Important: The highest pressure of circulating blood is found in **arteries**, and gradually drops as the blood flows through the arterioles, capillaries, venules, and veins (where it is the lowest). The greatest **drop in blood pressure** occurs at the transition from arteries to arterioles.

Arterioles are one of the blood vessels of the smallest branch of the arterial circulation. Blood flowing from the heart is pumped by the left ventricle to the aorta (largest artery), which in turn branches into smaller arteries and finally into arterioles. The blood continues to flow through these arterioles into capillaries, venules, and finally veins, which return the blood to the heart.

Arterioles have a **very small diameter** (<0.5 mm), a **small lumen**, and a relatively **thick tunica media** that is composed almost entirely of **smooth muscle**, with little elastic tissue. This smooth muscle constricts and dilates in response to neurochemical stimuli, which in turn changes the diameter of the arterioles. **This causes profound and rapid changes in peripheral resistance**. This change in diameter of the arterioles regulates the flow of blood into the capillaries. **Note:** By affecting peripheral resistance, arterioles **directly affect** arterial blood pressure.

Primary function of each type of blood vessel:

- Arteries - transport blood away from the heart, generally have blood that is rich in oxygen
- Arterioles - control blood pressure
- Capillaries - diffusion of nutrients/oxygen
- Veins - carry blood back to the heart, generally have blood that is low in oxygen