

Transport

Three adaptations of capillaries for exchange

Transport

Fenestrations

Transport

How to tell an artery from a vein in a micrograph

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Role of elastic fibres in arteries

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Role of smooth muscle in arteries

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Two adaptations of veins for returning blood

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Where can the pulse be felt?

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Occlusion of a coronary artery

Pores in the walls of some capillaries, for example in the kidney glomerulus, that allow particularly rapid exchange.

Branching and narrow diameters (large surface area), thin walls one cell thick, and fenestrations where exchange must be rapid.

Stretch when blood is pumped in and recoil between beats, maintaining high pressure and pushing blood on.

Artery: thick wall compared with a narrow, round lumen. Vein: thin wall compared with a wide, often flattened lumen.

Valves prevent backflow; thin, flexible walls are compressed by contracting skeletal muscles, pushing blood towards the heart.

Contracts to narrow the lumen, helping to maintain blood pressure; the thick wall withstands high pressure.

Blockage by fatty plaque (atherosclerosis) or a blood clot, cutting O₂ supply to cardiac muscle and causing a heart attack.

At the radial artery (inside of the wrist) or carotid artery (neck), using fingertips, not the thumb.

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What does a correlation coefficient show?

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Cohesion-tension mechanism

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Four adaptations of xylem vessels

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Arrangement of tissues in a dicotyledonous stem

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Arrangement of tissues in a dicotyledonous root

Transpiration draws water out of xylem by capillary action, creating tension that pulls water up; cohesion keeps the column continuous.

The strength of the correlation between two variables, from -1 to $+1$. A strong correlation does not prove causation.

Epidermis, cortex, ring of vascular bundles (phloem outside, xylem inside) and central pith.

No cell contents, incomplete or absent end walls, lignified walls to withstand tension, and pits for water entry and exit.

Epidermis with root hairs, wide cortex, central vascular region with star-shaped xylem and phloem between its arms.