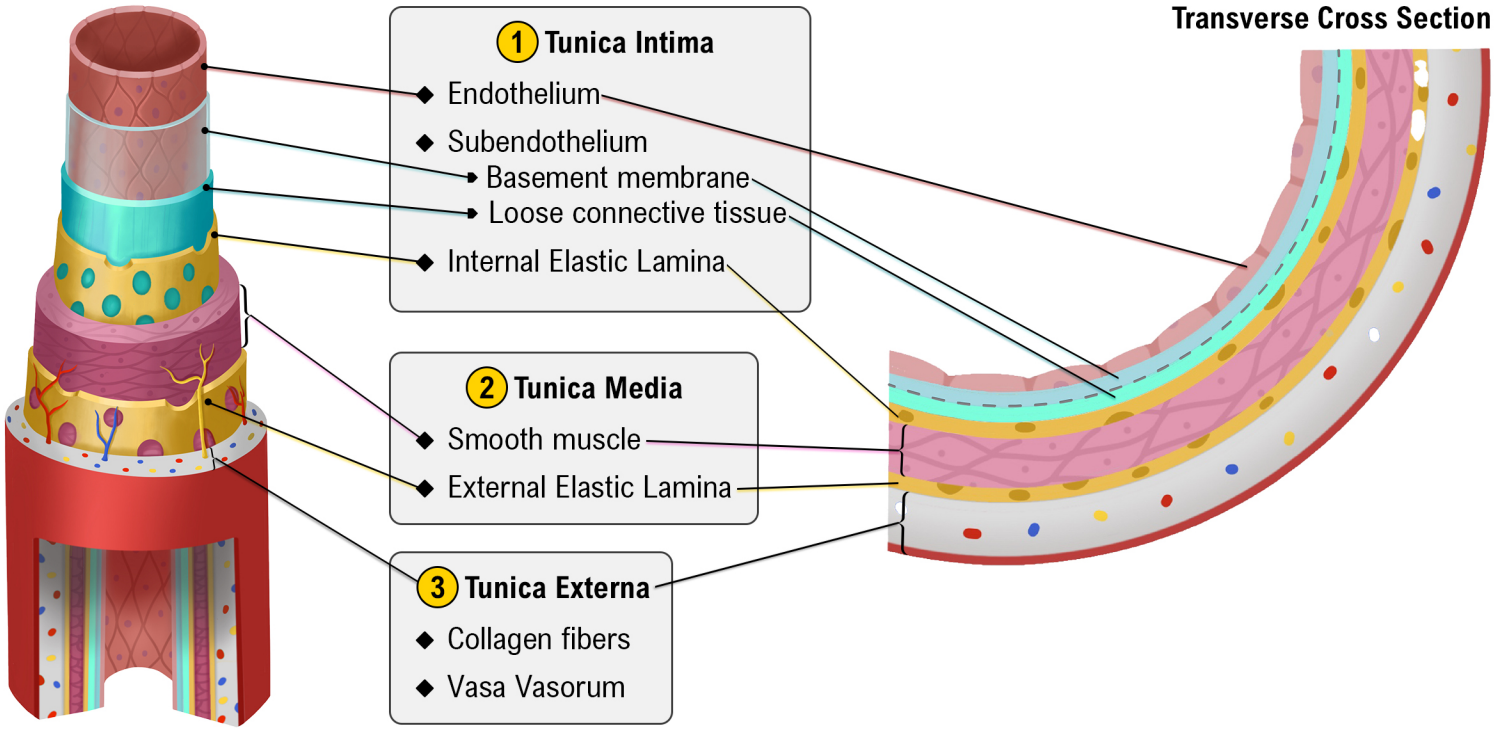
TOPIC: GENERAL BLOOD VESSEL STRUCTURE

General Blood Vessel Structure

◆ Although there are variations, many blood vessels are made of _____ distinct structural layers (tunics):



1 Tunica Intima: ____ternal/innermost layer; contains *endothelium*, *subendothelium*, & *internal elastic lamina*.

- *Endothelium*: simple squamous epithelium lining lumen of _____ blood vessels.
- *Subendothelium*: consists of basement membrane & _____ connective tissue.
- *Internal Elastic Lamina (IEL)*: layer of _____ connective tissue present in larger *arteries*.

2 Tunica Media: ___iddle & often thickest layer; contains mostly s___ooth ___uscle & elastic fibers.

- *External Elastic Lamina (EEL)*: similar to the IEL but is closer to the exterior surface in larger arteries.
- _____ (vasoconstriction) & _____ (vasodilation) to regulate blood flow/pressure.

3 Tunica Externa: ____ternal/outermost layer; composed mostly of collagen fibers.

- *Vasa Vasorum*: system of _____ blood vessels that nourish external tissues of blood vessel wall.
- Protects/reinforces blood vessel & anchors it to surrounding tissues.

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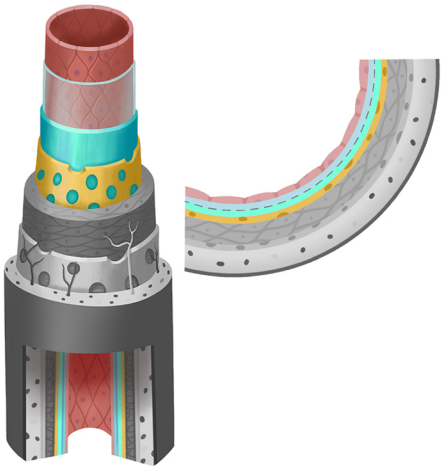
EXAMPLE

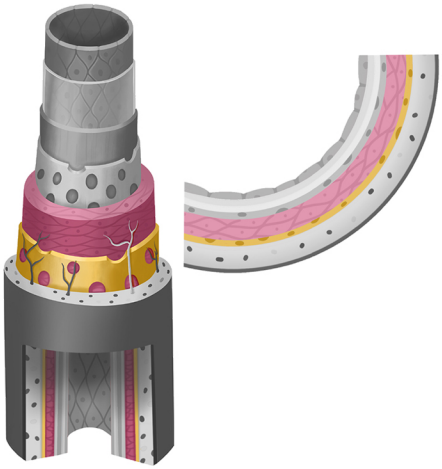
Appropriately label each image with the tunic that it is highlighting & list the components of each tunic.

Tunica _____



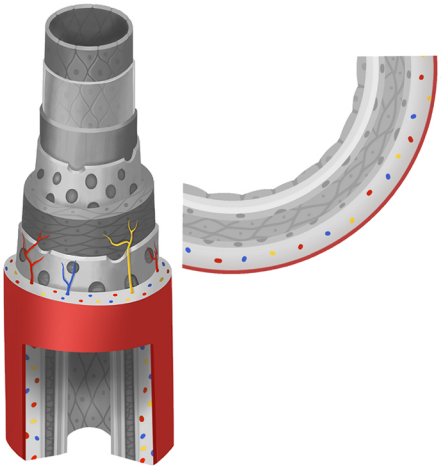
- _____
- _____
- _____

Tunica _____



- _____
- _____

Tunica _____



- _____
- _____

PRACTICE

Which of the following statements is true?

a) The tunica media in veins is thicker than tunica media in arteries.

b) The tunica intima contains the endothelium, which lines the lumen of all blood vessels.

c) The walls of all blood vessels always have 3 distinct layers/tunics.

d) The tunica externa is mostly composed of smooth muscle that can contract, causing vasoconstriction.

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PRACTICE

Which blood vessel layer contains the greatest *proportion* of collagen?

a) Tunica intima.

b) Tunica media.

c) Tunica externa.

d) The elastic laminae.

PRACTICE

Which blood vessel tunic has the most active role in controlling blood flow?

a) Tunica intima, as it is makes direct contact with the blood.

b) Tunica media, as it contains smooth muscle which causes the vessel's diameter to change.

c) Tunica externa, as it dampens the large pressure changes caused by the beating of the heart.

d) None of the layers play an active role in controlling blood flow.