The Heart: 4 Chambers

- the right and the left sides of the heart act as seperate pumps (right → lungs, left - systemic)
- the septa seperates the chambers
  - interventricular septum
    - seperates the 2 ventricles
  - interatrial seprum
    - seperates the 2 atria
- The 4 chambers:
  - Atria are recieving chambers - there's the right atrium and left atrium
    - the atria doesn't have a lot of skeletal muscle - blood isn't pumped very far, just from the atria to the ventricle.
  - ventricles are discharging chambers - there's the right and left ventricle
    - the right ventricle pumps to the lungs - not a super far distance so it has less skeletal muscle than the left ventricle
    - the left ventricle pumps blood everywhere, it has lots of skeletal muscle.

The Heart: Valves

Valves allow blood to flow in only one direction to prevent backflow

4 valves:

- Atrioventricular valves (AV) are between the atria and the ventricles
  - AV valves are anchored in place by chordae tendinae ("heart strings") these chordae tendineae give heart a specific shape, allowing blood to

leave and enter optimally
- these valves are open during heart relaxation and closed during ventricular contraction
- the Bicuspid (mitral) valve is on the left side of the heart ("bye" they "left")
- the tricuspid valve is on the right side of the heart (keep trying because it's right)

- Semilunar valves
  - semilunar valves are between the ventricle and the artery
  - they look like half moons - they also don't have flaps
  - there's the pulmonary semilunar valve, which is right before the pulmonary artery(?)
  - there's the aortic semilunar valve, which is right before the aorta artery
  - closed during heart relaxation but open during ventricular contraction

the valves opperate opposite of one another to force a one way path of blood through the heart.
- they're open and closed and complimentary times!
No backflow!

Valves and Unidirectional Blood Flow

valves gives us unidirectional blood flow. pressure pushing against them moves blood.
- pressure within chambers of the heart vary with heartbeat cycle
- pressure difference drives blood flow: high pressure to low pressure

- Normal direction of flow:
  veins → atria → ventricles → arteries
- valves prevent backflow of blood
- all valves open passively based on pressure gradient

pressure opens the valves