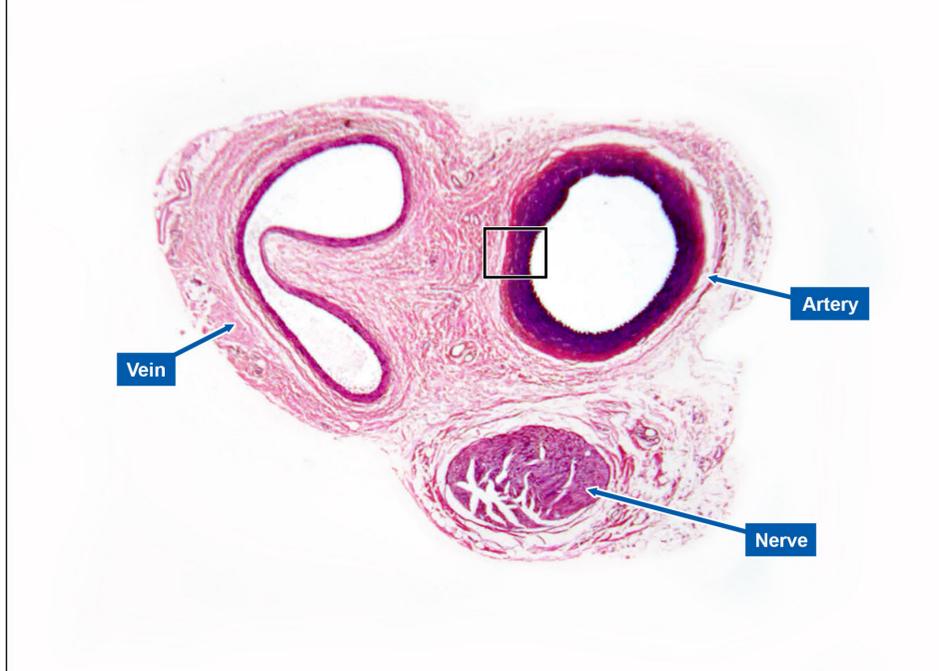


## ARTERY AND VEIN

## Cell &amp; Tissues of the Body

The images show a cross section of an artery, a vein, and a nerve. It also shows a magnified image of the lumen of the artery, along with the vasa vasorum.



Low magnification



High magnification

1. Tunica media of blood vessels are made of smooth muscle (visceral muscle) cells.
2. Innervated by the autonomic system, smooth muscles allow for constant and gradual contraction.
3. **Smooth muscle fibres** are long and **non-striated**, surrounded by a thin basal lamina and small network of reticular fibres known as endomysium.
4. Blood vessels have three layers: Tunica intima, Tunica media, and Tunic externa.
5. Tunica media is constructed from smooth muscles and elastic fibres.

**Veins:** They are thin walled, have a large and irregular lumen, and one-way valves.

1. Tunica intima appears thin, flat, and smooth. Made up of simple squamous epithelium.
2. Tunic media is thinner than tunic externa and has smooth muscle cells and collagenous fibres, and Tunic externa is the thickest layer in veins, has some smooth muscle fibres.
3. The valves ensure no backflow of blood. The contraction of the skeletal muscles surrounding the veins generate pressure for the blood to be forced towards the heart.

**Artery:** Blood vessels which transport blood away from the heart.

1. Walls of the artery are thick, allowing them to withstand high pressure when expelled from the heart.
2. Have a lot of elastic fibres - elastic artery usually found close to the heart.
3. Muscular artery - number of elastic fibres reduces as artery is further from the heart, and smooth muscles in tunica media increases.
4. The **endothelium (simple squamous epithelium)** in the tunica intima appears wavy due to constrictions of smooth muscles.

**Vaso Vasorum:** (A blood vessel that feeds a blood vessel) provides nutrition and oxygen to the arterial and venous walls. It also removes “waste” products.

Treponema pallidum blocks Vaso-vasorum of aorta leading to syphilitic aortitis (Aortic Arch Aneurysm).