

THE CARDIOVASCULAR SYSTEM

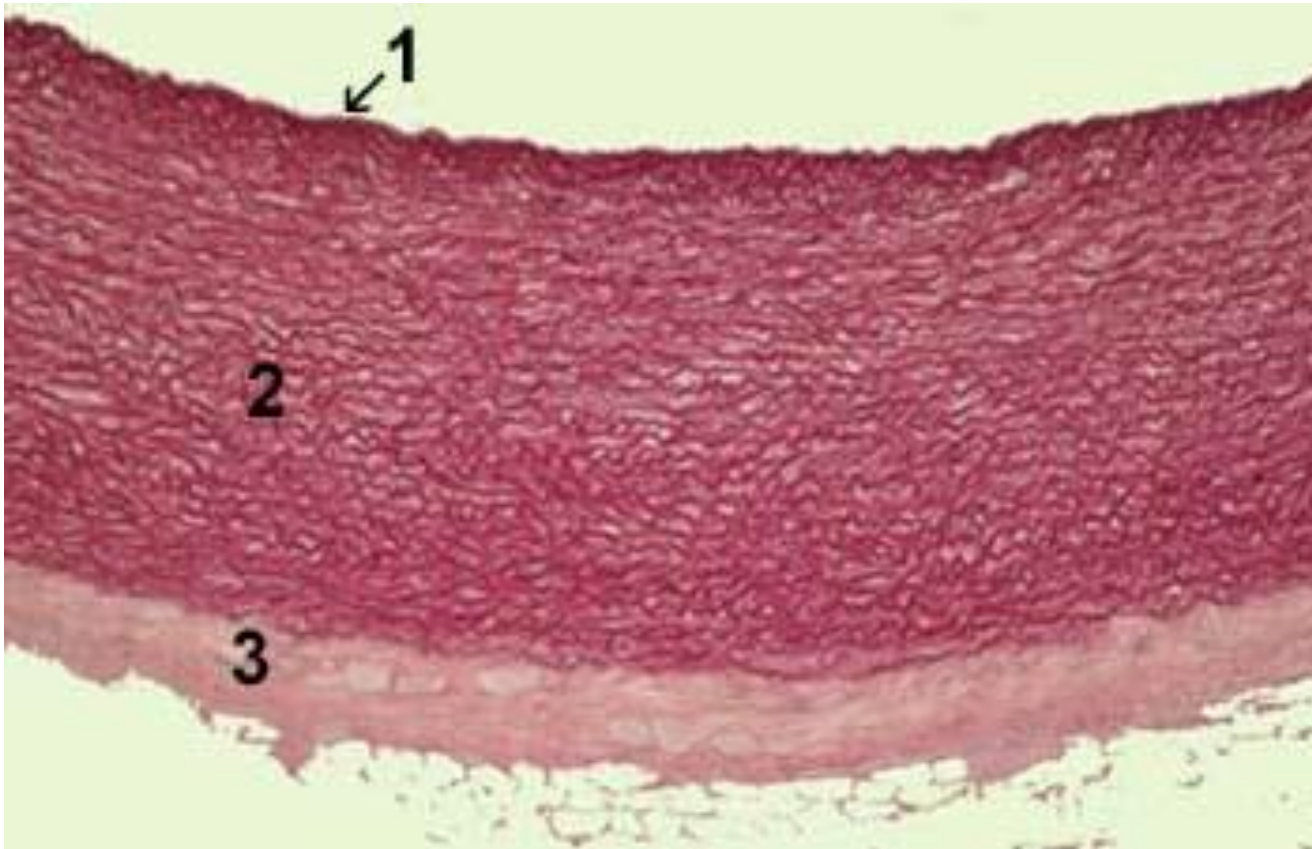
HEART - ARTERIES - ARTERIOLES - CAPILLARIES

- SINUSOIDS - VENULES - VEINS - HEART

ARTERIES

- **All arteries have some features common like then wall of arteries are made up of three layers**
 - 1) **TUNICA INTIMA - Endothelial lining,
Basal lamina,
Subendothelial connective tissue
Internal elastic lamina**
 - 2) **TUNICA MEDIA – Elastic tissue or Muscular tissue (smooth muscle)
External elastic lamina**
 - 3) **TUNICA ADVENTITIA – Connective tissue collagen fibers predominate**
- **ELASTIC ARTERIES**
- **MUSCULAR ARTERIES**
- **ARTERIOLES**

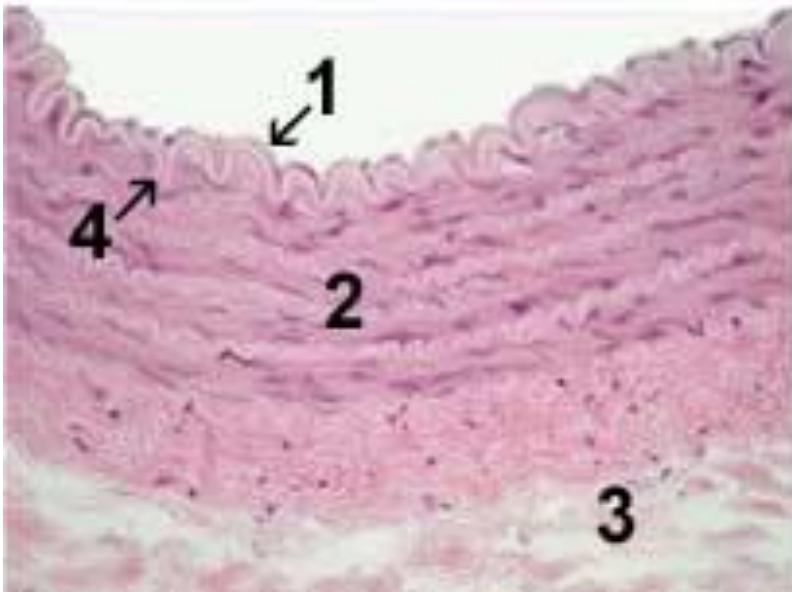
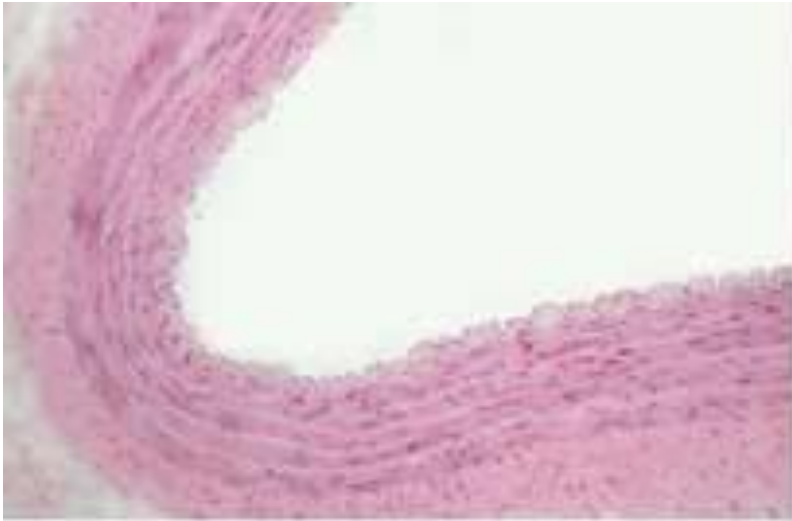
ARTERY

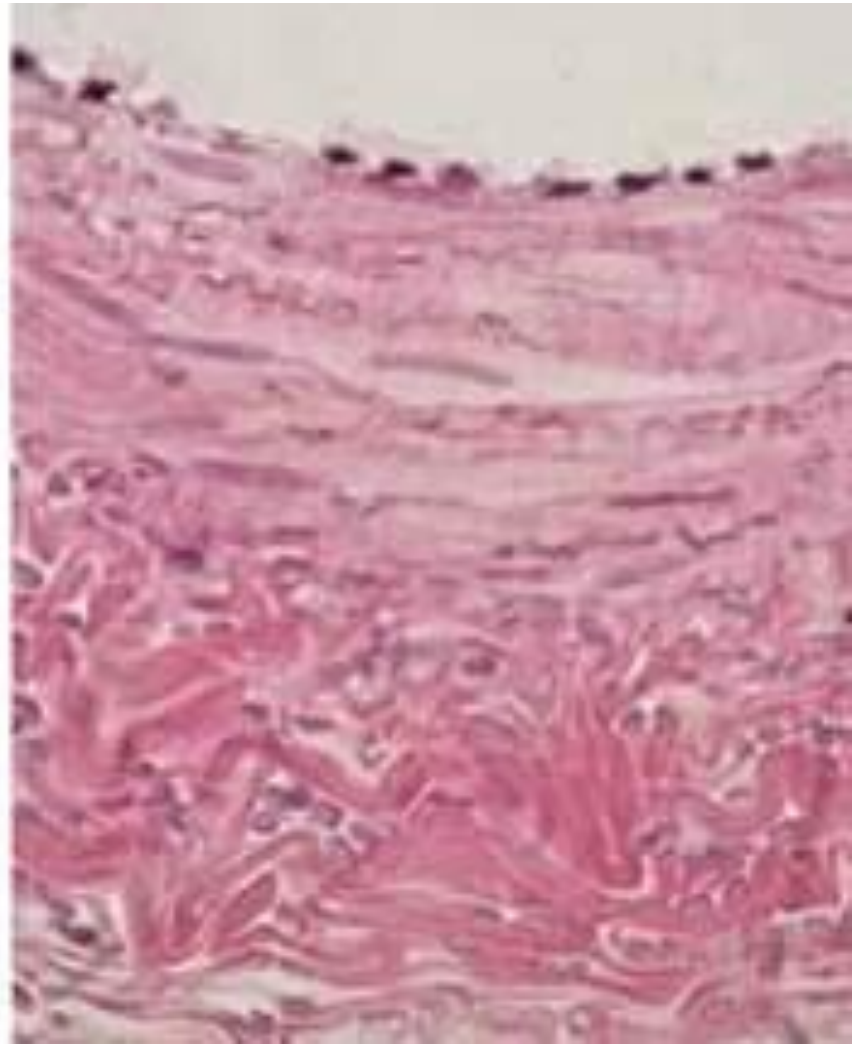
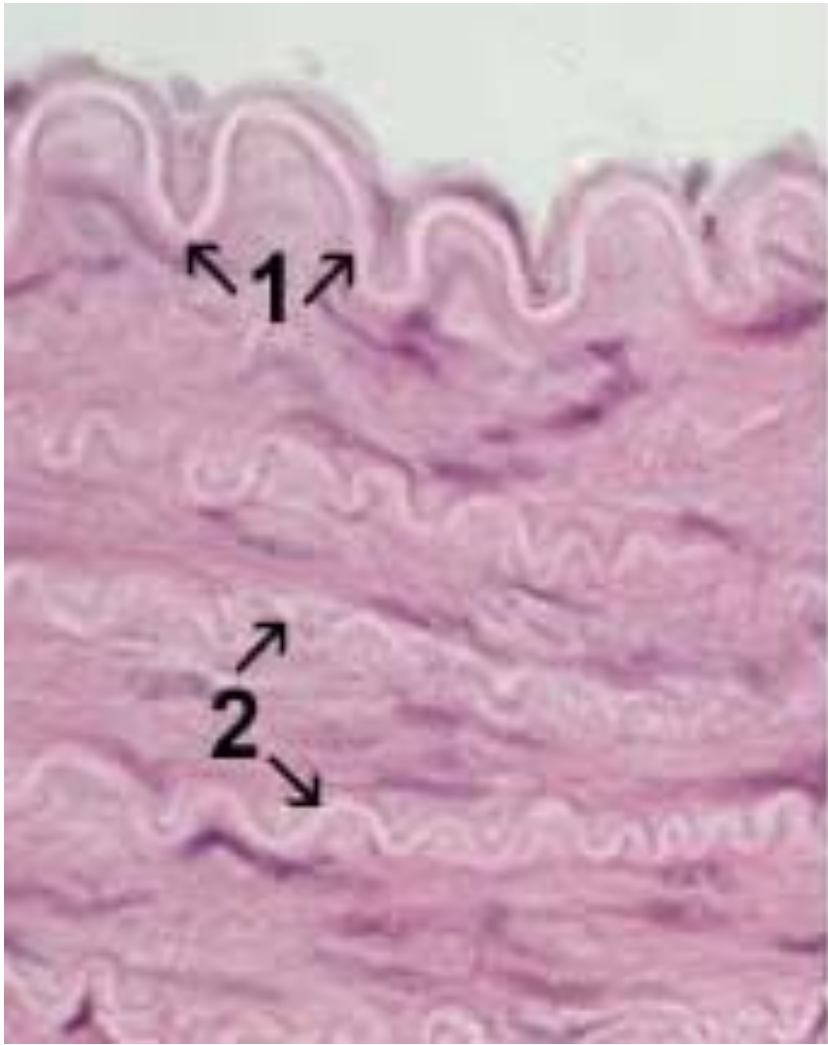


- **ELASTIC ARTERIES** : Large arteries supplying head & neck, limbs
Aorta
- **Tunica intima** : Forms 1/6 of vessel wall. In Subendothelial connective tissue there is fine elastic fibers with collagen fibers in amorphous inter cellular substance. Deeper down the elastic fibers are coarse in variety. Elastic fibers are condensed into a fenestrated membrane known as internal elastic membrane. It's not distinct from media in elastic artery.
- **Tunica media** : In that elastic tissue is in form of a series of concentric membranes (laminae) that are frequently fenestrated. Number of laminae varies with age. Between elastic membranes there is some loose connective tissue. Some smooth muscle cells may be present.
- **Tunica adventitia** is thin .In which greater proportion of elastic fibers are present, which merge with external elastic lamina. Small blood vessels known as vasa vasorum are present in this layer. Nerve fibers are also present in this layer.

MUSCLAR ARTERIES : Most arteries are of this type.

- Tunica intima : Relatively thin . Most prominent part is the thick internal elastic lamina.
 - Tunica media : Thick coat. Circularly disposed smooth muscles, held together by reticular collagen & elastic fibers.
 - Tunica adventitia: Thick coat.
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- **ARTERIOLES** : less than 100 micro in diameter. Thick wall and small lumen





VEINS

- The walls of veins are thinner than that of artery of same size.
- Tunica media contains a much larger quantity of collagen fibers than in arteries. Elastic tissue or muscle is much less.
- Tunica adventitia of vein is thicker than the media. (contrast to artery)

Aknowledgement

- Inderbir Singh's Textbook of Human Histology
- Textbook of Histology- Atlas and Practical Guide by JP Gunasegaran
- Difiore's Atlas of Histology
- Images from Google
- Histology Text & Atlas -Brijeshkumar