

Organs of the Urinary system

- Kidneys
- Ureters
- Urinary bladder
- Urethra

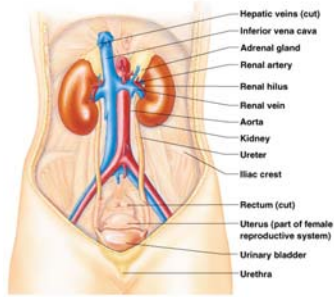


Figure 15.1a

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Slide 15.2

Location of the Kidneys

- Against the dorsal body wall
- At the level of T₁₂ to L₃
- The right kidney is slightly lower than the left
- Attached to ureters, renal blood vessels, and nerves at renal hilus
- Atop each kidney is an adrenal gland

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Slide 15.3

Coverings of the Kidneys

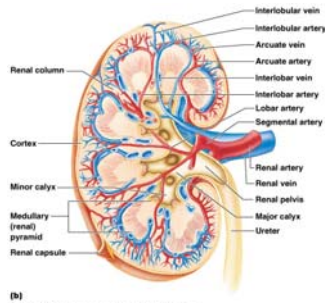
- Renal capsule
 - Surrounds each kidney
- Adipose capsule
 - Surrounds the kidney
 - Provides protection to the kidney
 - Helps keep the kidney in its correct location

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Regions of the Kidney

- Renal cortex – outer region
- Renal medulla – inside the cortex
- Renal pelvis – inner collecting tube



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Figure 15.2b

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Kidney Structures

- Medullary pyramids – triangular regions of tissue in the medulla
- Renal columns – extensions of cortex-like material inward
- Calyces – cup-shaped structures that funnel urine towards the renal pelvis

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Blood Flow in the Kidneys

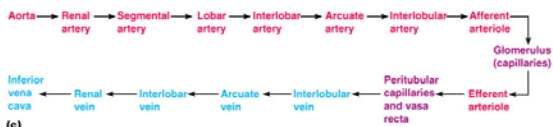


Figure 15.2c

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Nephrons

- The structural and functional units of the kidneys
- Responsible for forming urine
- Main structures of the nephrons
 - Glomerulus
 - Renal tubule

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Glomerulus

- A specialized capillary bed
- Attached to arterioles on both sides (maintains high pressure)
 - Large afferent arteriole
 - Narrow efferent arteriole

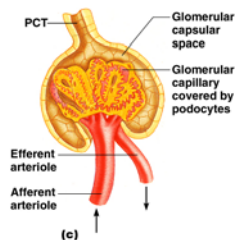


Figure 15.3c

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Slide 15.9a

Renal Tubule

- Glomerular (Bowman's) capsule
- Proximal convoluted tubule
- Loop of Henle
- Distal convoluted tubule

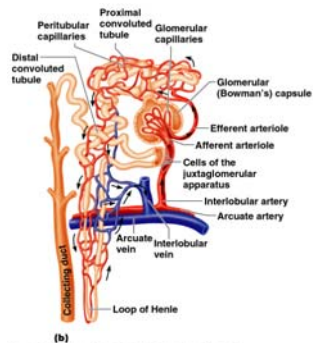


Figure 15.3b

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Types of Nephrons

- Cortical nephrons
 - Located entirely in the cortex
 - Includes most nephrons

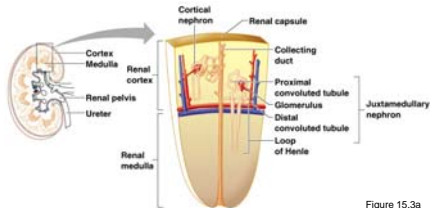


Figure 15.3a

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Peritubular Capillaries

- Arise from efferent arteriole of the glomerulus
- Normal, low pressure capillaries
- Attached to a venule
- Cling close to the renal tubule
- Reabsorb (reclaim) some substances from collecting tubes

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Urine Formation Processes

- Filtration
- Reabsorption
- Secretion

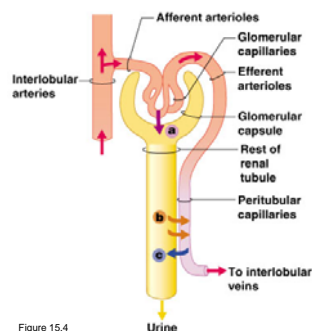


Figure 15.4

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