

BIO 212:

1

ANATOMY & PHYSIOLOGY II



LAB **URINARY**

**KIDNEY MODEL
NEPHRON MODEL
CAT DISSECTION**

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Some illustrations are courtesy of McGraw-Hill.



KIDNEY STRUCTURE

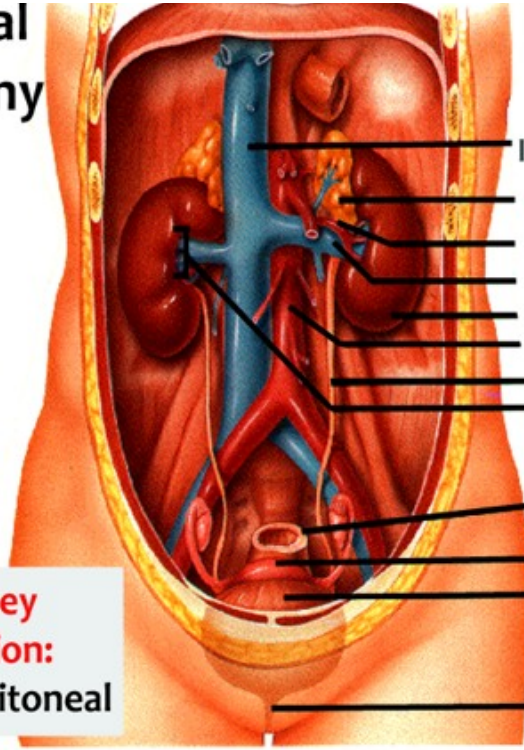
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**Hole's Lab Manual:
EX. 56, Kidney Structure**

Also helpful:

**See Morton and Perry Atlas:
page 129**

General Anatomy



- Inferior Vena Cava
- ADRENAL GLAND**
- RENAL ARTERY**
- RENAL VEIN**
- KIDNEY**
- Aorta
- URETER**
- HILUM**
- Rectum (cut)
- Uterus
- URINARY BLADDER**
- URETHRA**

Kidney location: Retroperitoneal

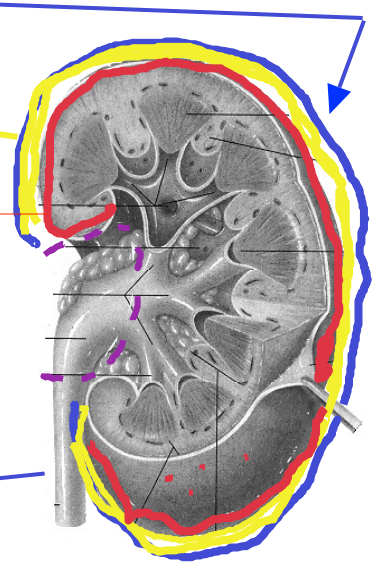
General Anatomy: external KIDNEY

RENAL FASCIA

ADIPOSE

RENAL CAPSULE

**HILUM: Indented region-
 Passage of:
 blood vessels
 nerves
 ureter**



General Anatomy:
internal KIDNEY

*Calyces and pelvis collect urine

*Minor CALYCES

Renal SINUS

*Major CALYCES

*Renal PELVIS

*Minor CALYX

URETER
(to Bladder)

CORTEX

MEDULLA

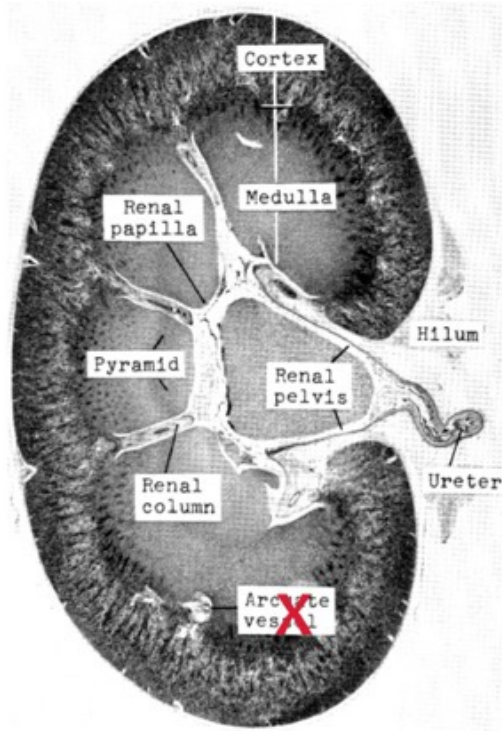
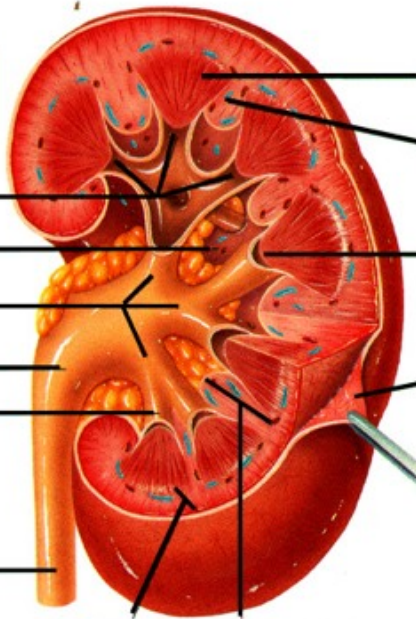
Renal
PYRAMID

Renal
COLUMN

Renal
PAPILLA

Renal
CAPSULE
(peeled back)

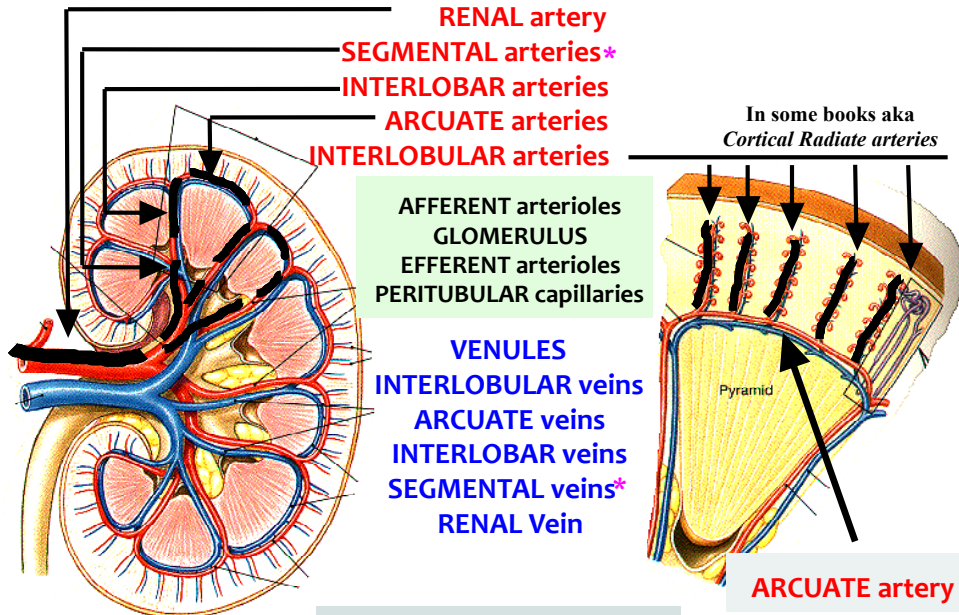
LOBE=
Pyramid +
cortex cap



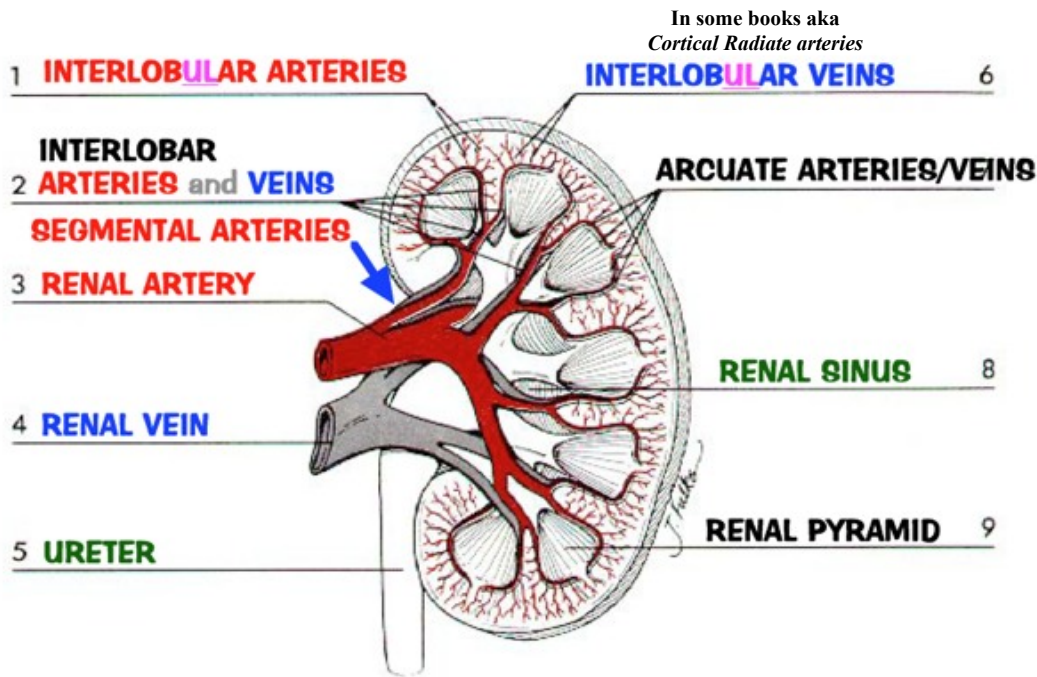
Equivalent:

MP ATLAS:
Figure 97a

KIDNEY BLOOD SUPPLY



*not listed in your books



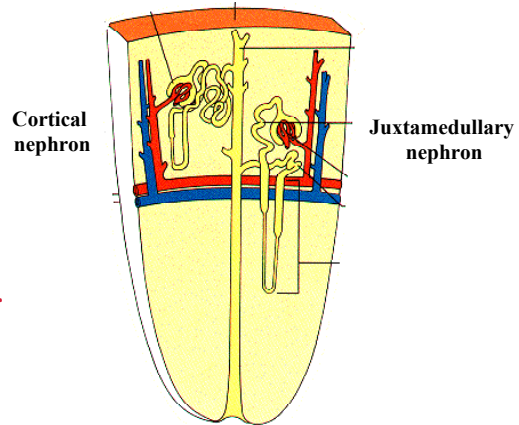
The Nephron: Introduction

- 1 million+per kidney
- urine production
- cortical nephrons (most)
- juxtamedullary nephrons

Each NEPHRON

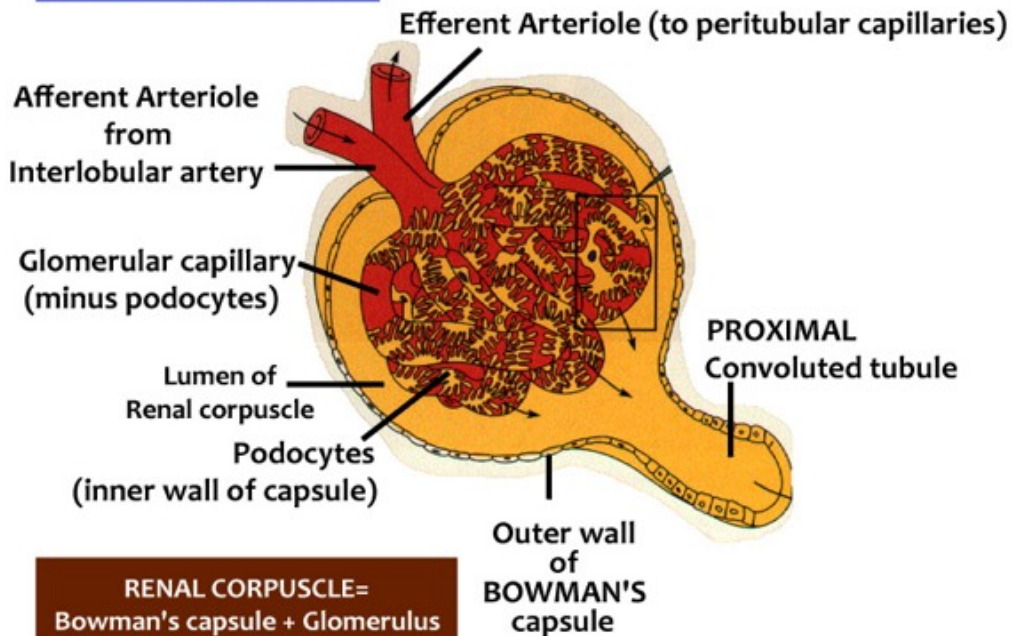
- Glomerulus** (knot of capillaries)*
- Renal tubule**
 - Bowman's (Glomerular) capsule*
 - Proximal convoluted tubule
 - Loop of Henle
 - Distal convoluted tubule

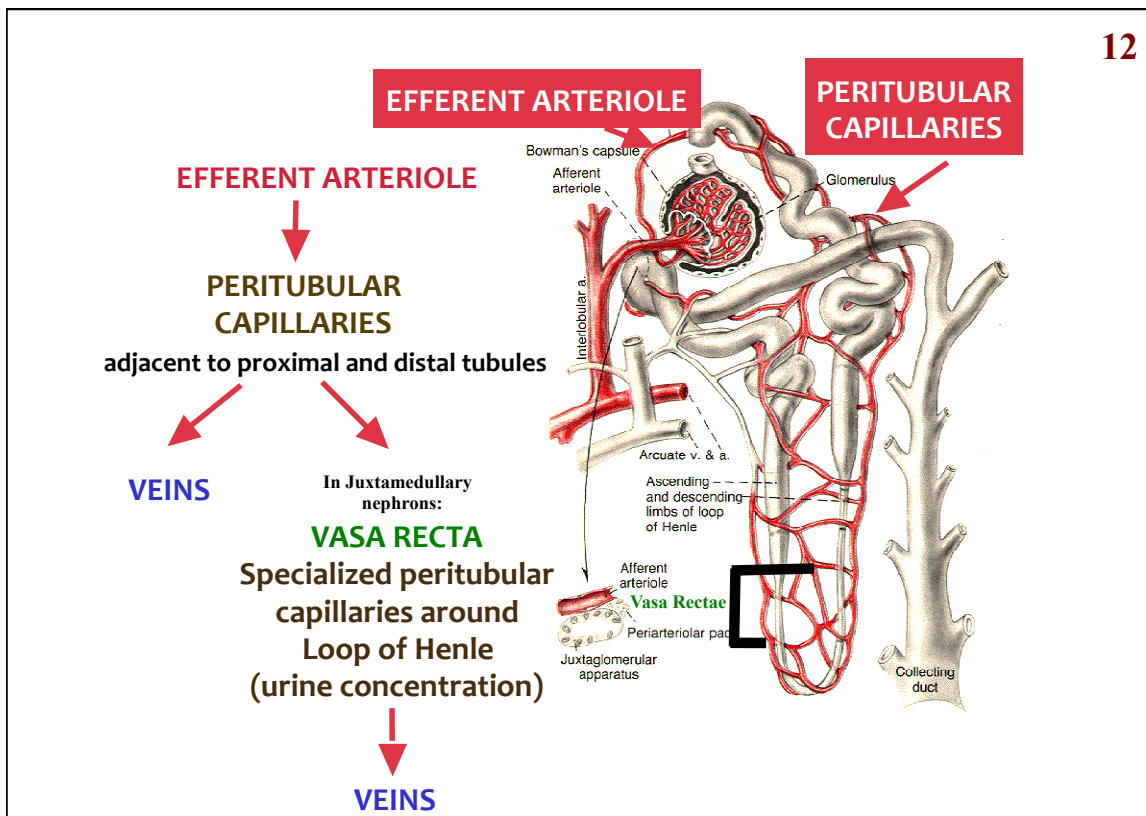
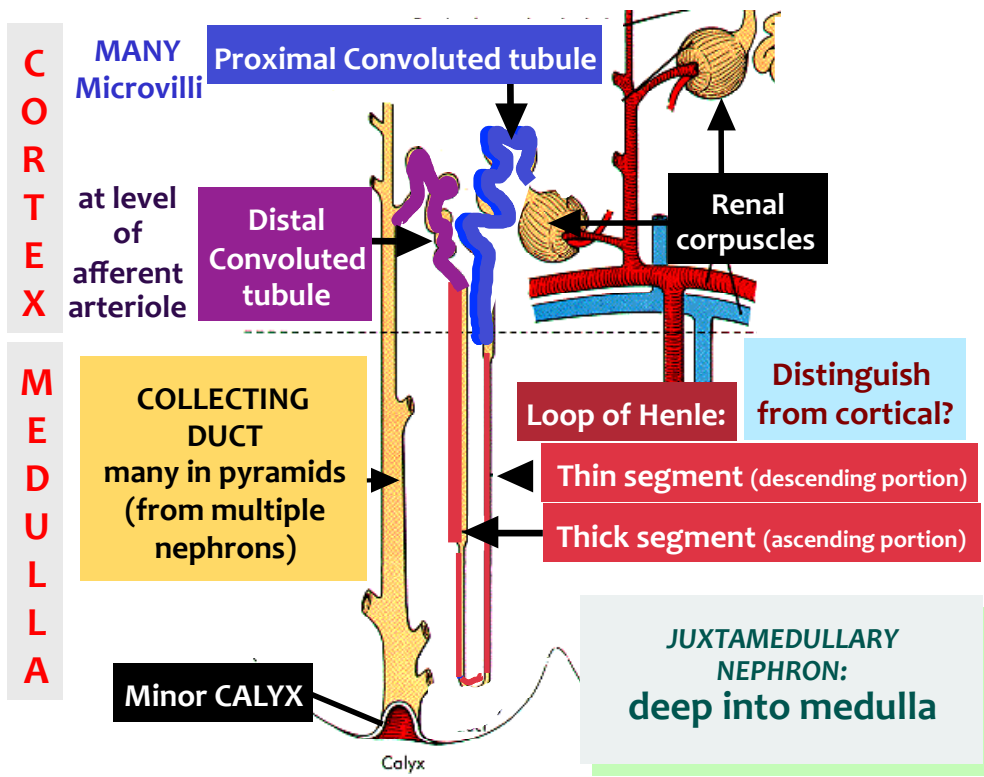
***RENAL CORPUSCLE:**
Glomerulus + Bowman's Capsule



Approx 25% of cardiac output filtered through kidney each minute!

GLOMERULUS





Hole's Lab Manual: EX.58
Cat Dissection: Urinary System

Also helpful:

**See Morton and Perry Atlas:
pages 129 and 130**

LAST SLIDE