

Name:
Date:
Period:

38-3 Homework- the Excretory System

Directions: Read Section 38-3 in the Dragonfly book and review Campbell and the lecture if necessary to answer the following questions.

Animals produce nitrogenous waste as a by-product of the metabolic removal of nitrogen from proteins and nucleic acids. Most aquatic animals excrete nitrogenous wastes through ammonia get body fluids, often converting it first to ammonium. Land animals, however cannot rid of the ammonia fast enough and must first convert it to urea or uric acid first. In mammals, many marine fishes and adult amphibians, this urea is then brought to the kidneys to be excreted.

1. What is urea? Nitrogenous metabolic waste
2. What is excretion?
Elimination of metabolic waste from body
3. What gets excreted through the lungs? CO₂ + H₂O skin? Urea, salt, H₂O (sweat)
4. What parts of the body make up the excretory system? Lungs, skin, kidneys, liver
5. What are the main organs of the excretory system? Kidneys
6. What does the urinary bladder do? Holds urine as it collects from kidneys + ureters
7. What does a kidney do (overall)?

- Filters + cleans blood
- Regulates blood pressure
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8. Label the following parts of the Urinary System

Use the following terms: urinary bladder, ureter, kidney, urethra

9. How long does it take for the kidneys to actually filter all of the blood in your body?

~ 30-45 min.

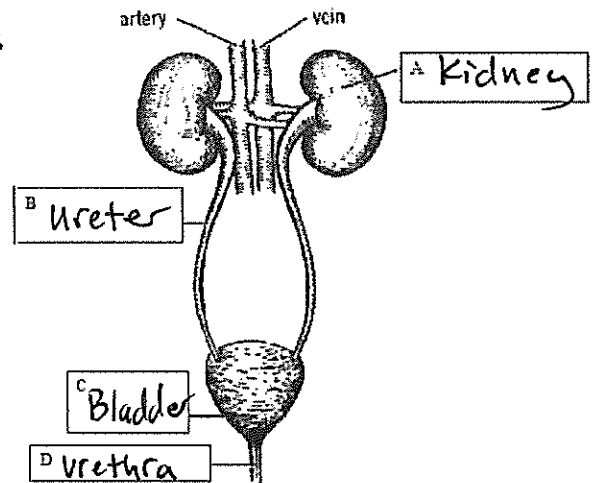
10. How do your kidneys respond to having extra water in your body?

They excrete more water (by reabsorbing less from filtrate)

11. The kidney is divided into 2 distinct parts- the Renal medulla (middle) and Renal Cortex (outer portion)

12. What is the small processing unit of the kidney called?

NEPHRON



13. Describe three ways that the kidneys help maintain homeostasis.

- 1) Remove waste
- 2) Water content in blood
- 3) PH level
- 4) Sugar level in blood
- 5) blood pressure.

14. Explain how the kidneys regulate the levels of salt in the blood.

- Too MUCH SALT IN BLOOD → Return less salt during reabsorp.
- Too LITTLE SALT in blood → "more "

15. Why might your urine be darker if you have been sweating a lot?

~~When you sweat a lot, you lose water. Pituitary releases ADH → ADH causes MORE WATER to be reabsorbed back into blood, urine becomes concentrated~~

16. If you are concerned about dehydration, is it a better idea to have a caffeinated or non-caffeinated beverage? Why?

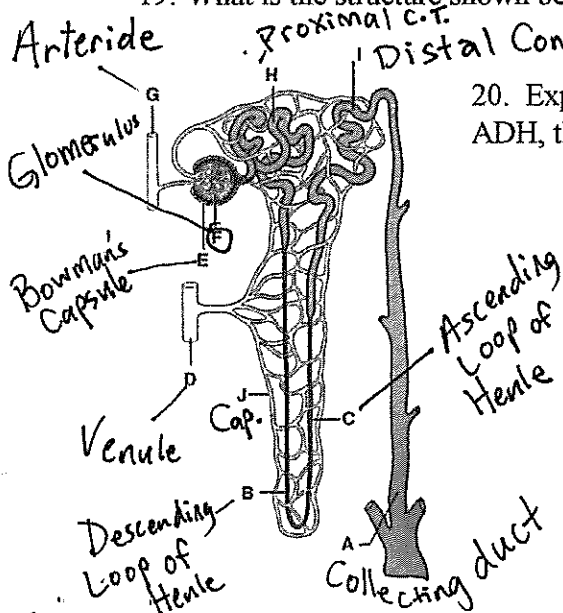
Caf. beverages act like a "diuretic" -
 Causing more H₂O than necessary to be removed from

17. Blood enters the kidney through the large blood vessel called the: Renal artery

18. Urine testing is a common way that doctors can monitor a patient's health. Suppose a urine test reveals that there are proteins in the patient's urine. What might be wrong with this patient? What part of the excretory system might not be functioning properly?

High blood pressure or Diabetes - Capillaries in glomerulus
 - may be damaged - they might be letting out proteins (not supposed to)

19. What is the structure shown below? Label all of the parts.



20. Explain the effect of aldosterone on the blood. How is it different than ADH, the other hormone we learned about in the excretory system lecture?

ADH works in collecting duct + affects H₂O reabsorb.
 Aldost. works in distal tubule + affects Na⁺ absorb