Classes of nephrons

- **Cortical nephrons**
  - 85% of all nephrons
  - Almost entirely within cortex

- **Juxtamedullary nephrons**
  - Renal corpuscles near cortex-medulla junction
1. Glomerulus: filters small solutes from the blood

2. Proximal convoluted tubule: reabsorbs ions, water, and nutrients; removes toxins and adjusts filtrate pH

3. Descending loop of Henle: reabsorbs Na\(^+\) and Cl\(^-\) from the filtrate into the interstitial fluid

4. Ascending loop of Henle:

5. Distal tubule: selectively secretes and absorbs different ions to maintain blood pH and electrolyte balance

6. Collecting duct: reabsorbs solutes and water from the filtrate
Juxtaglomerular complex
  - Macula densa cells of the ascending limb of nephron loop
  - Extraglomerular mesangial cells
  - Granular cells
**Glomerulus**
Blood is filtered through pores in the capillaries

**Proximal convoluted tubule**
Most of the water and nutrients are reabsorbed into the blood here

**Distal convoluted tubule**
The water content of urine is fine-tuned here and in the urine-collecting duct

**Flow of filtrate**
This solution, which is free of protein and cells, is called glomerular filtrate

**Loop of Henle**
Water and salts are reabsorbed here, changing the concentration of the filtrate
Excretion = Filtration - Reabsorption + Secretion