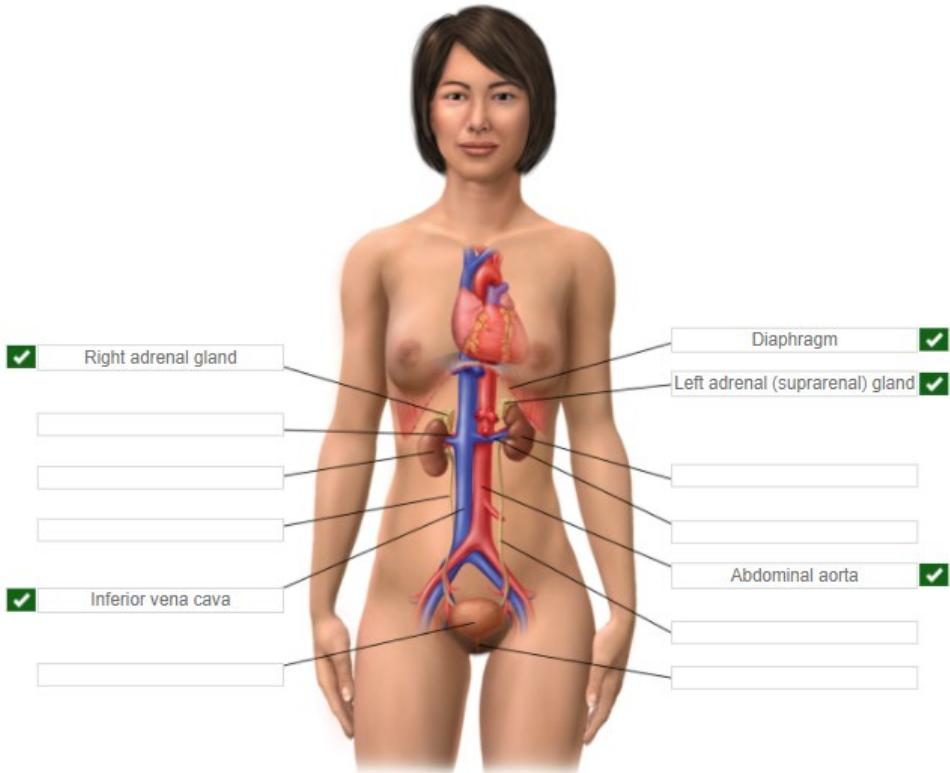


Functions of the urinary system

Read chapter 21.1-22.3

Fill in the blanks

1. The urinary system plays a key role in regulating blood contents and excreting waste, such as excess water and ions, urea, and other metabolic waste. The urinary system also plays a key role in regulating _____ and blood _____
2. The kidneys produce 2 hormones:
 - a. _____ is the active form of vitamin D that regulates blood calcium levels
 - b. _____ is a hormone that stimulates the bone marrow to make red blood cells
3. The _____ arteries bring blood to the kidneys
4. The _____ is the tube that carries urine from the renal pelvis to the bladder.
5. We can voluntarily hold urine in the bladder or release it when we go to the bathroom, we can do this by controlling the contraction or relaxation of the _____ sphincter.
6. In the kidney the (cortex or medulla) _____ region has the highest osmotic gradient.
7. Label the following diagram: **bladder, right kidney, left kidney, right renal artery, left renal vein, right ureter, left ureter**



Fill in the blanks

8. Match the following descriptions with the correct term: **filtration, reabsorption, secretion, excretion**
- Movement of fluid from the tubule to the bloodstream _____
 - Movement of fluid from the bladder through the urethra _____
 - Movement of fluid from the peritubular capillaries to the tubule _____
 - Movement of fluid from the glomerulus to the Bowman's capsule _____
9. Give an example of a substance in the blood that will be fully reabsorbed in healthy people

10. Once fluid moves from the bloodstream into the tubule, it is then called _____ instead of plasma.
11. If hydrostatic pressure in the glomeruli increases, then the rate of filtration (increases or decreases) _____
12. If the osmotic pressure in the glomeruli increases, the rate of filtration (increases or decreases)

13. If the hydrostatic pressure in the Bowman's capsule increases, the rate of filtration (increases or decreases) _____
14. A normal daily filtration rate is _____
15. We excrete approximately _____ fluid in our urine each day.
16. In the nephron, the MOST reabsorption occurs in the _____ tubule.
17. A diabetic person would have _____ in their urine, whereas healthy people do not.
18. The _____ loop of Henle is impermeable to water.
19. The _____ loop of Henle is impermeable to ions.
20. Secretion occurs in 3 main regions of the nephron:
- a. _____
 - b. _____
 - c. _____
21. Hormones such as aldosterone, ADH, and ANP, affect reabsorption in the _____ tubule and the _____.
22. Give 2 examples of substances that are secreted into the nephron: _____ and _____
23. Urea is a product of metabolic waste formed from the breakdown of _____ and _____
24. Uric acid is formed the breakdown of the doubled ringed nucleotides called _____.
25. _____ is a waste product formed when the muscles use creatine phosphate as energy.
26. Gout is an inflammatory condition caused by the build-up of _____ in the joints.
27. Suppose 135 mmol/dL of sodium were filtered into the nephron, and suppose that 87 mmol are reabsorbed, and 0 mmol are secreted, how many mmol/dL of sodium would be in the urine?
- a. _____