

Wall of the heart

1. Endocardium

1. Endothelium

Simple squamous epithelium

2. Sub-endothelial C.T.

3. Dense C.T. Layer

4. Sub-endocardial layer

A. Loose C.T. layer that contains:
 - Purkinje fibers
 - Small blood vessels
 - Nerves
 B. It attaches to the endomysium of the cardiac muscle

2. Myocardium

- 1- The middle layer
- 2- The thickest layer
- 3- Contains cardiac muscle cells with endomysium (loose C.T)

Cardiac Muscle Fibers

(Striated and involuntary)

- L.M. Picture**
- 1- Cylindrical
 - 2- Intermediate in diameter
 - 3- Branched and anastomose
 - 4- Covered by a thin sarcolemma
 - 5- Mononucleated (oval and central)
 - 6- Sarcoplasm is acidophilic and shows non clear striations
 - 7- Divided into short segments by intercalated discs

- E.M. Picture**
- 1- Few myofibrils
 - 2- Numerous mitochondria
 - 3- Less abundant Sarcoplasmic Reticulum
 - 4- T-tubules come in contact with only one cisterna of SR forming (diads)
 - 5- Glycogen & myoglobin
 - 6- Intercalated discs

3. Epicardium

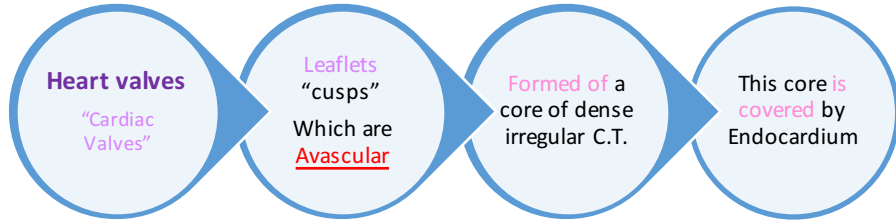
(Visceral layer of pericardium)

Mesothelium

Simple squamous epithelium

Subepicardial C.T. Layer

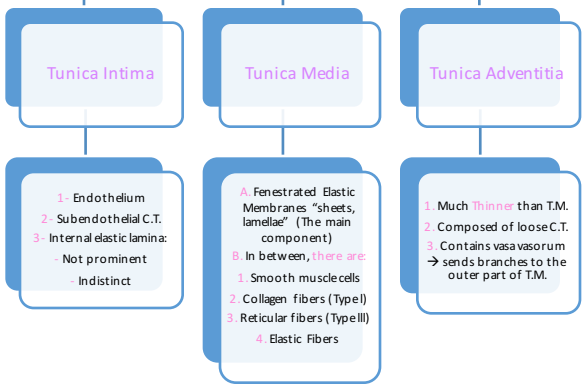
Loose C.T. contains:
 - The coronary vessels
 - Nerves
 - Ganglia
 - Fat cells



The Blood Vessels

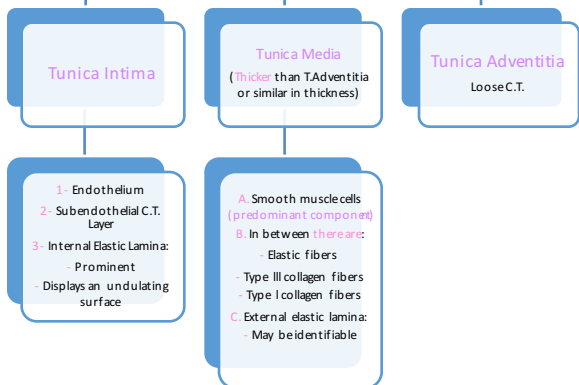
1- Elastic Arteries

Example:
- Aorta
- Common Carotid
- Subclavian



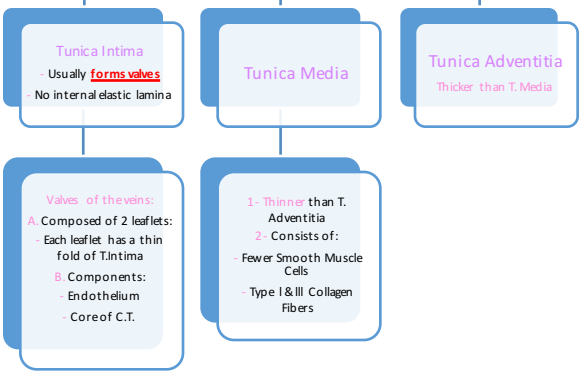
2- Muscular (medium-sized) Arteries

Example:
- Brachial
- Ulnar
- Renal



3- Medium-sized Veins

Thickness of the wall:
thinner than the accompanying artery



4- Blood Capillaries

Diameter: usually 8-10 mm

1. Single layer of squamous endothelial cells
2. Basal Lamina
3. Pericytes

