[redacted]

Exercise 9: Renal System Physiology: Activity 5: Reabsorption of Glucose via Carrier Proteins Lab Report

Pre-lab Quiz Results
You scored 100% by answering 4 out of 4 questions correctly.

1. Renal processing of plasma glucose does *not* normally include
You correctly answered: b. secretion.

2. How does antidiuretic hormone (ADH) affect the renal processing of plasma glucose?
You correctly answered: c. ADH has no direct effects on renal processing of plasma glucose.

3. Glucose reabsorption in the nephron includes
You correctly answered: d. secondary active transport along the apical membrane of proximal tubule cells.

4. Because carrier proteins are required to move glucose from the lumen of the nephron into the interstitial spaces, which of the following statements is *false*?
You correctly answered: d. The number of glucose carriers in a nephron can be altered as needed by the body.

Experiment Results
Predict Question:
Predict Question: What will happen to the glucose concentration in the urinary bladder as glucose carriers are added to the proximal tubule?
Your answer : b. The glucose concentration will decrease.

Stop & Think Questions:
Why is the glucose concentration the same in both Bowman's capsule and the urinary bladder?
You correctly answered: b. Glucose cannot be reabsorbed in the absence of carriers.

Is a transport maximum reached in these experiments?
You correctly answered: a. yes

Experiment Data:

Glucose Conc. Capsule	Glucose Conc. Distal	Glucose Conc. Bladder	Total Glucose Carriers	Conc. Grad.
6.00	6.00	6.00	0	1200
6.00	4.29	4.29	100	1200
6.00	2.57	2.57	200	1200
6.00	0.86	0.86	300	1200
6.00	0.00	0.00	400	1200

Post-lab Quiz Results
You scored 100% by answering 3 out of 3 questions correctly.

1. Glucose carrier proteins are located in which region of the nephron?
You correctly answered: b. the proximal convoluted tubule

2. If the concentration of glucose in the filtrate exceeds the transport capacity of the carrier proteins, then
You correctly answered: d. a transport maximum has been reached.

3. Why does glucose appear in the urine of untreated diabetic patients?
You correctly answered: c. An excessive amount of glucose is present in their filtrate.

Review Sheet Results
You have not completed the Review Sheet.