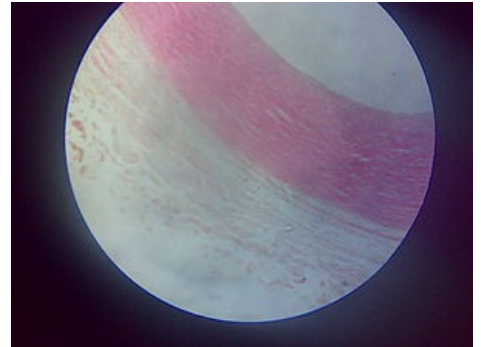


Functional typology of vessels

Vessels are divided into six classes in the cardiovascular system according to their main **physiological function**. This division mainly takes into account the application of specific types of blood vessels in the **hemodynamics of blood circulation** (the main criterion is therefore not the conduction of oxygenated or deoxygenated blood).

Vessels of the sphincter

We include **large and medium arteries** (aorta and its branches). in the elastic category. The main task is the rapid transfer of blood in the elastic category. The main task is the rapid transfer. Tunica media contains large amounts of elastic fibers, glycosaminoglycans and glycoproteins. In contrast, the representation of smooth muscle cells is small. In older people collagen fibers increase in the wall and the vessel wall becomes stiffer. Thanks to the elasticity of the wall, the elastic vessels are able to change the sudden flow of blood arising during systole to a continuous flow.



aorta

Resistance vessels

They regulate blood flow to the organs. About half is involved in peripheral resistance. We include:

- **arterioles and small arteries** (or precapillary resistance vessels), which have a small lumen and a high proportion of smooth muscle cells in the wall, thanks to which they can regulate the distribution of minute cardiac output to individual organs.
- **venules** (or postcapillary resistance vessels) make up a smaller proportion of resistance vessels. Their importance lies mainly in the regulation of the tension between the pre- and post-capillary resistance vessels, thereby controlling the hydrostatic pressure of the blood in the capillaries and thus also filtration and reabsorption.

Precapillary sphincters

This type of vessels is located in the final section of precapillary resistance vessels, with their tension (due to the high content of smooth muscle cells in the wall) they decide the number of open and closed capillaries.

Capillaries

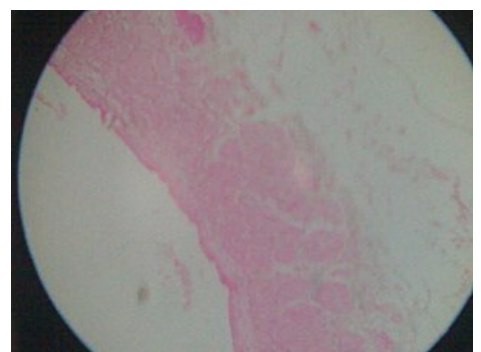
The thin wall of the capillaries (in some organs the wall also has fenestrations) enables the exchange of substances between the blood and the interstitial fluid.

Arteriovenous shunts

They represent a **direct connection** of arterial and venous channels, typically found in the skin, for example. They enable a rapid flow of blood through the organ (during which the blood flow through the capillaries decreases or stops), because the capillary network is bypassed.

Capacitance vessels

This category primarily includes **veins**. Thanks to their flexible wall with a small amount of smooth muscle cells, they can serve as a blood reservoir. This supply is important due to the fact that the need for blood distribution in individual organs is constantly changing.



Vena cava

Link

Related articles

- Blood capillaries, function, management

References

- TROJAN, Stanislav. *Medical Physiology*. 4th edition edition. Grada, 2003. pp. 772. ISBN 80-247-0512-5.

