

**Lab 9: Urinary/Excretory System**

Become familiar with the structures of the urinary system (Exercise 40). Identify the main urinary system structures and the detailed structure of the kidney on the models & dissection (Figs. 40.1, 40.2, & 40.3, Activity 1). Please note that the pig kidneys available are injected with latex. This will allow you to see some of the small arteries and veins shown in Fig. 40.3.

Review the structure, function, & microscopic structure of the nephron (Figs. 40.4, 40.5, Activity 2). Be able to distinguish the renal cortex from the medulla and recognize the glomeruli within their renal capsules (Bowman's capsules). Know where the parts of a nephron are located in the kidney. Also look at the slides of urinary bladder and ureter and be able to recognize their special transitional epithelium (Fig. 40.7, Activity 3).

Associated terms to know:

**Renal Cortex**

**Major & Minor Calyx**

**Renal Pelvis**

**Renal Medulla**

**Renal Pyramids**

**Renal Artery & Vein**

**Collecting Ducts**

**Glomerulus**

**Interlobular Vessels**

**Renal Capsule**

**Arcuate Vessels**

**Renal Hilum**

**Cortical Radiate Arteries & Veins**

**Afferent and Efferent Arterioles**

**Proximal & Distal Convolutated Tubules**

**Ascending and Descending Loops of Henle**

**Vasa Recta & Peritubular Capillaries**

(you won't see these last two in the models, but know what they are)

Name the organs comprising the urinary system.

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The kidneys only project slightly into the peritoneal cavity and are not suspended by a mesentery like, for example, the intestine. What is the special name for this condition?

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Which layer of the kidney houses the renal corpuscles (glomeruli inside the Bowman's capsule)?

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Which layer of the kidney houses the Loops of Henle? \_\_\_\_\_

What is the main adaptation of the transitional epithelium lining the ureters and the bladder?

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The deep portions of the medullary pyramids are made up primarily of what type of duct?

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The minor calyces drain into the \_\_\_\_\_, which drain into the

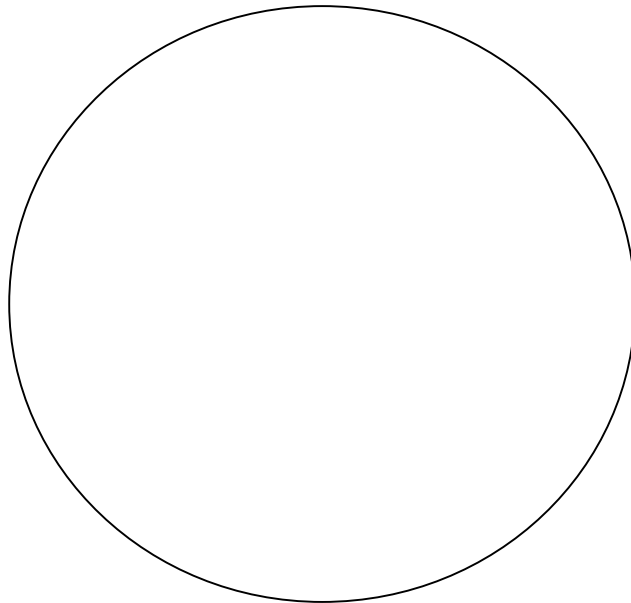
\_\_\_\_\_, which drains into the ureter.

### **Slide Assignment: Urinary/Excretory Anatomy**

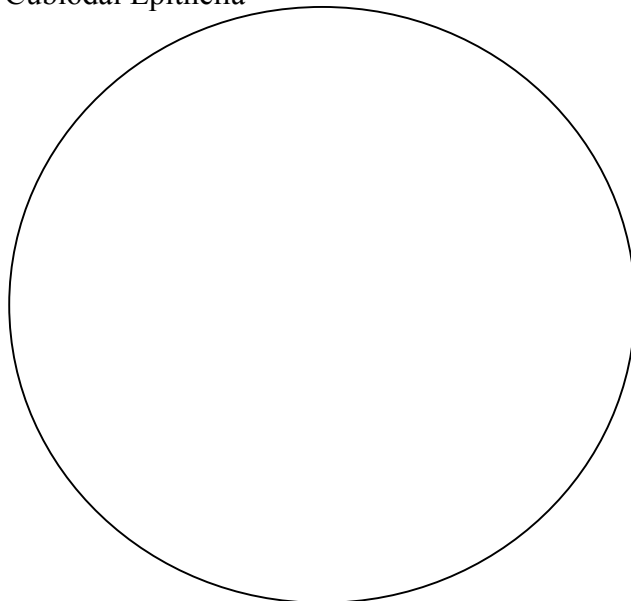
(Beginning on p613 in Lab Text, beginning on p417 in Histology Text)

Draw the following slides using the figures in the lab and histology texts as a reference. Use whichever magnification works best to show all given structures. Please note that not every slide will show everything; you will need to look at multiple slides and/or sources. Your drawings should artistically combine views to include all structures.

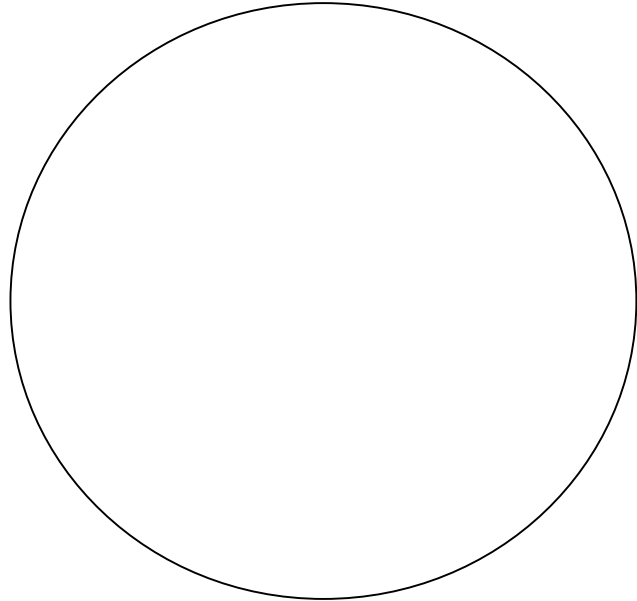
- **Kidney (Cortical Region)** - label and understand function of the following:
  - Renal Corpuscle:
    - Glomerular Capsule made of Simple Squamous Epithelia
    - Glomerulus
    - Lumen
  - Macula Densa
  - Convoluted Tubules (you will not need to distinguish proximal from distal), and associated Cuboidal Epithelia



- **Kidney (Medullary Region)** - label and understand function of the following:
  - Loops of Henle
  - Vasa Recta
  - Collecting Ducts & associated Cuboidal Epithelia



- **Ureter** - label and understand function of the following:
  - Transitional Epithelia of the Mucosal Layer
  - Lamina Propria (thin Submucosal layer)
  - Circular and Longitudinal Smooth Muscle of the Muscularis Externa
  - Adventitia/Serosa
  - Lumen



- **Bladder** - label and understand function of the following:
  - Transitional Epithelia of the Mucosal Layer
  - Lamina Propria (thin Submucosal layer)
  - Circular and Longitudinal Smooth Muscle of the Muscularis Externa
  - Adventitia/Serosa
  - Lumen

