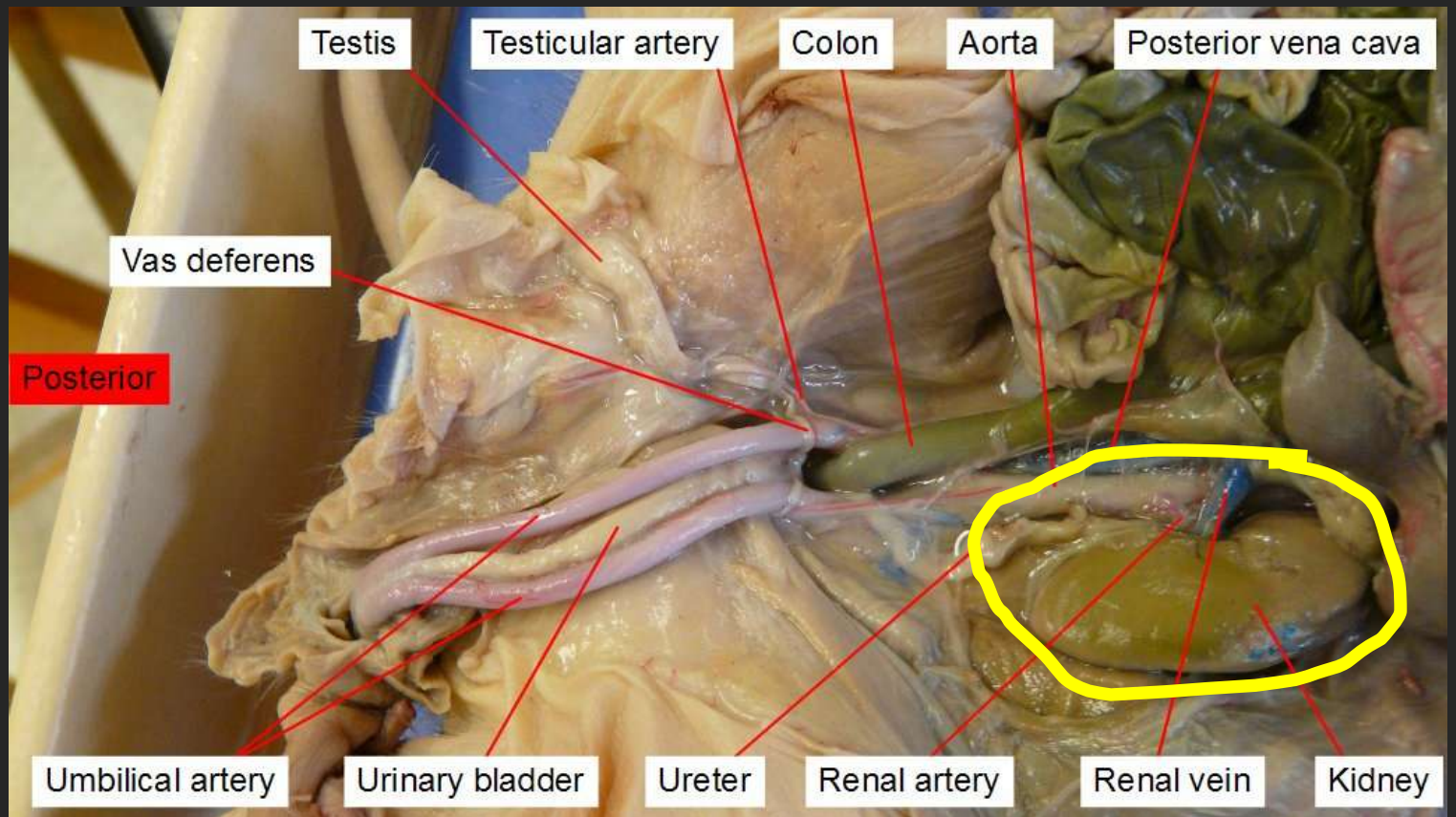
Lab 12:
Basic Mammalian Anatomy II

Complete all sections

- 19.1 – Urinary system
- 19.2 – Male reproductive system
- 19.3 – Female reproductive system
- 19.4 – Anatomy of Testis and Ovary
- 19.5 – Review: Respiratory, Digestive, and Cardiovascular systems

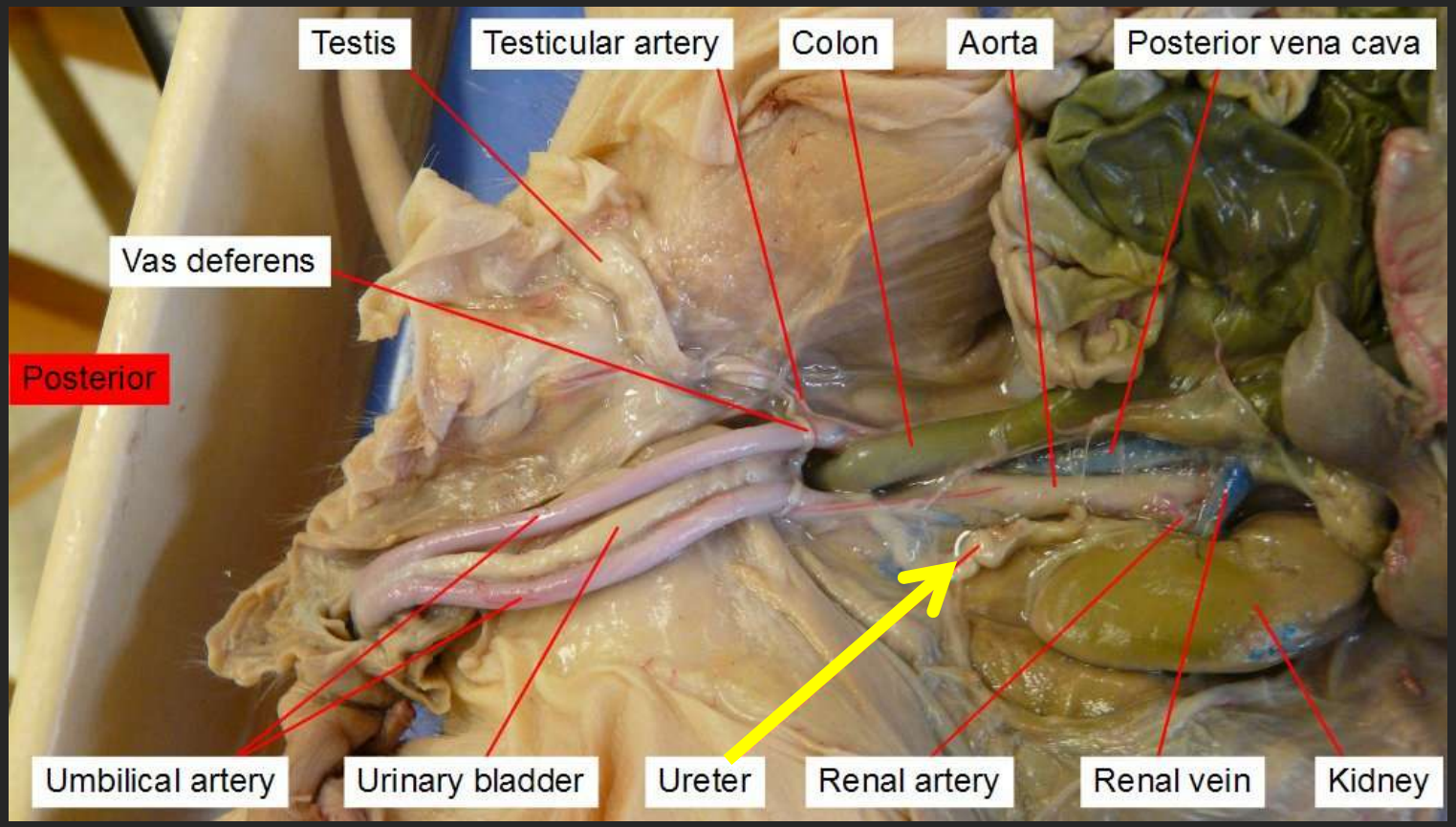
Urinary system

- **Kidneys** – **filters blood** by removing excess water and urea & balancing salts. Produces urine.



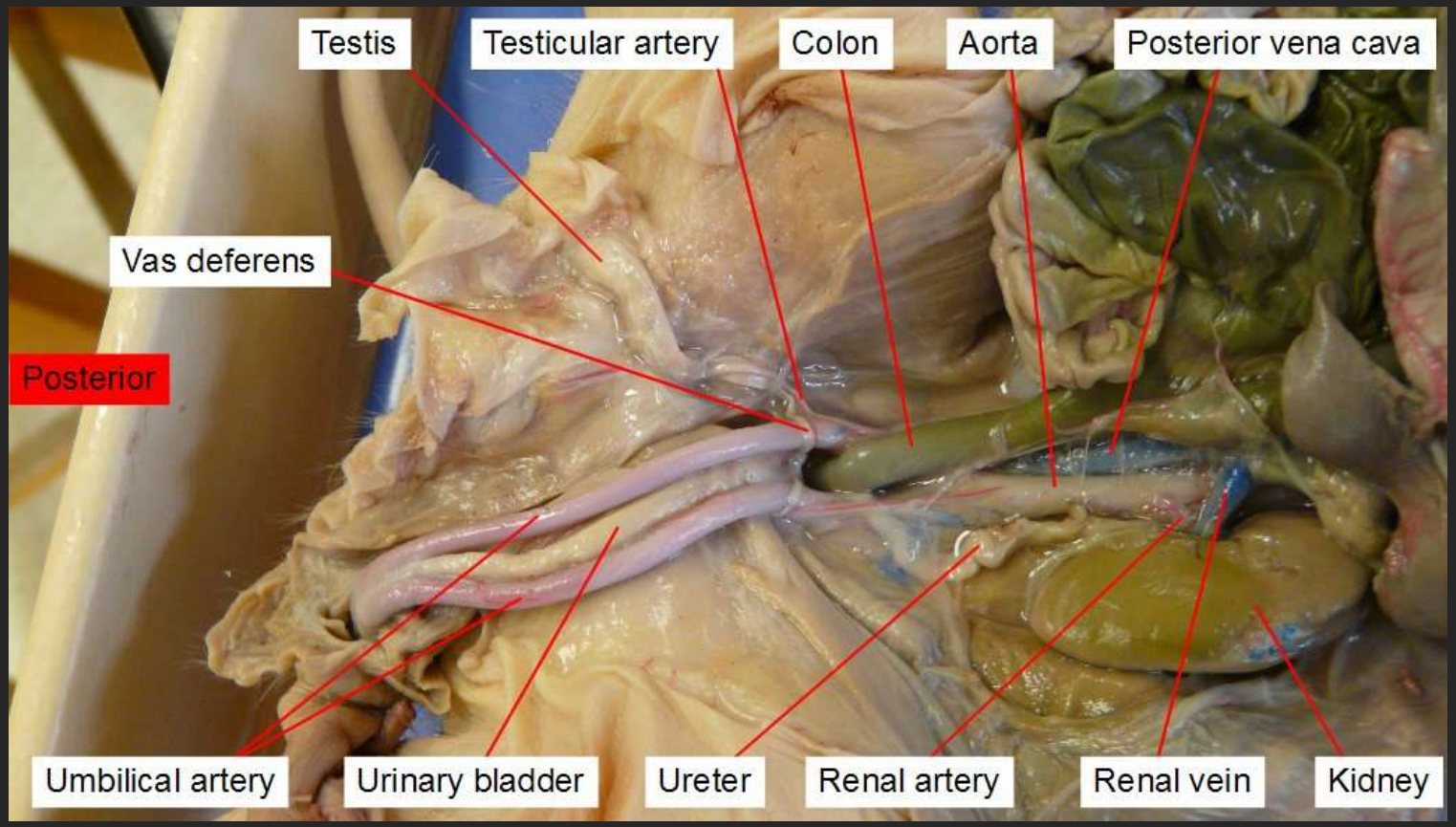
Urinary system

- **Ureters** – conduits that carry urine from each kidney to the bladder.



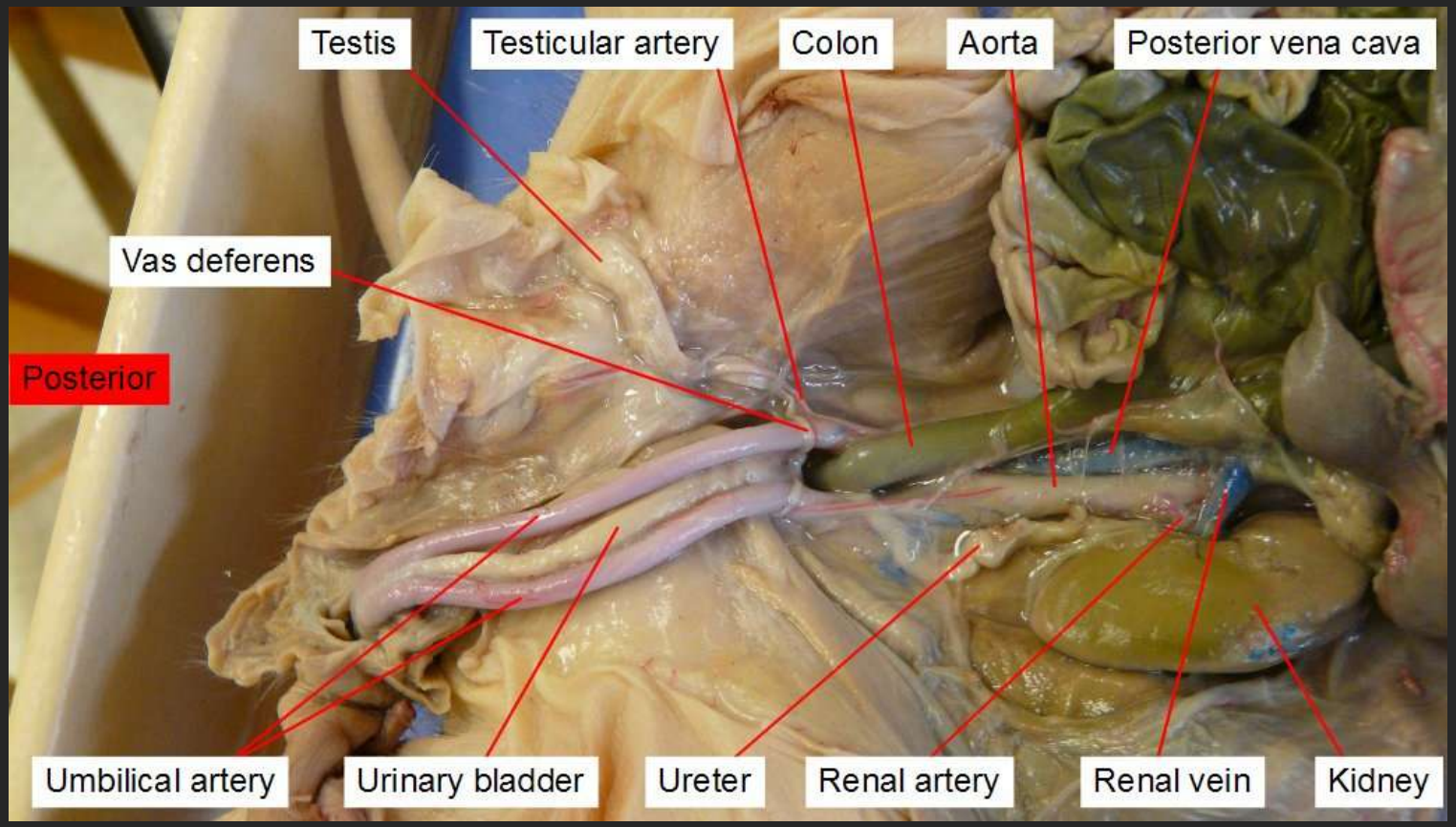
Urinary system

- **Urinary bladder** – stores urine



Urinary system

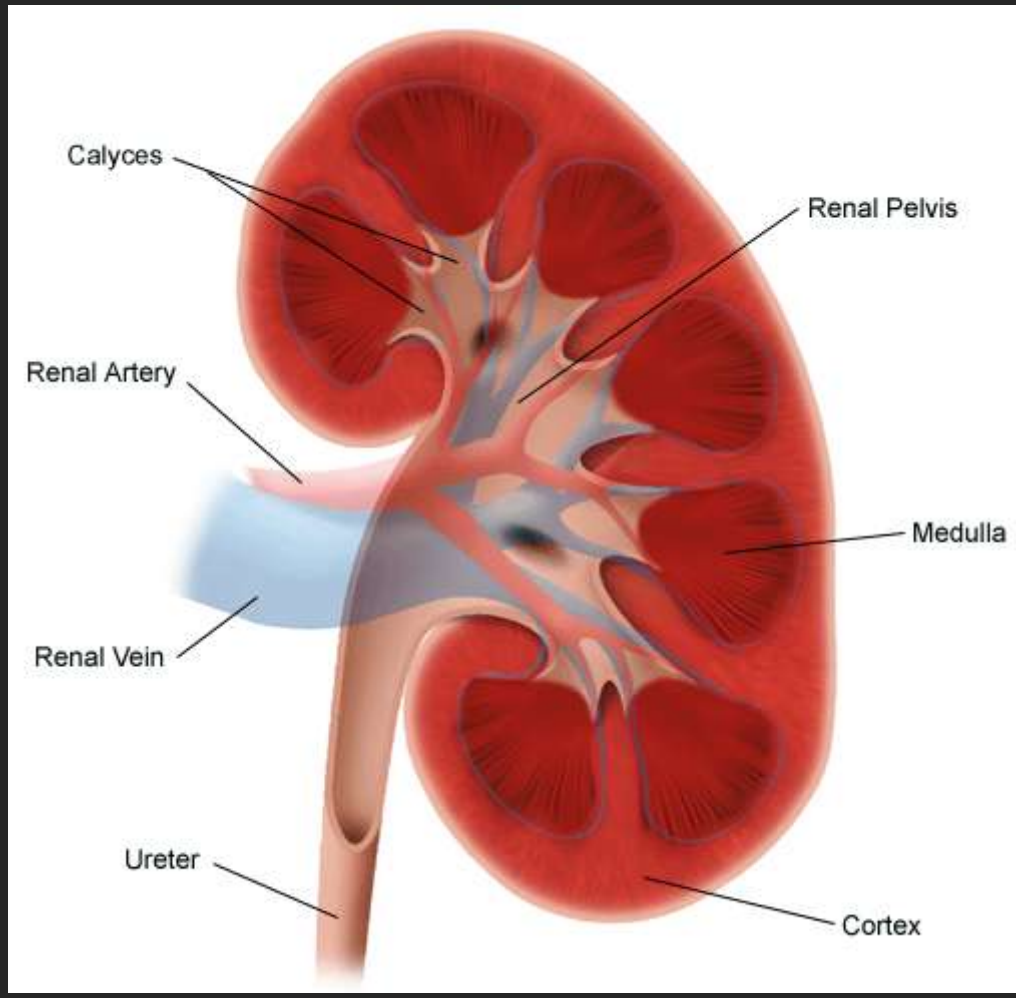
- **Urethra** – conduit for urine to leave the body



Anatomy of a kidney

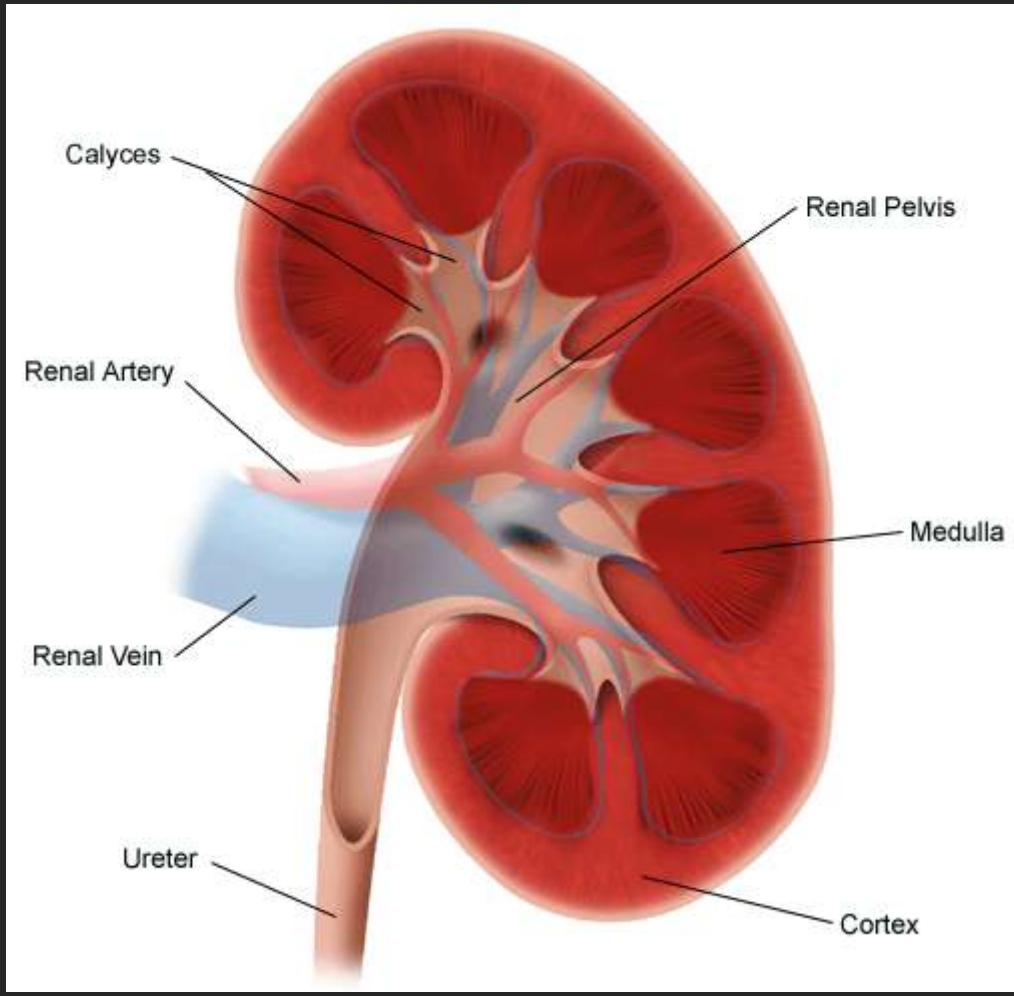
- **Renal artery** brings blood into the kidney

- Blood is forced into a system of small tubules called **nephrons** which is where filtration takes place



Anatomy of a kidney

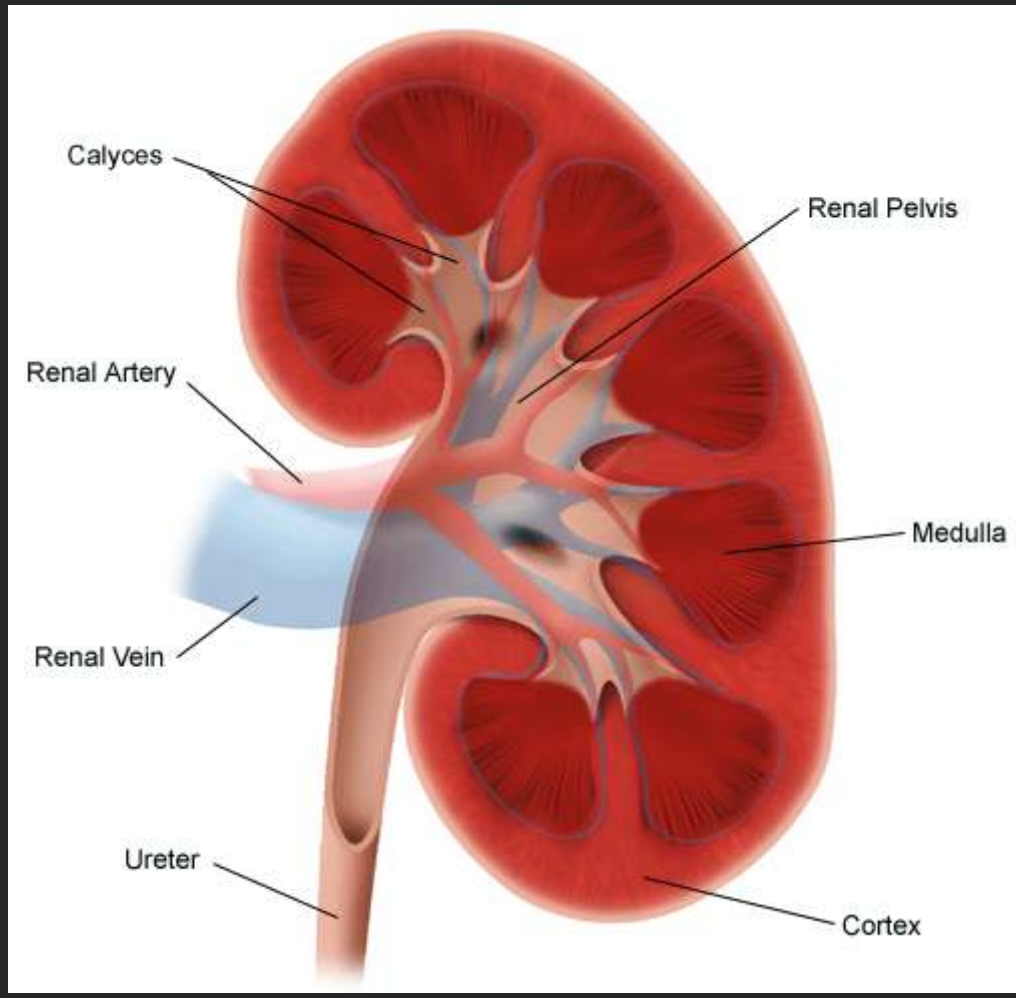
- **Nephrons** are located in the renal cortex and renal medulla
- Collecting ducts bring the urine into the **renal pelvis**



Anatomy of a kidney

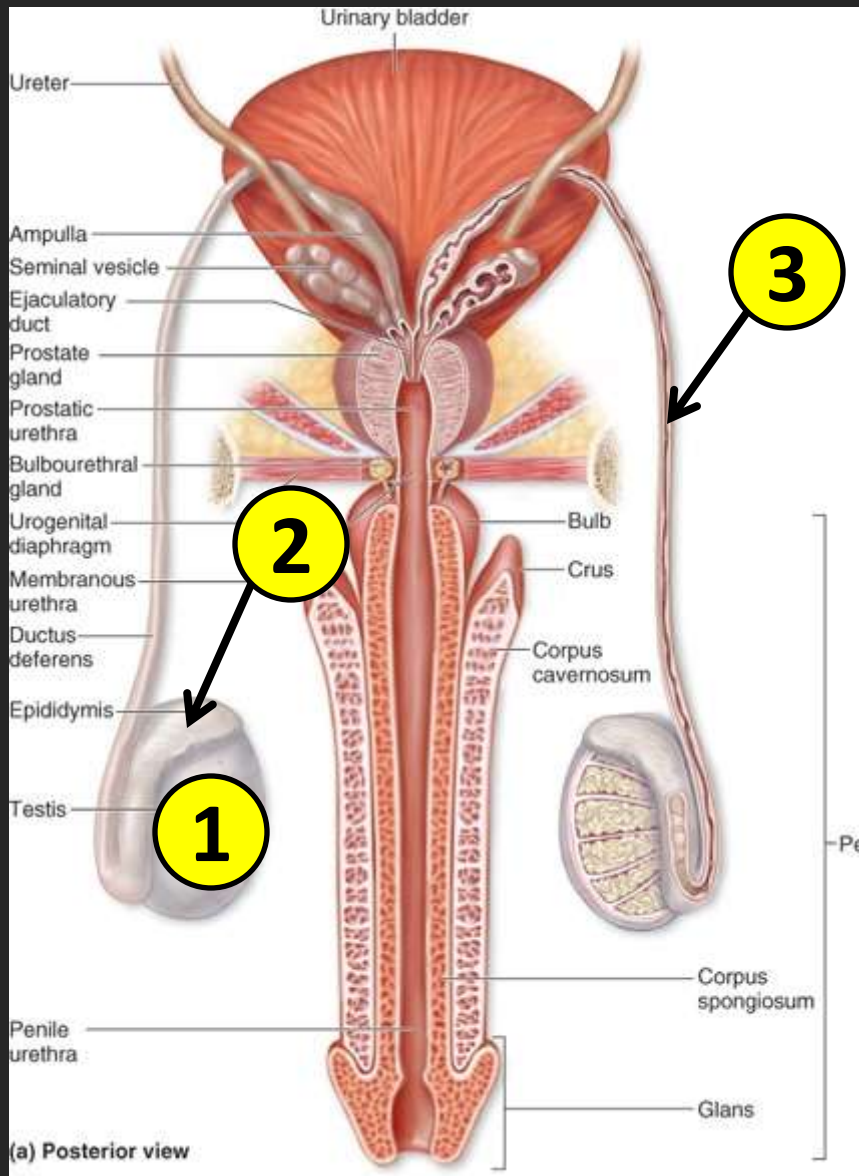
- The urine collecting in the renal pelvis then drains into the **ureter.**

- Finally, filtered blood exits the kidney via the **renal vein.**



Male reproductive system

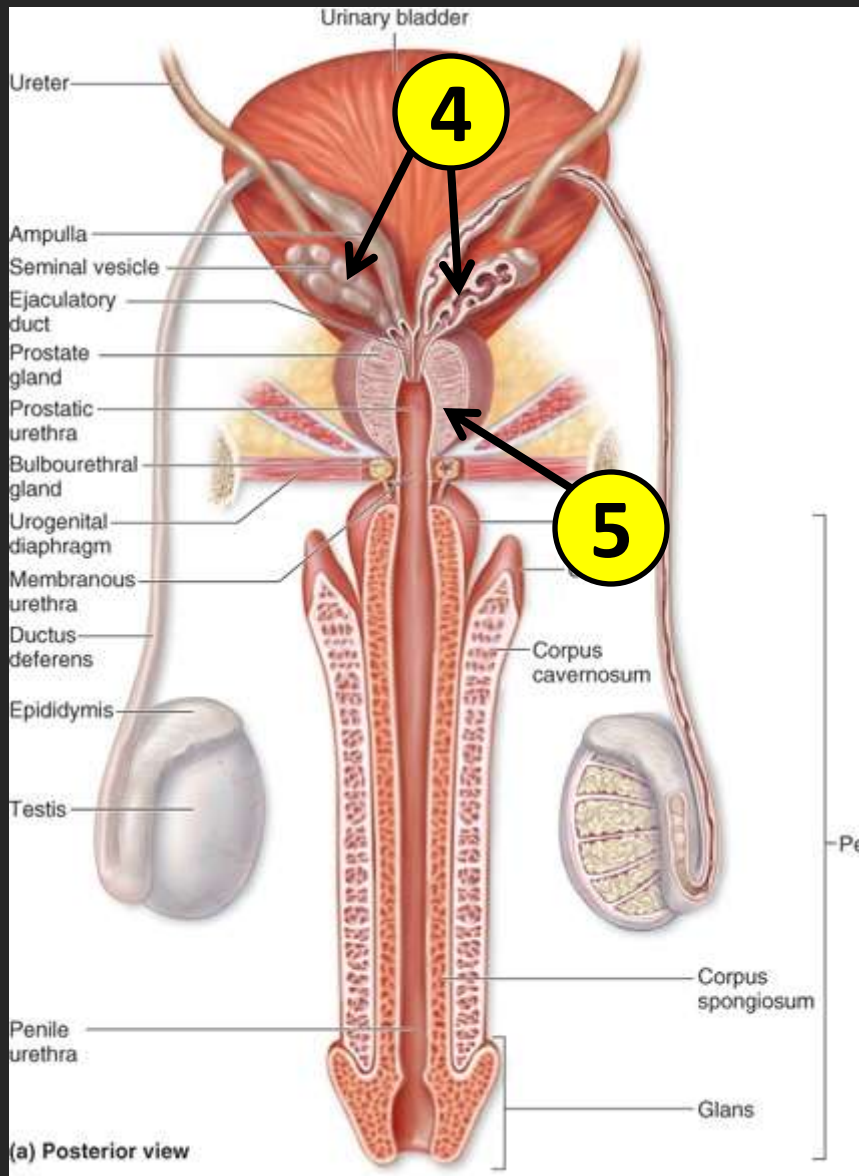
1. **Testes** – produce sperm and testosterone
2. **Epididymus** – stores sperm as they mature
3. **Vas deferens** – stores and carries sperm toward urethra



Male reproductive system

4. Seminal vesicles – sacs attached to bladder, contributes fluid to sperm that contains sugar, proteins, etc.

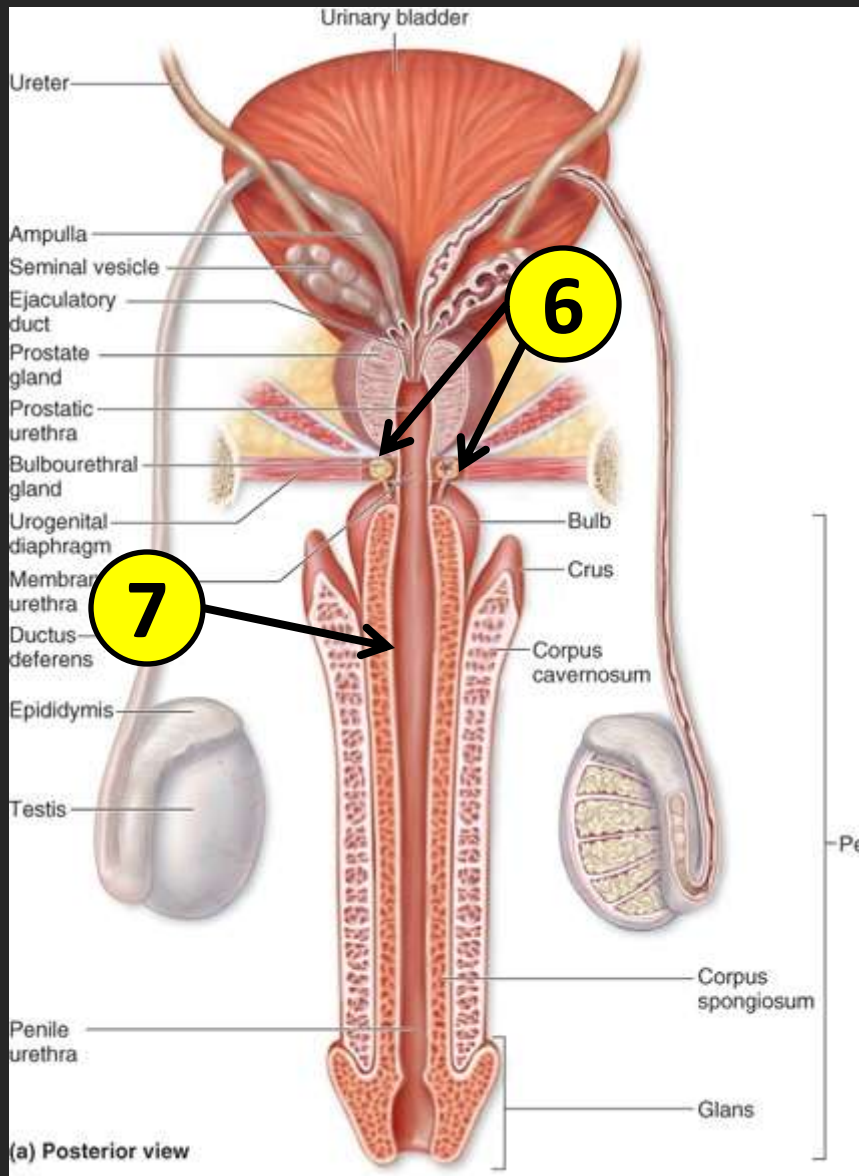
5. Prostate gland – below the bladder, surrounds the urethra; contributes more fluid to semen



Male reproductive system

6. Bulbourethral glands – found below the prostate; contributes mucus to the semen (before the sperm) to flush out acidity in the urethra

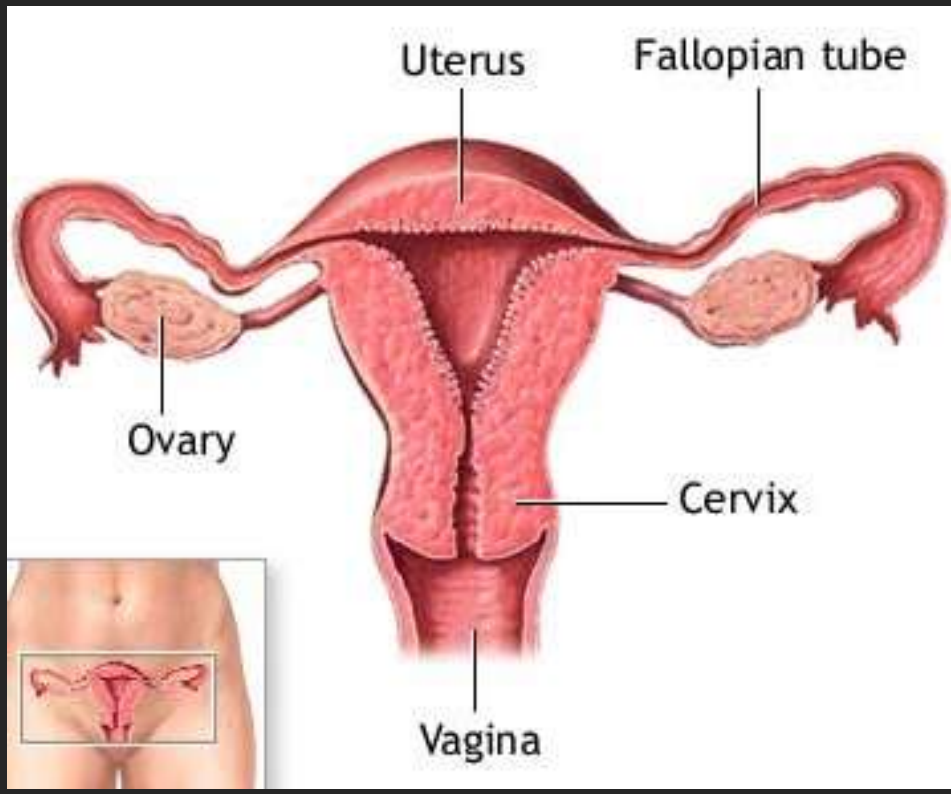
7. Urethra – carries semen out of the body



Female reproductive system

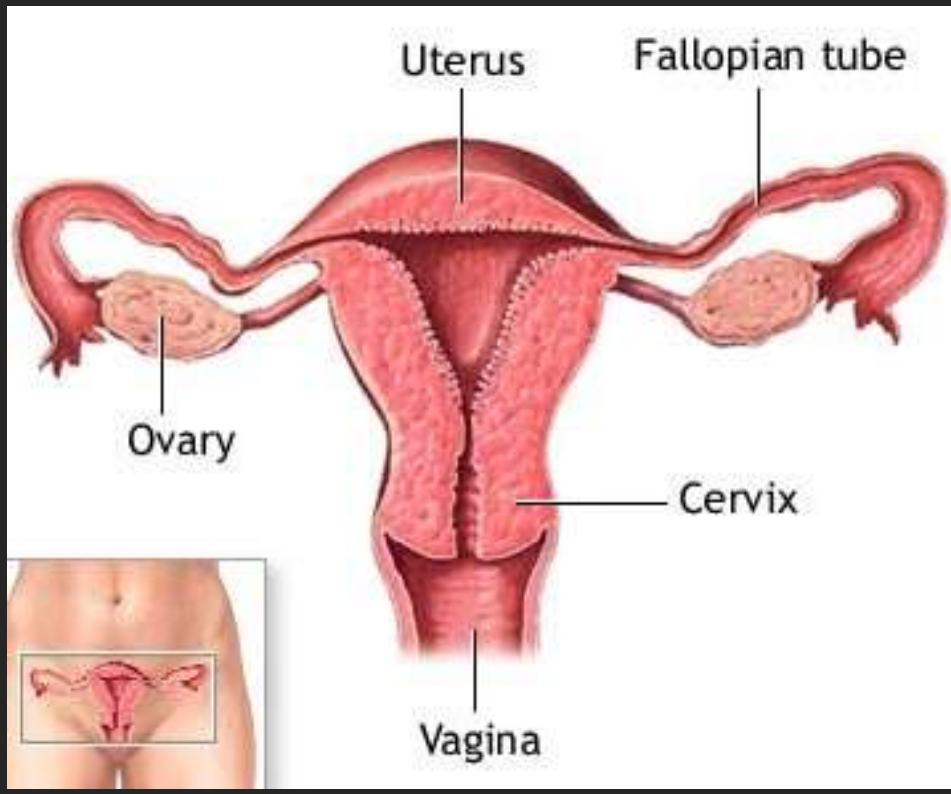
- **Ovary** – produces egg and female sex hormones: **estrogen** and **progesterone**

- **Oviduct (fallopian tube)** – carries egg toward uterus

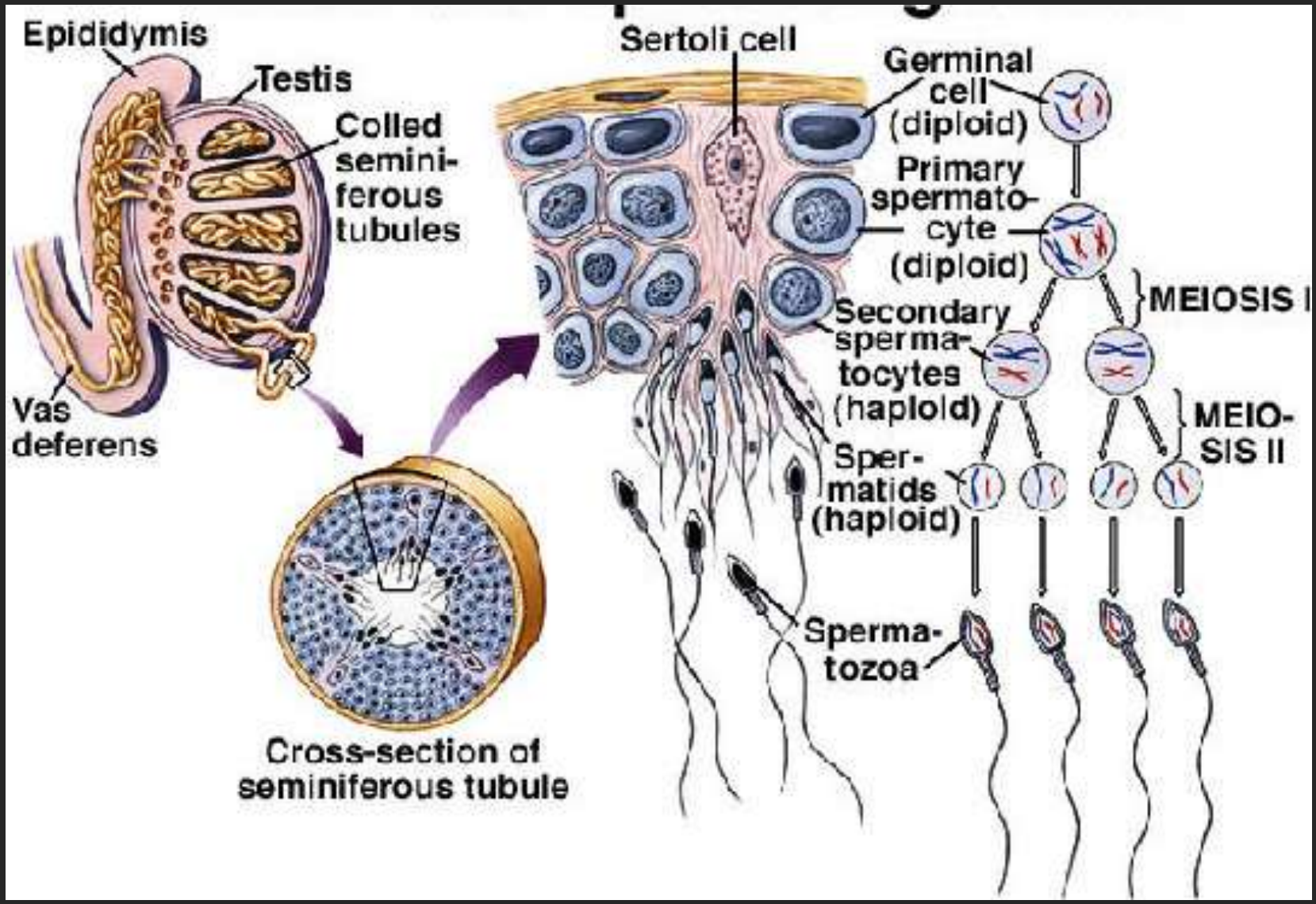


Female reproductive system

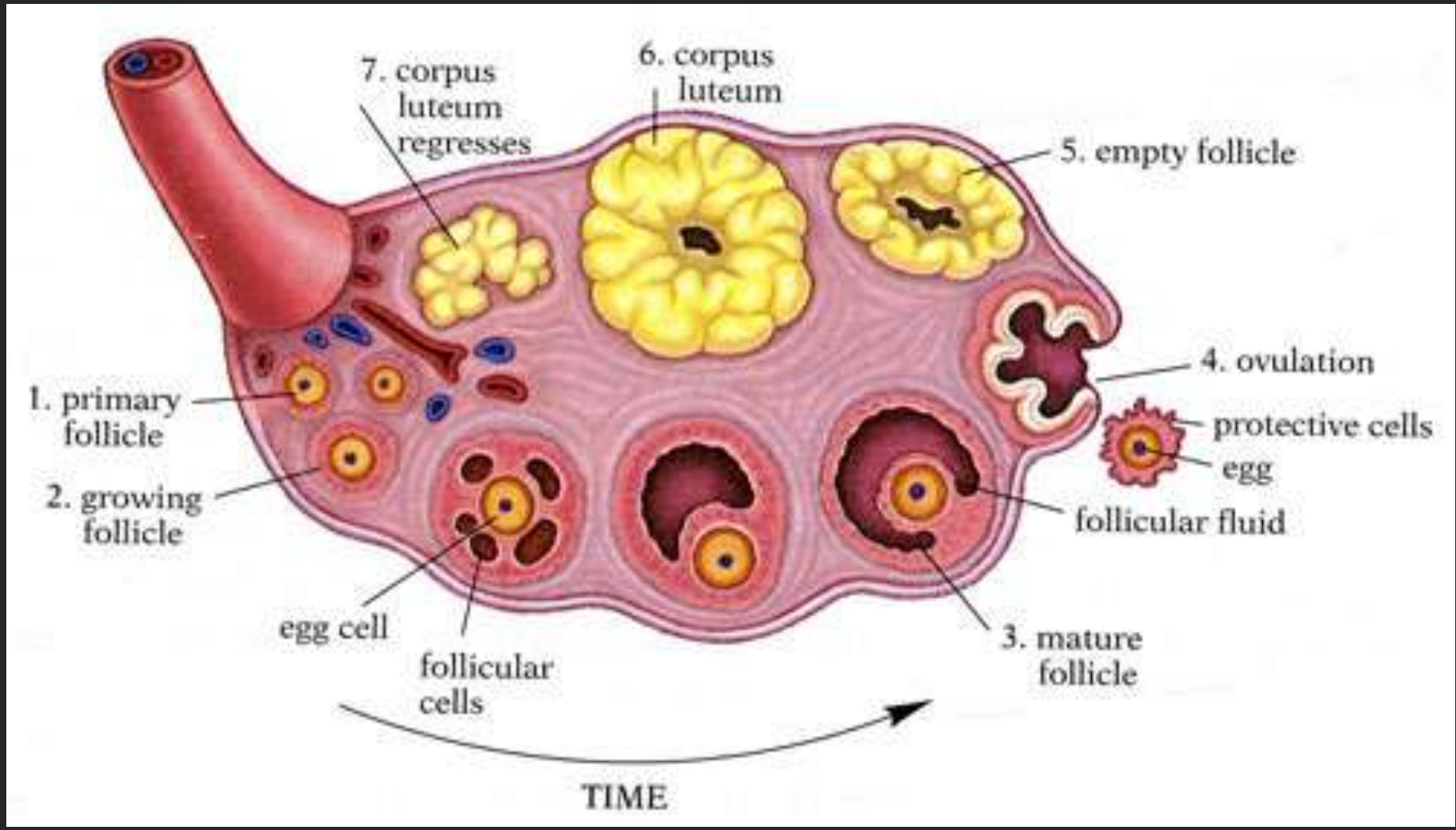
- **Uterine horns (pigs)** – where the uterus and oviducts meet
- **Uterus** – where the fetus develops during gestation
- **Vagina** – birth canal



Anatomy of testis



Anatomy of ovary



Support cells in the gonads

Interstitial cells:

- produce testosterone
- found in the spaces between the seminiferous tubules

Follicles:

- Enclose developing egg
- Produce estrogen/progesterone

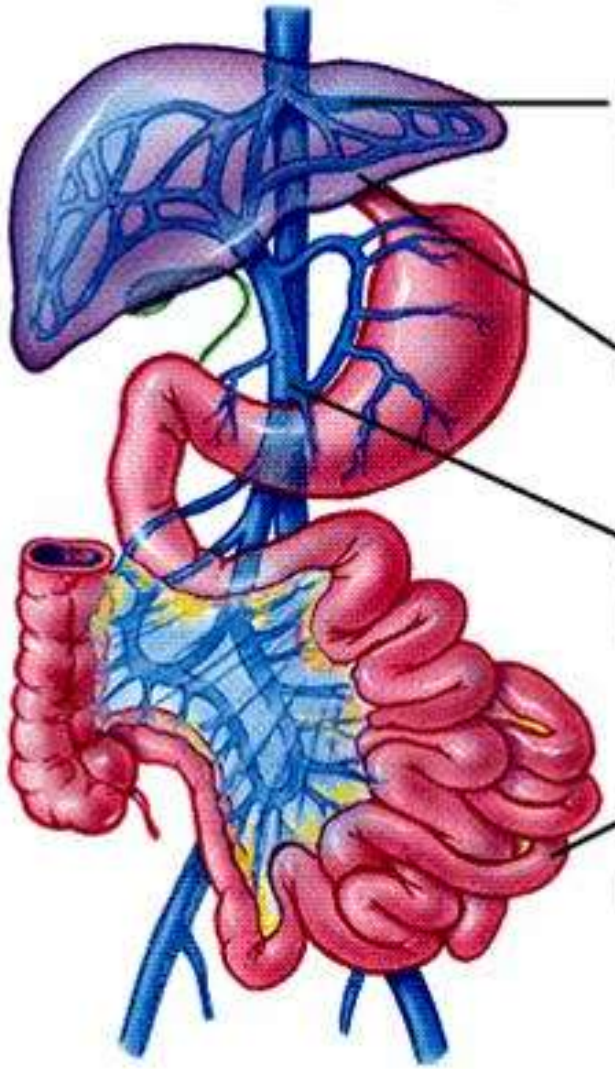
Hepatic Portal System

The hepatic portal system is a system of veins that transport the nutrients from food to the heart.

Nutrients are absorbed from food in the **small intestines** and pass through the hepatic portal vein to the **liver**.

Leaving the liver the nutrients go into the inferior vena cava.

Hepatic Portal System



4. Blood enters general circulation by way of hepatic vein.
Which empties into inferior vena cava

3. Liver monitors blood content.

2. Nutrient molecules travel in hepatic portal vein to liver.

1. Small intestine absorbs products of digestion.

Blue arrows represent the flow of unoxygenated blood and red represents oxygenated blood. Arrow thickness represents blood pressure. Blood vessels that contain high pressure are represented by thick arrows and low pressure is represented by thin arrows.