

Capillaries:

- Smallest (RBC)
- Very thin walls (only 1 cell)
 - B/c diffusion has a distance problem
- Site exchange (D)
 - Higher surface area
 - Lower flow rate
- Lowered hydrostatic Pressure

Venules: return to the heart

- Thin walled
 - Not bc the same reason of the
 - Bc there is not enough force
 - Further from the heart so bp is lower
- Lowered hydrostatic pressure
 - Less surface area

Veins

- Bigger returning
- Lower hydrostatic pressure
 - Bc is the furthest away from the heart
- Skeletal muscle present

- Flow is still based on the actions of the heart
 - o Decreasing bp bc were getting further from source of pressure but still based on the heart
 - o Like trying to go against a crowd
 - o Harder for the heart to get the blood back to us when we send it down so far bc we have an issue with gravity
 - Coming back were going against gravity
 - RICE - so we can help the heart circulate blood flow to the foot when injured
- Flow still based on the heart
 - o But aided by skeletal muscle
 - o Cuspid valve or semi something valve
 - o One way valves - BLOOD ONLY GOES ONE WAY THROUGH THEM

Blood Pressure

- Arterial Blood Pressure
 - o The pressure that the Dr. measures with the cuff
 - o Determined by:
 - 1. Volume of blood
 - $PV=nRT$
 - Volume of blood is actually n
 - Size of the vessel is V
 - 2. Wall's rigidity
 - If walls are elastic the blood pressure goes down bc energy is spent pushing against walls instead of carrying blood through
 - o In large vessels, mirrors cardiac cycle

- Has diminished bc of elasticity of the walls
- Systolic P:
 - Squeeze
 - Maximum pressure at the end of the contraction
 - If the first number is too big the heart is squeezing a lot
 - Top number
- Diastolic P:
 - Minimum pressure before the next contraction
 - Volume is the smallest
 - $PV=nRT$
 - Smallest volume = biggest pressure
 - Bottom number
- Arteriolar Blood Pressure
 - Arterioles regulate flow to areas (e.g. organs)
 - When coming off of the heart we see all one pressure
 - Shouldn't see a big pressure
 - When having arterioles we can have all different pressures
 - Difference in flow by difference in diameter
 - Make adjustments
 - Change flow going to a particular area in 3 basic ways:
 - 1. Local factors