Name_____ Date_____

Chapter 14 Lab Investigation: Urinary System

Purpose

In this activity you will draw the components of a nephron and identify the activities that take place in each. You will also identify the components of the urine storage systems for males and females.

Materials

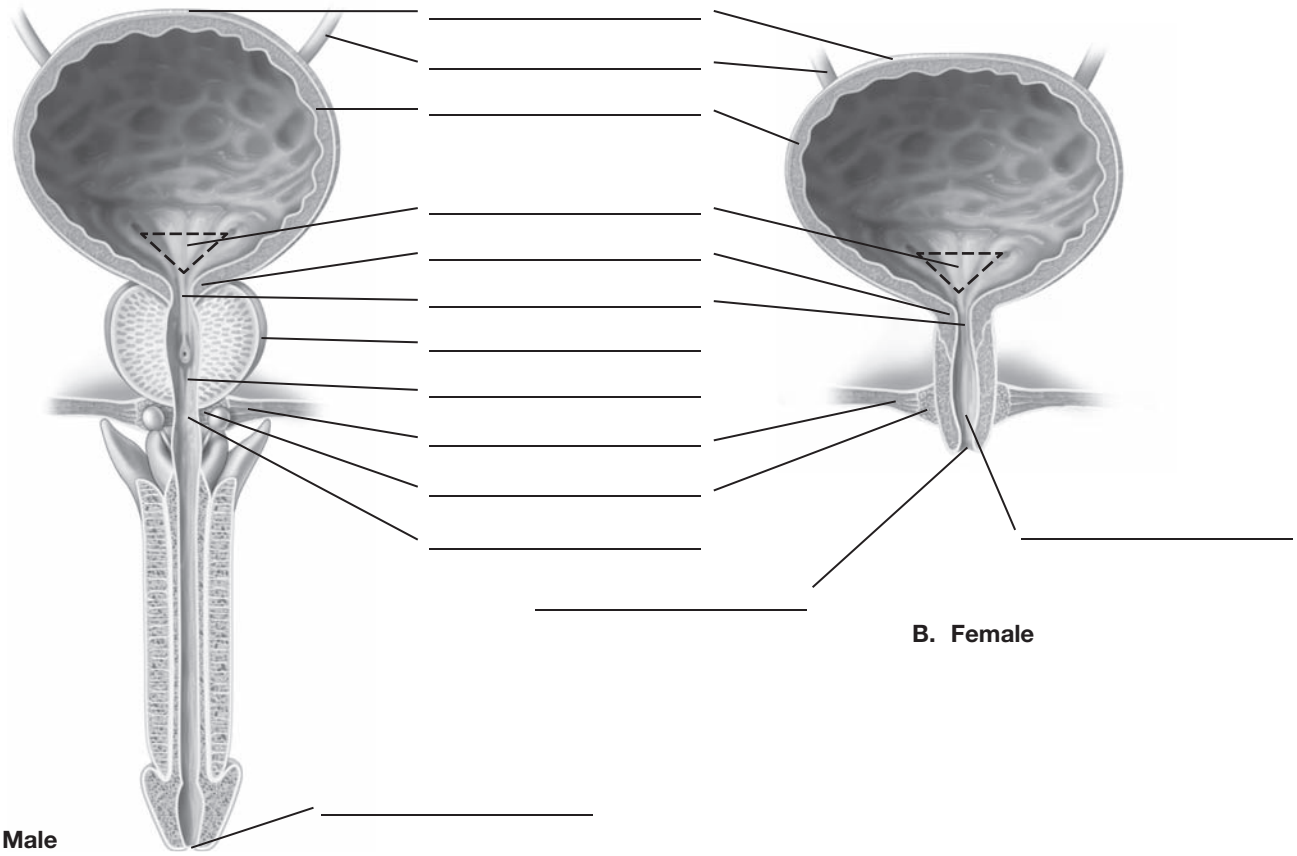
your textbook

Procedure

The Nephron

1. Draw the components of the nephron in this order: afferent arteriole, podocyte, efferent arteriole, glomerular capsule, proximal convoluted tubule, nephron loop, distal convoluted tubule, collecting duct.
2. Next, draw peritubular capillaries around the convoluted tubules and the nephron loop.
3. Label your nephron drawing with the components listed in #1.

Urine Storage and Elimination from the Body



A. Male **B. Female**

1. Label the drawing with the following components, which are common to both: ureter, bladder, bladder neck, detrusor muscle, trigone of bladder, internal urethral sphincter, external urethral sphincter, urogenital diaphragm, and the external urethral orifice.
2. Then label the drawing with the components that are specific to the male and the female. In the male drawing, label the prostate, intermediate part of the urethra, and prostatic urethra. Label the urethra for the female.

Conclusions

1. A nephron contains the following areas. List the process or processes (filtration, reabsorption or secretion) that occur in each one.
   A. glomerulus _____
   B. proximal convoluted tubule _____
   C. distal convoluted tubule_____
   D. collecting duct_____
2. List the names of the two types of nephrons.
   A. _____
   B. _____
3. What is the difference between the two types of nephrons?

   _____

   _____

   _____
4. Where is urine produced and which structures act as "the plumbing" that carries the urine from this site to the bladder?

   _____

   _____

   _____
5. In males, the urethra passes through which gland? What are the functions of this gland?

   _____

   _____

   _____
6. Use the illustration you labeled in the *Urine Storage and Elimination* section above to explain why urinary tract infections are more common in women than in men.

   _____

   _____

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