

Conceptual Biology

Chapter 15: Protecting Health

Excretory System

1. Label the parts of the excretory system in the diagram using the following terms:

Urethra

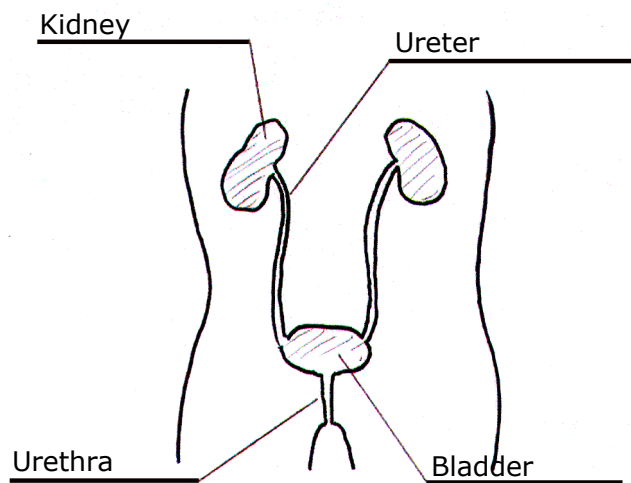
Kidney

Ureter

Bladder

Ureter

Kidney



2. The functional unit of the kidney is called the nephron.

3. Label the structures of a nephron using the following terms:

Capillaries

Bowman's capsule

Loop of Henle

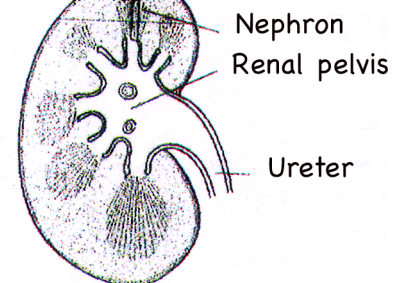
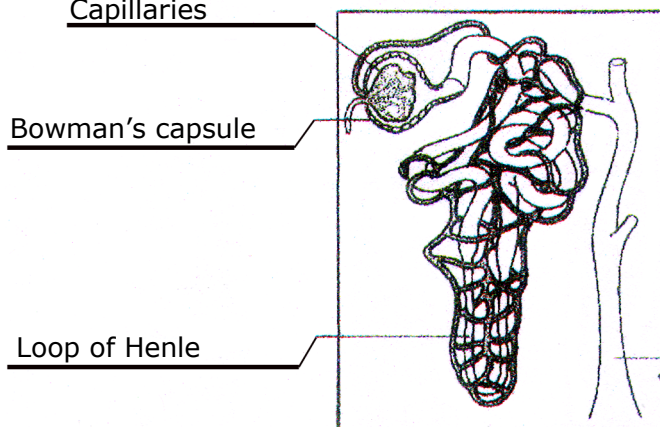
Capillaries

Bowman's capsule

Loop of Henle

Collecting duct

Collecting duct



Conceptual Biology

Chapter 15: Protecting Health

Excretory System—continued

4. Fluid leaves the capillaries of the circulatory system and enters the part of the nephron called Bowman's capsule.
5. Two parts of the nephron where water is reabsorbed by the body are the Loop of Henle and the collecting duct.

The attention a community gives to the maintenance of its infrastructure is a measure of the value of that community. Likewise with the care and maintenance of your body.



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Immune System

1. Describe the role of each part of the immune system.



- a. Skin keeps pathogens from getting into the body.
- b. Mucus A layer of mucus covers all our mucus membranes. Mucus helps trap pathogens.
- c. Enzymes in tears and milk kill bacteria.
- d. Inflammatory response In the inflammatory response, swelling helps isolate wounds.
In addition, innate immune cells attack pathogens that have entered the body.
- e. Antibodies Antibodies bind to antigens on pathogens. This prevents the pathogens from functioning properly or causes antigens to clump together, making them easy targets for other immune cells.
- f. Clones Both B and T cells produce clones, many copies of themselves, for strengthening the immune response.
- g. B cells B cells attack pathogens in bodily fluids (blood or lymph).
- h. T cells T cells attack pathogens that are inside the body's cells.
- i. Memory cells Memory cells remain in the body for a long time after an infection. If the same pathogen attacks the body again, the memory cells start an immediate, aggressive attack.

2. Explain how a vaccine works. Most vaccines contain either dead

pathogens or weak versions of a pathogen. Or they use only a part of a pathogen—maybe part of a virus's protein coat or part of a bacterium's cell wall. The acquired immune system reacts to antigens in the vaccine just as it would react to the real pathogen. It makes antibodies and —most importantly—memory cells. If the real pathogen ever shows up, the acquired immune system is ready to launch an immediate, aggressive attack.

