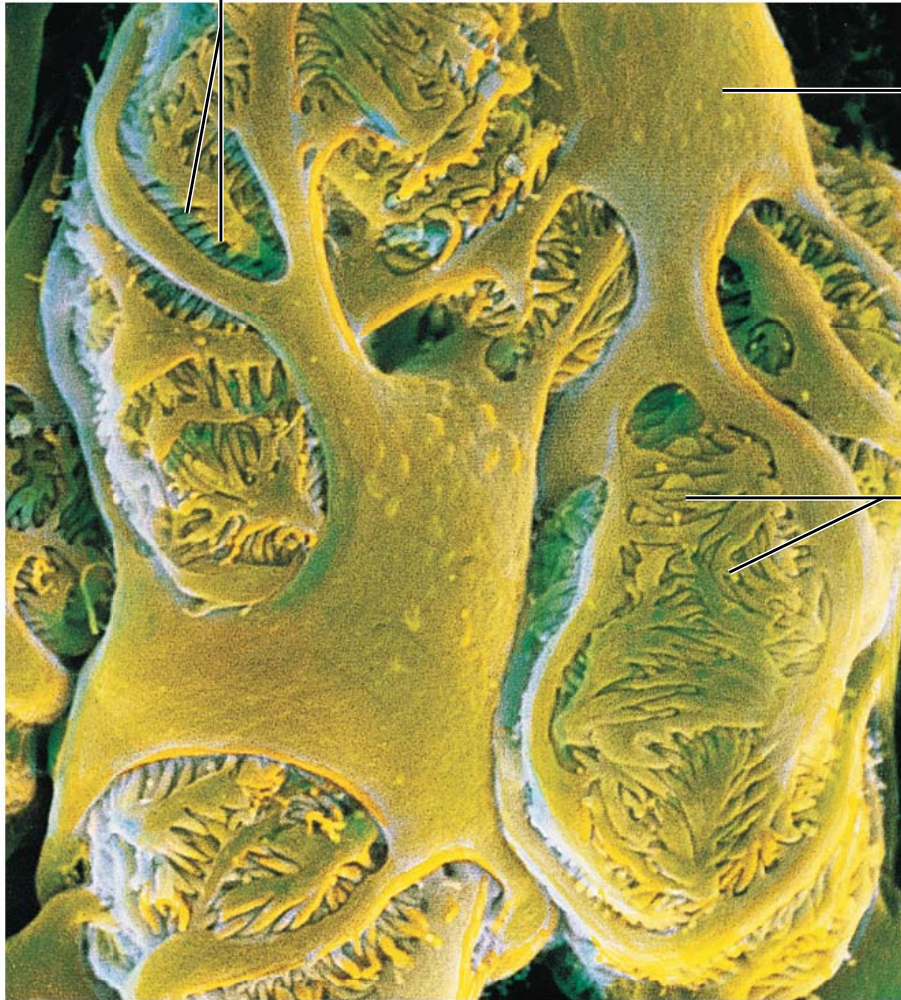




**(b)**



**Filtration slits**

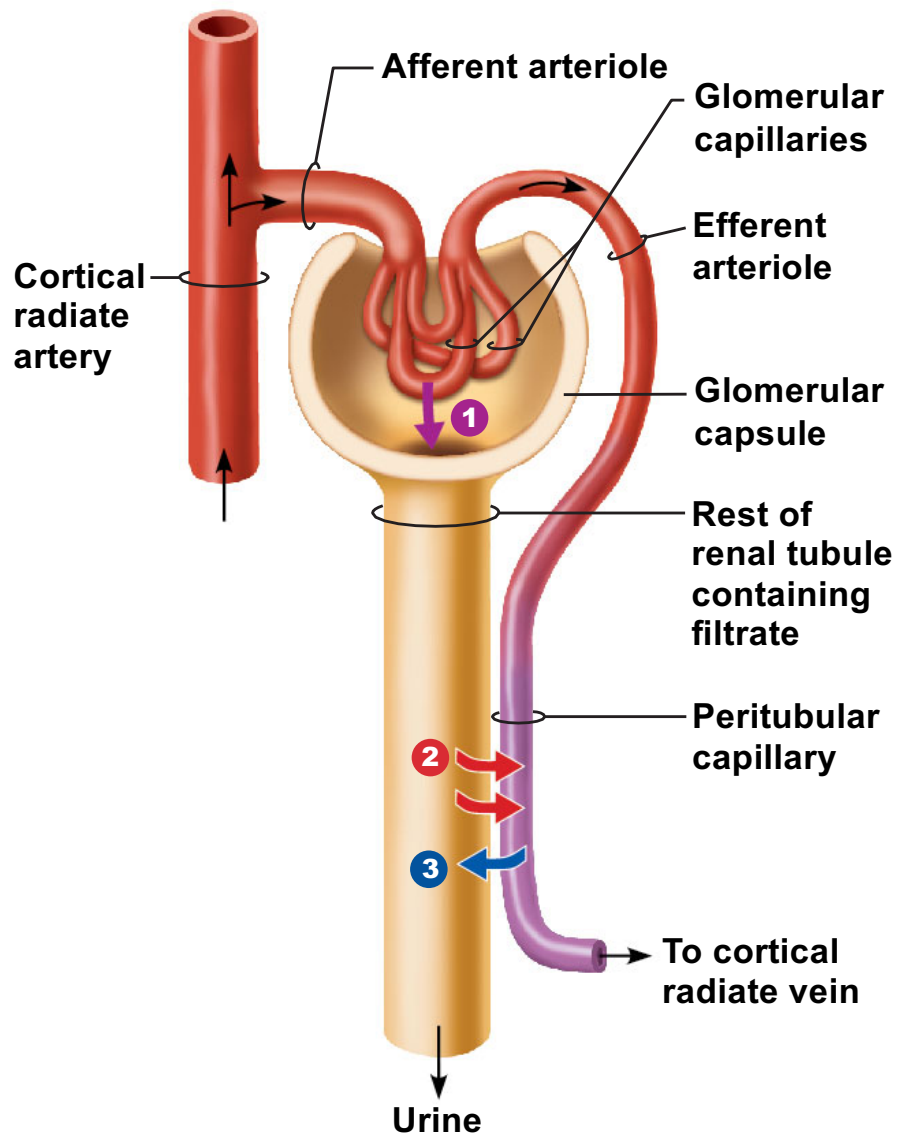


**Podocyte  
cell body**

**Foot  
processes**

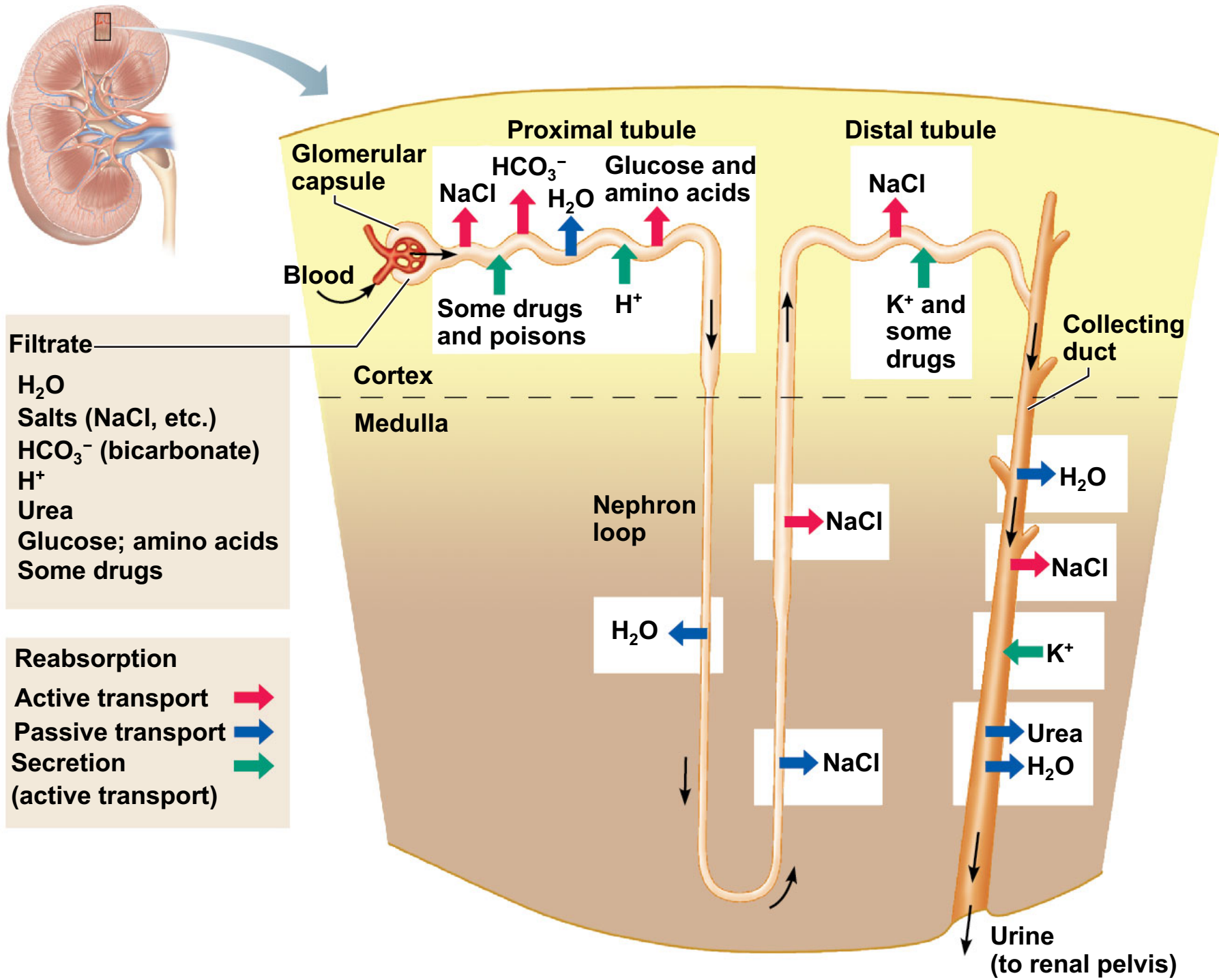
**(d)**

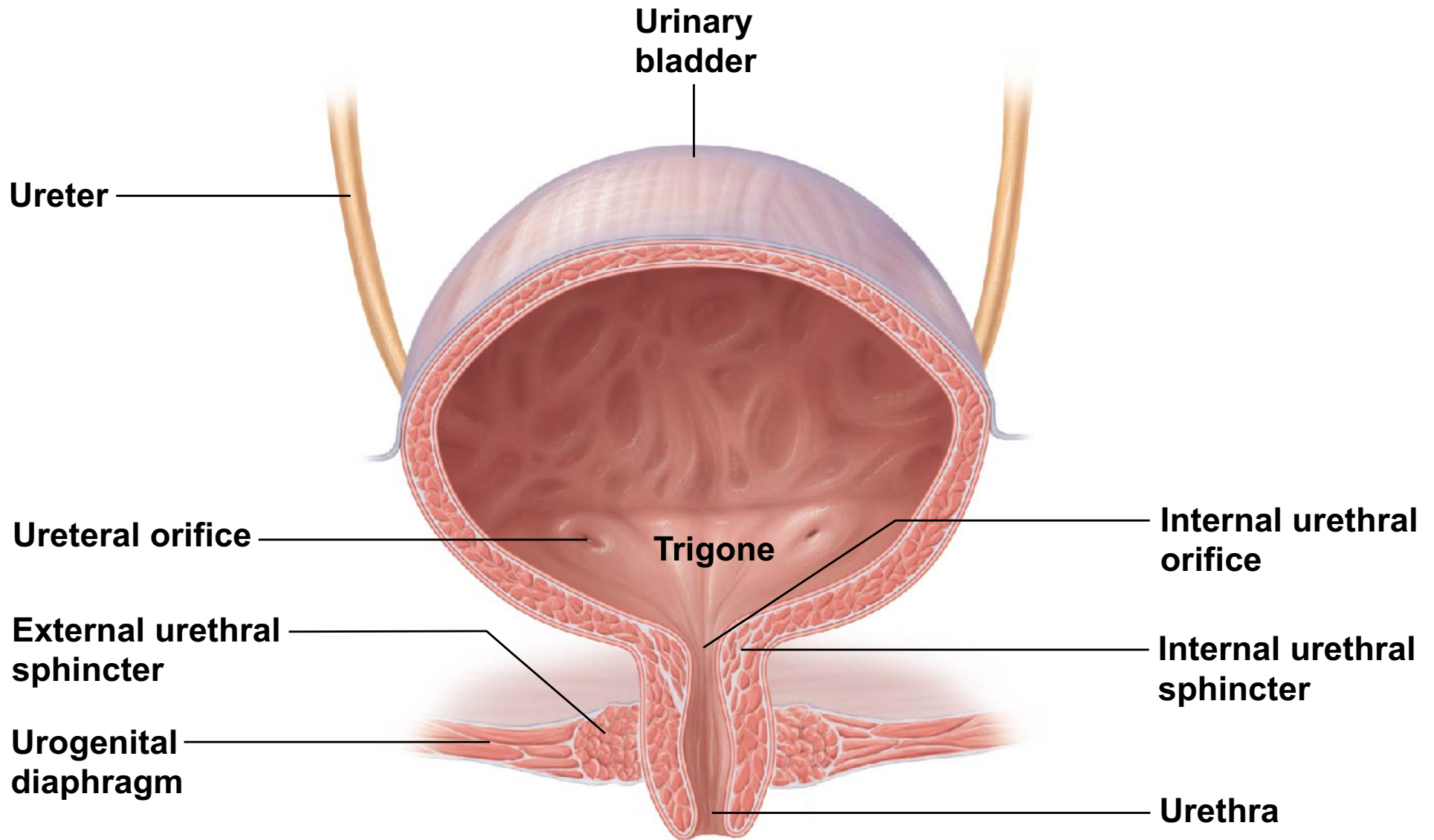




### Three major renal processes:

- ➡ **1** **Glomerular filtration:** Water and solutes smaller than proteins are forced through the capillary walls and pores of the glomerular capsule into the renal tubule.
- ➡ **2** **Tubular reabsorption:** Water, glucose, amino acids, and needed ions are transported out of the filtrate into the tubule cells and then enter the capillary blood.
- ➡ **3** **Tubular secretion:**  $H^1$ ,  $K^1$ , creatinine, and drugs are removed from the peritubular blood and secreted by the tubule cells into the filtrate.



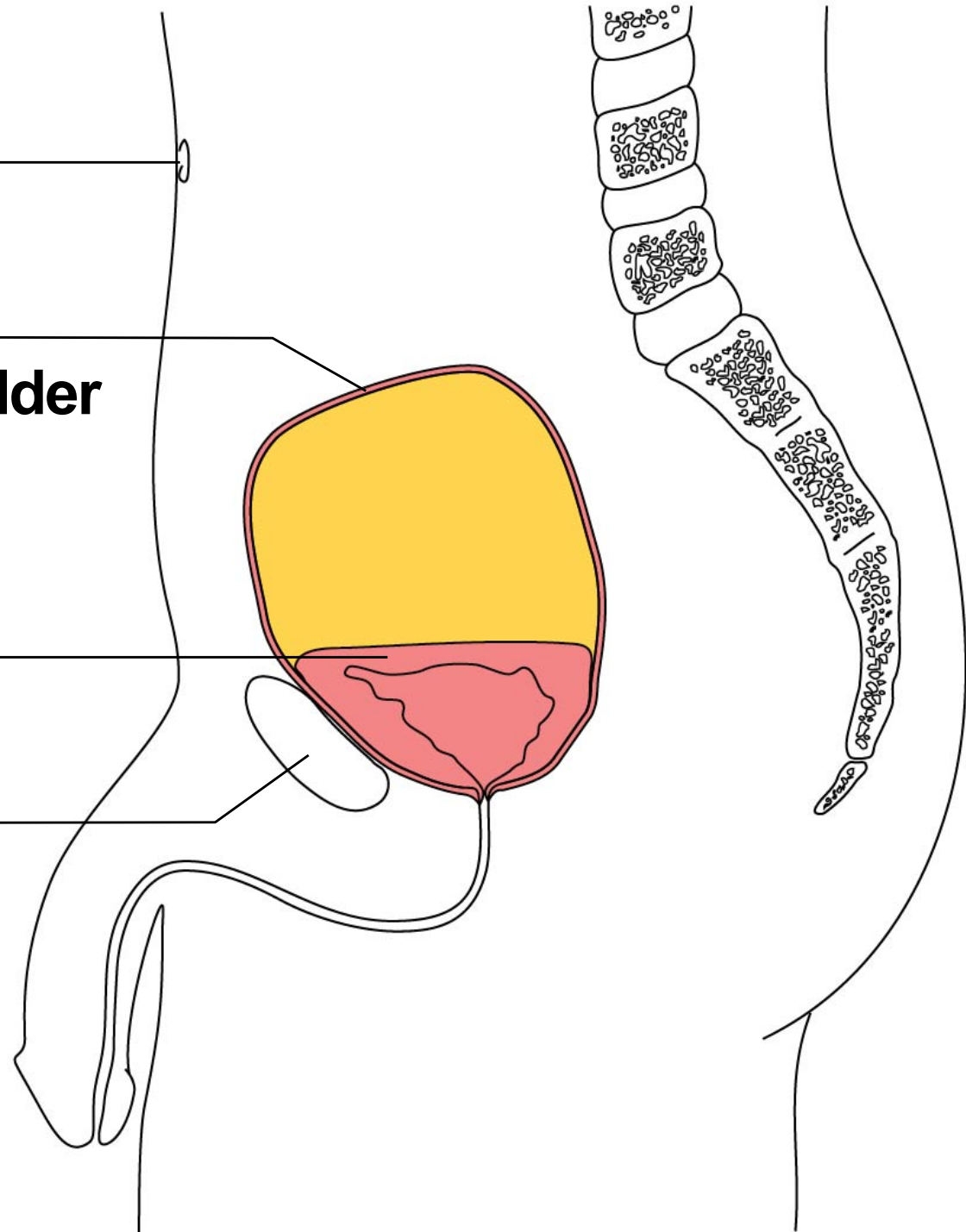


**Umbilicus**

**Superior wall  
of distended bladder**

**Superior wall  
of empty bladder**

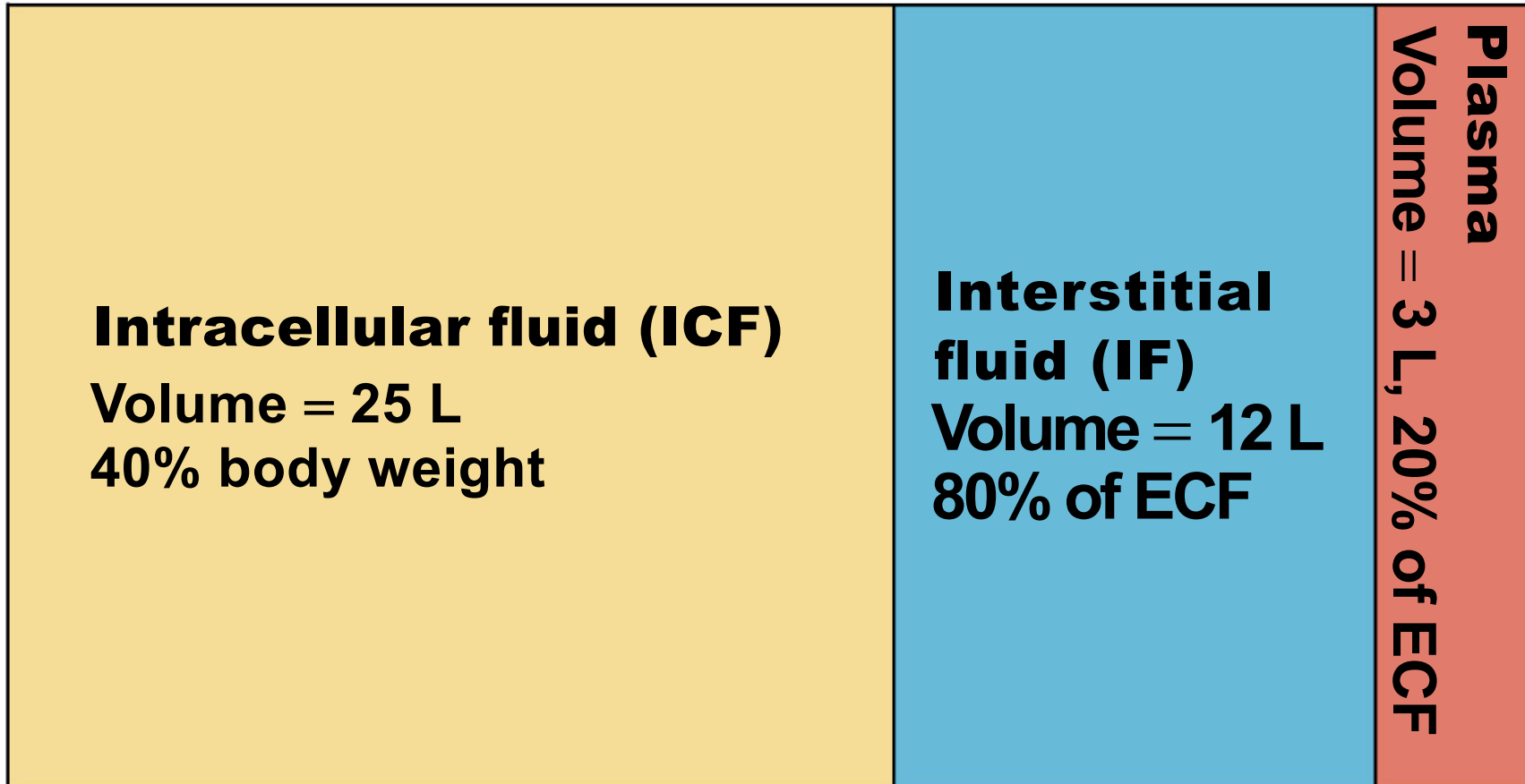
**Pubic  
symphysis**



# Total body water

Volume = 40 L

60% body weight



## Extracellular fluid (ECF)

Volume = 15 L

20% body weight

