The cardiovascular system includes the heart, vasculature, and the blood it contains. The primary function of the system is the transport of oxygen and nutrients throughout the body. Blood pressure is the force with which blood pushes against the blood vessels and is impacted by a number of factors including blood volume and heart rate.

**The Cardiac Cycle**
Each heart beat sends deoxygenated blood to the lungs and oxygenated blood to the body

- **Systole**: Heart contraction
- **Diastole**: Heart relaxation

**Systolic** pressure is the force of ejected blood in arteries during heart contraction

**Diastolic** pressure is the force of blood in arteries between heart beats

Circulation is possible because fluid flows from areas of high pressure to areas of low pressure. Blood pressure is highest in the aorta and falls progressively from Arteries → arterioles → capillaries → venules → veins

**Stress and Sympathetic Activation**
- High Blood Pressure
  - Decreased heart rate
  - Vasodilation

**Dehydration or Blood Loss**
- Low Blood Pressure
  - Vasoconstriction
  - Increased heart rate
  - Release of angiotensin, renin, and aldosterone
  - Kidney retains water and sodium

**Blood Pressure Normalized**