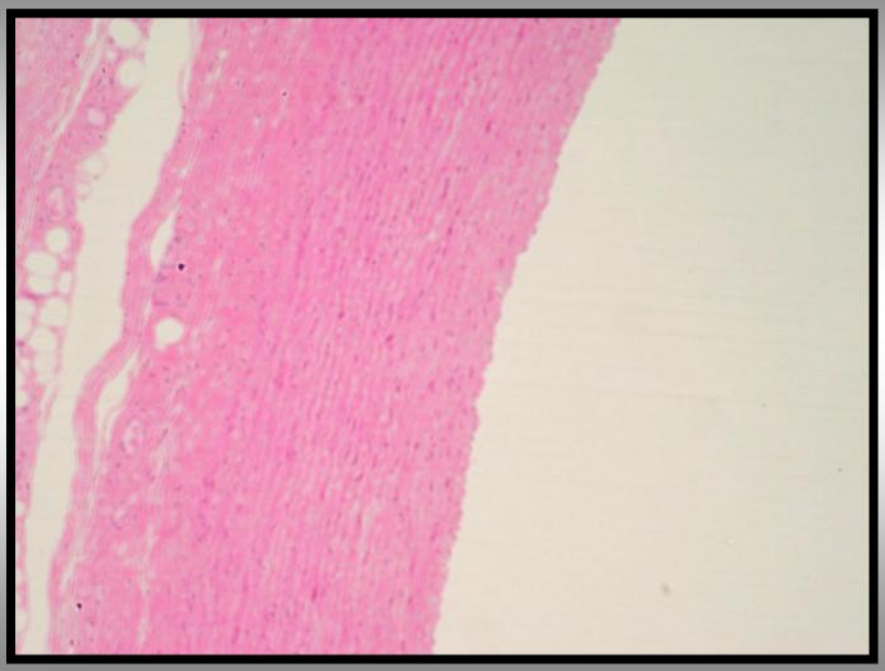
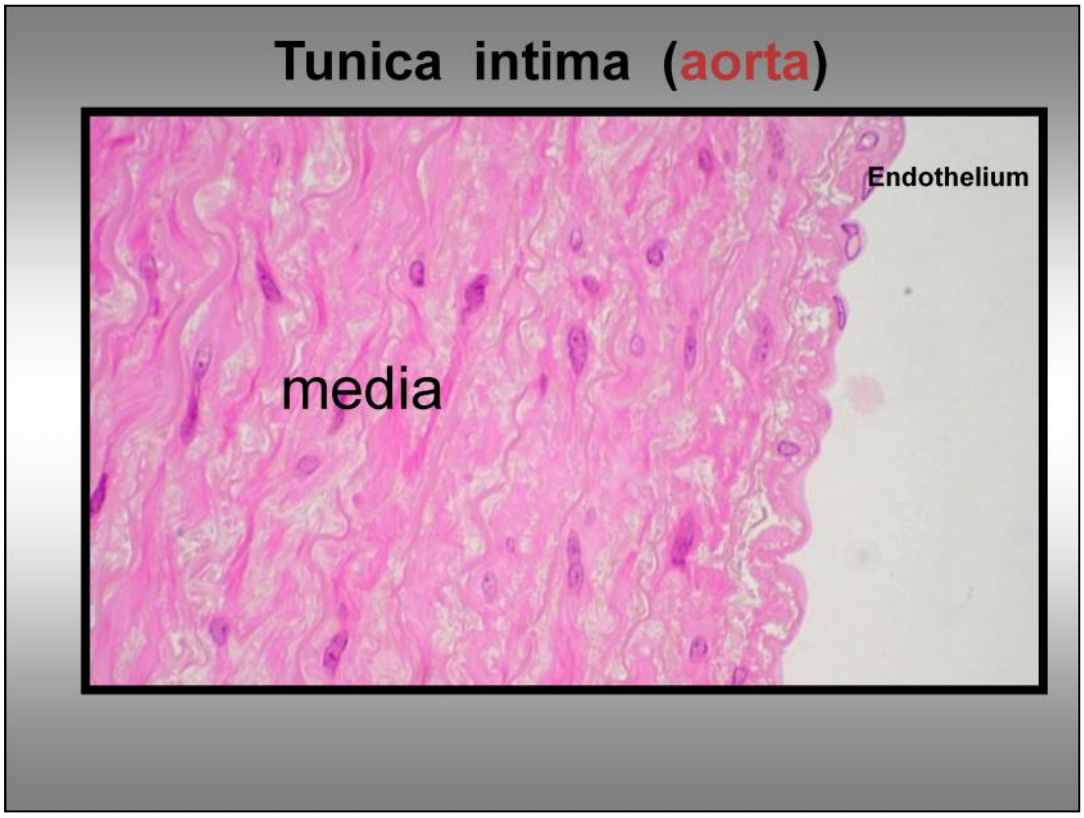
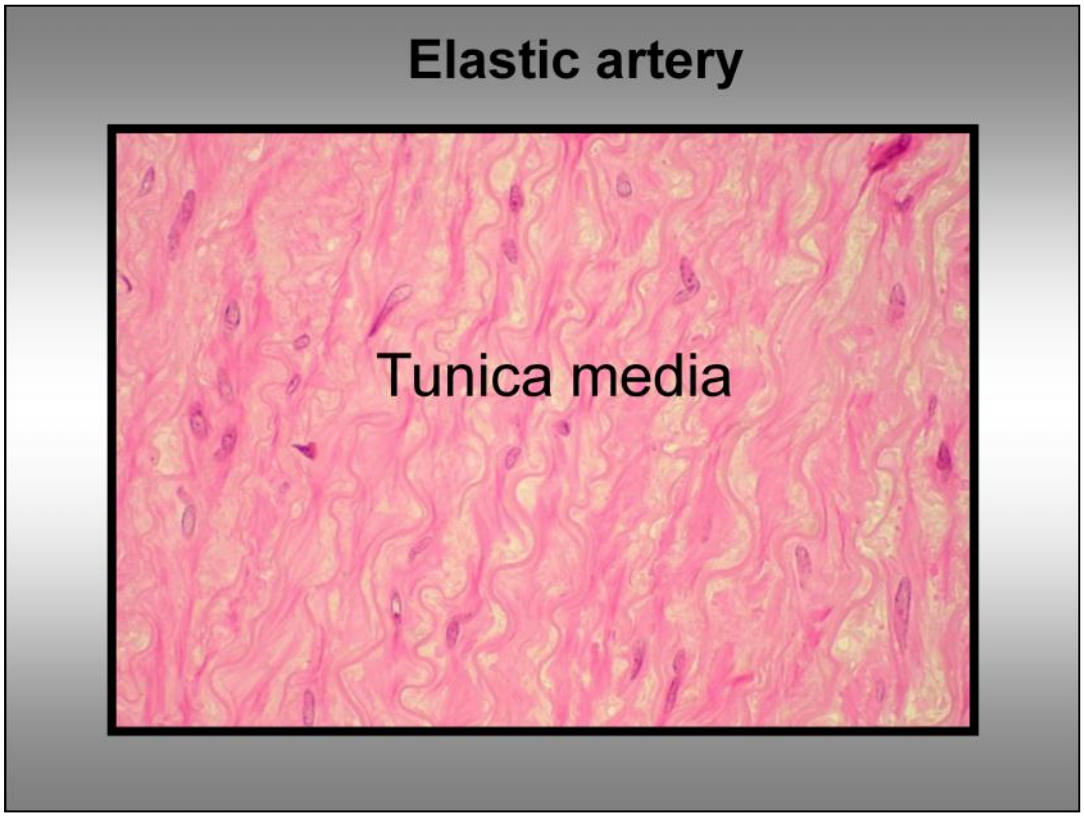
Cardiovascular system

Elastic Artery (aorta) (H&E stain)





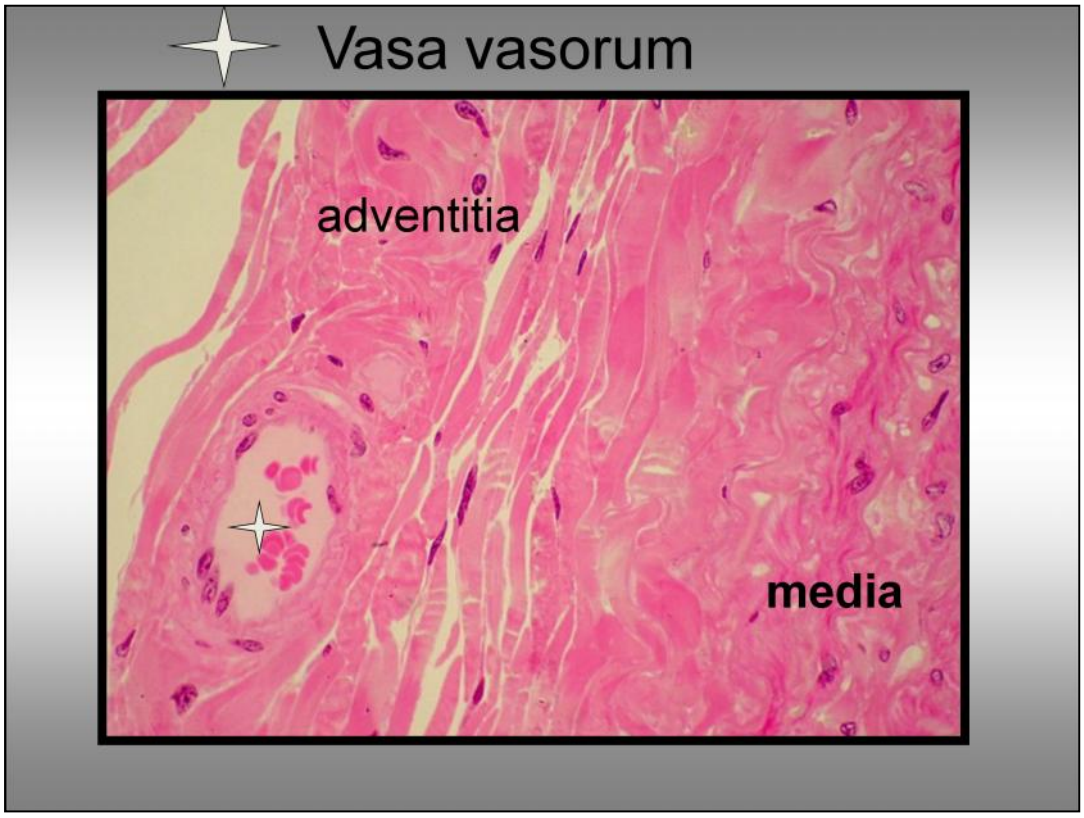
The intima of elastic artery is **thicker** than the muscular artery



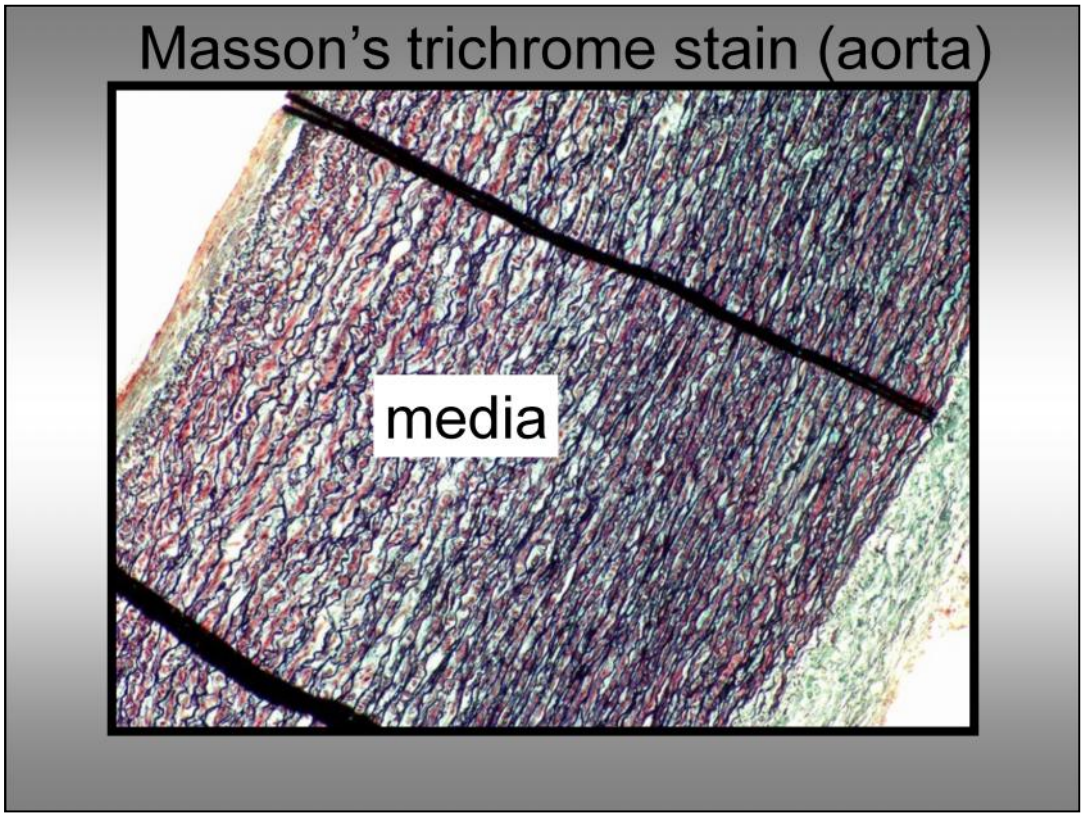
Media: - the irregular line is elastic tissue

The nucleus for smooth muscle (not fibroblast or fibrocyte) with ill-defined cytoplasm

the smooth muscle is important to produce collagen and elastic, not to make contraction!!!



The vasa vasorum is more in elastic artery than muscular artery and more in the large vein because most of the blood inside it is poorly oxygenated

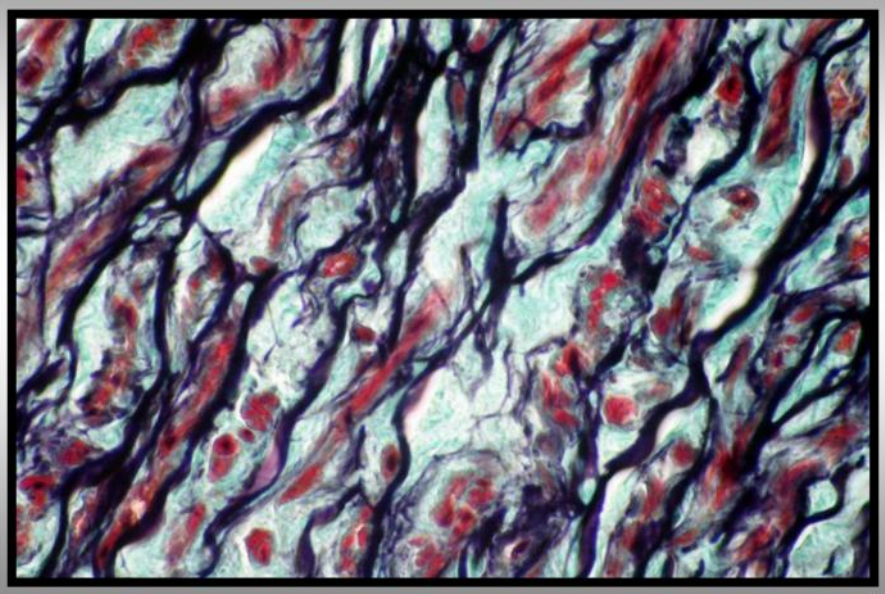


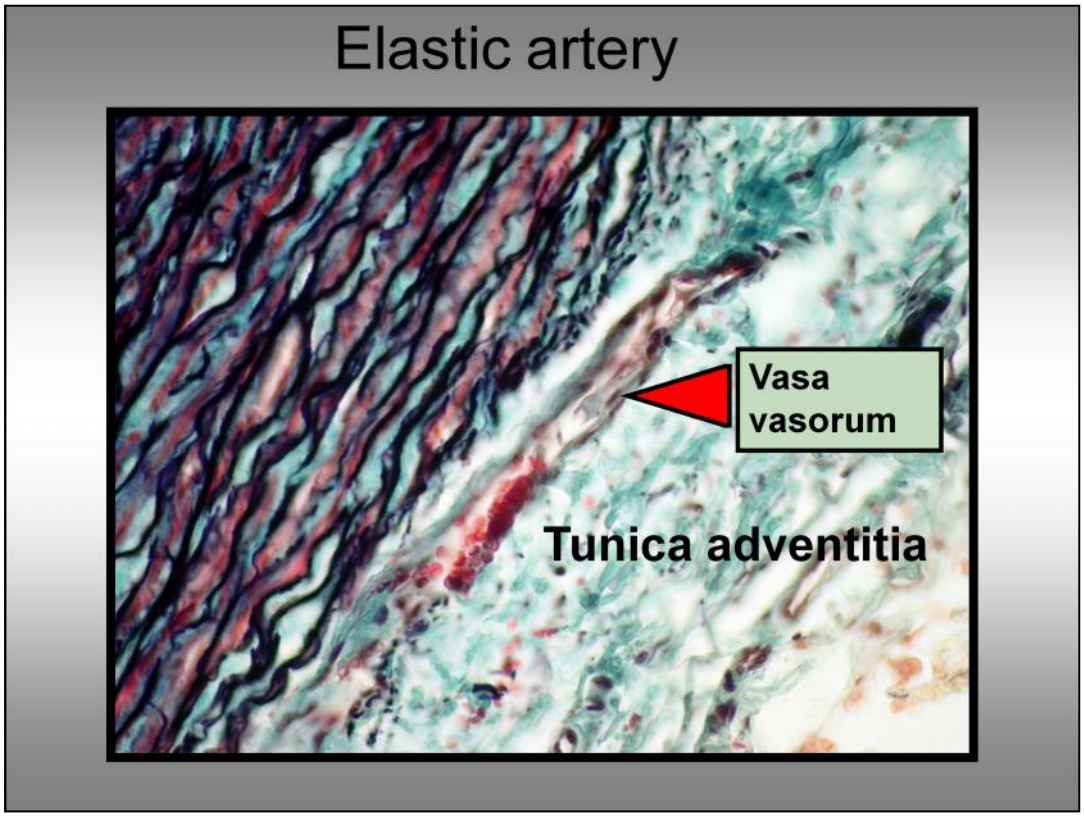
What is the most predominant tissue here? and why?

Elastic tissue, to convert the intermittent blood flow to continues by expansion and recoiling.

Collagen and smooth muscle for strength

Black=elastic lamina, Red=smooth muscle
Green=collagen

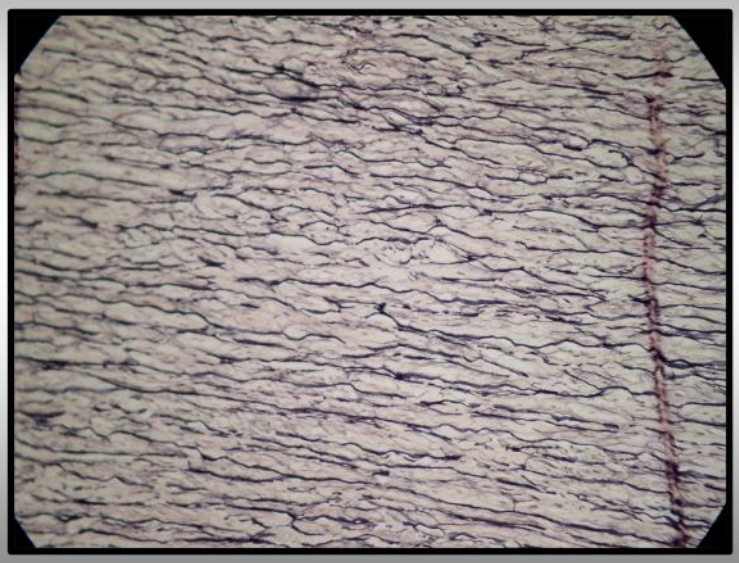




The adventitia contains mostly collagen and little elastic

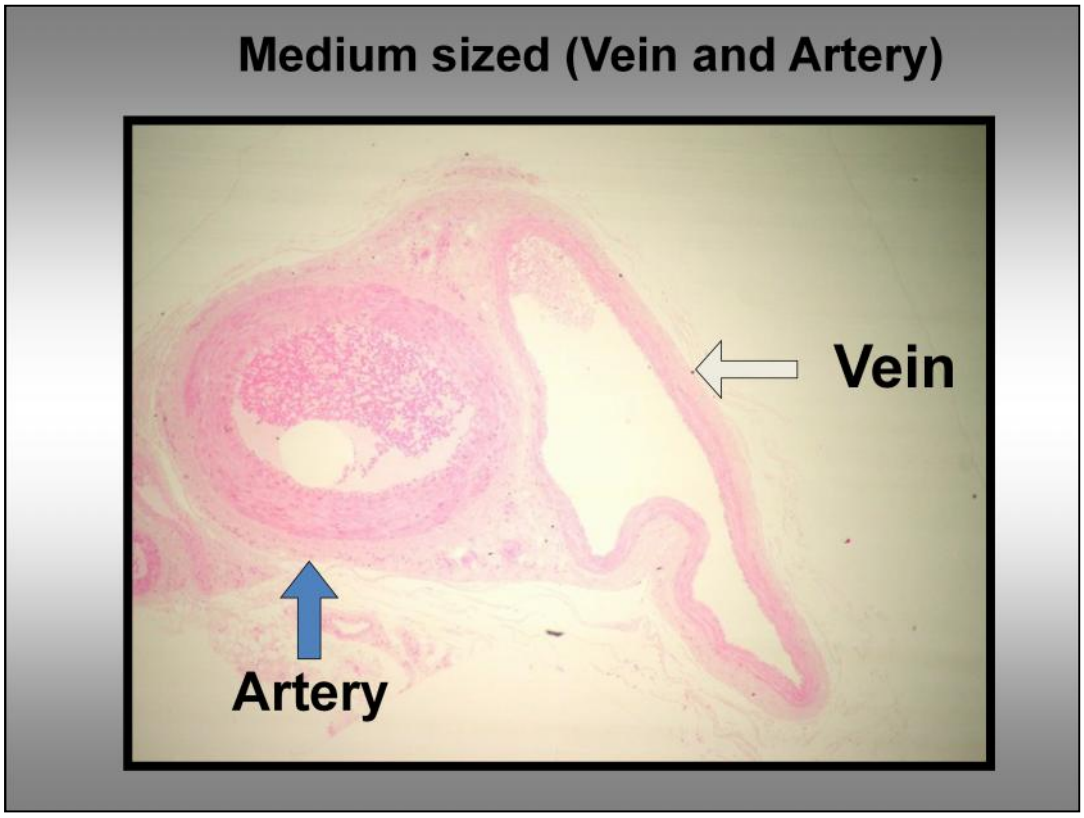
Elastic artery (van Gieson stain)

TUNICA MEDIA



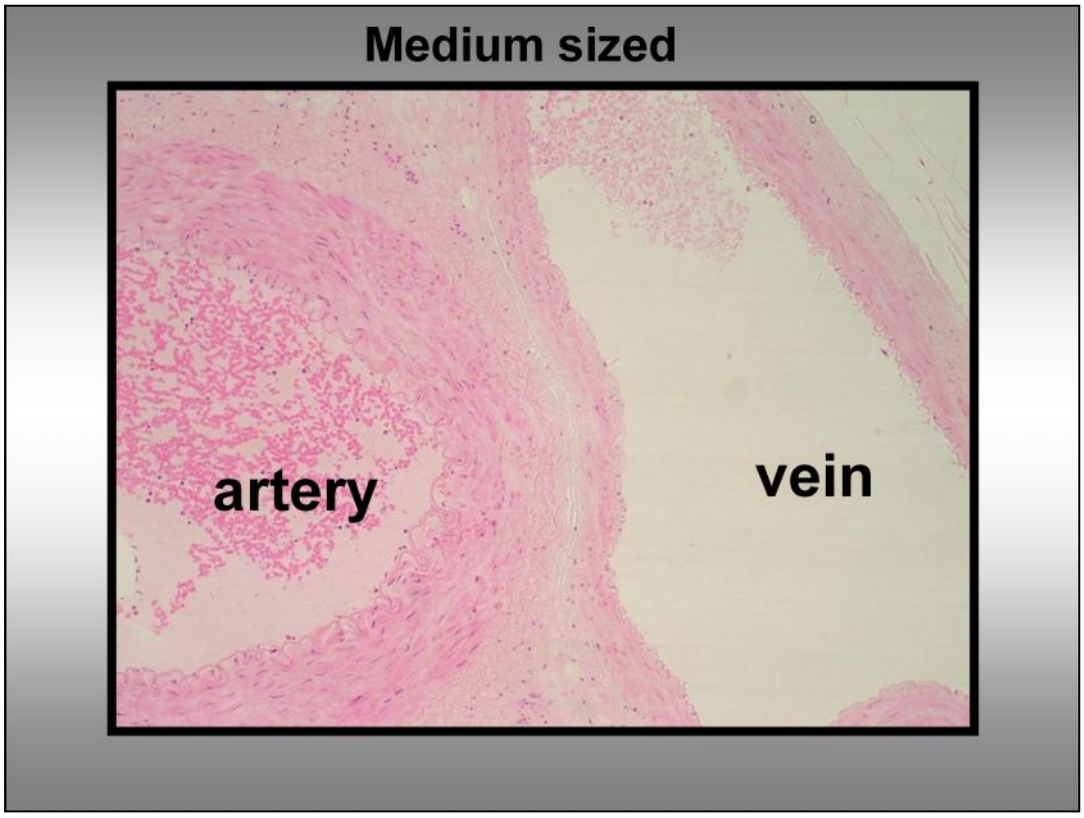
Tunica Media

Elastic lamina=black Connective tissue=pink



In the artery the media is thicker than the adventitia while it is the opposite in vein

The vein wall contains mainly collagen

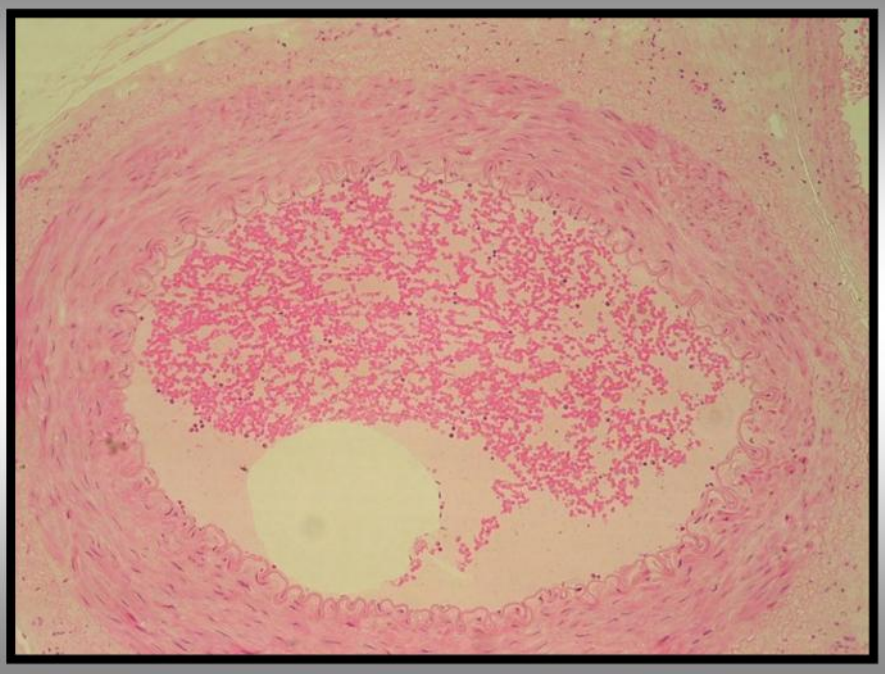


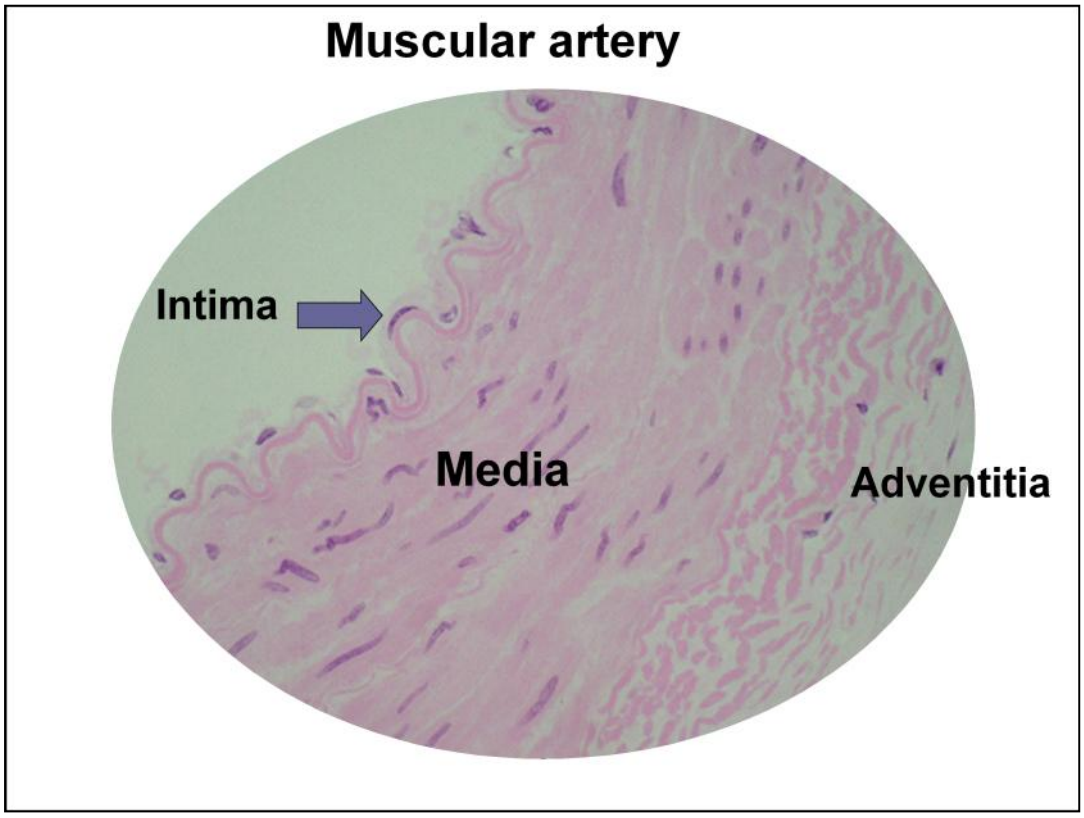
Characteristic of veins

1) low resistance collecting system

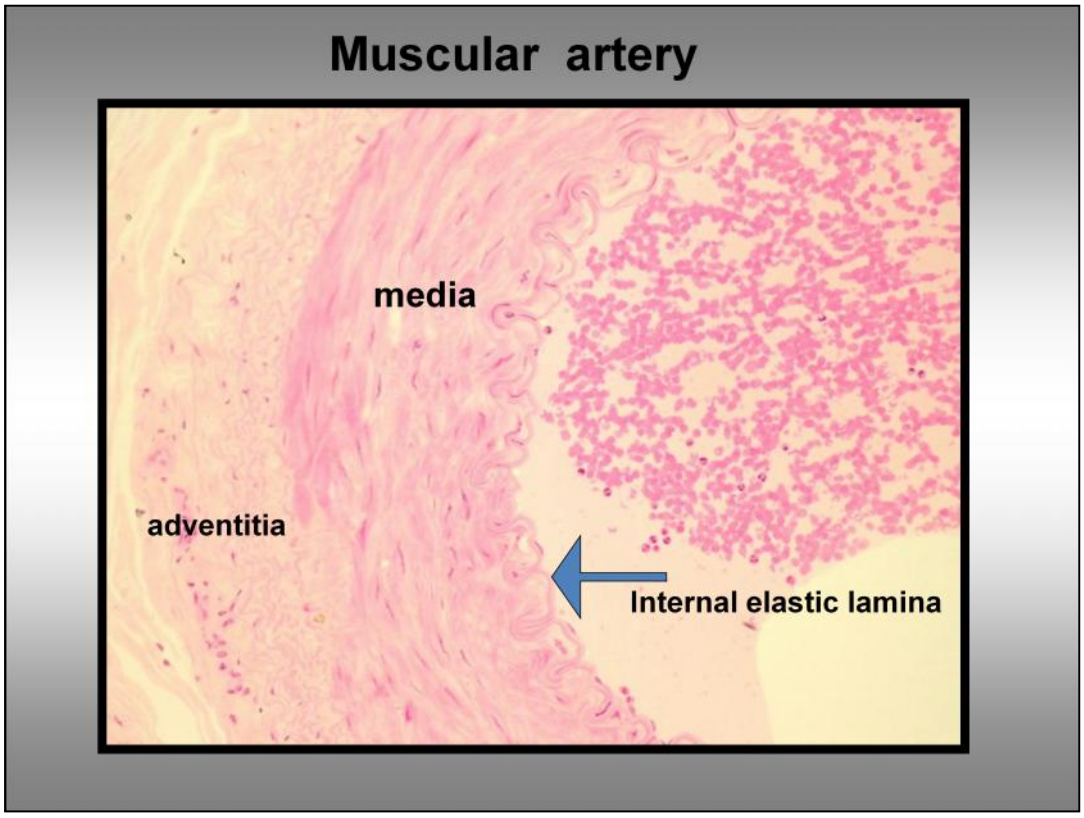
2) Low pressure storage system

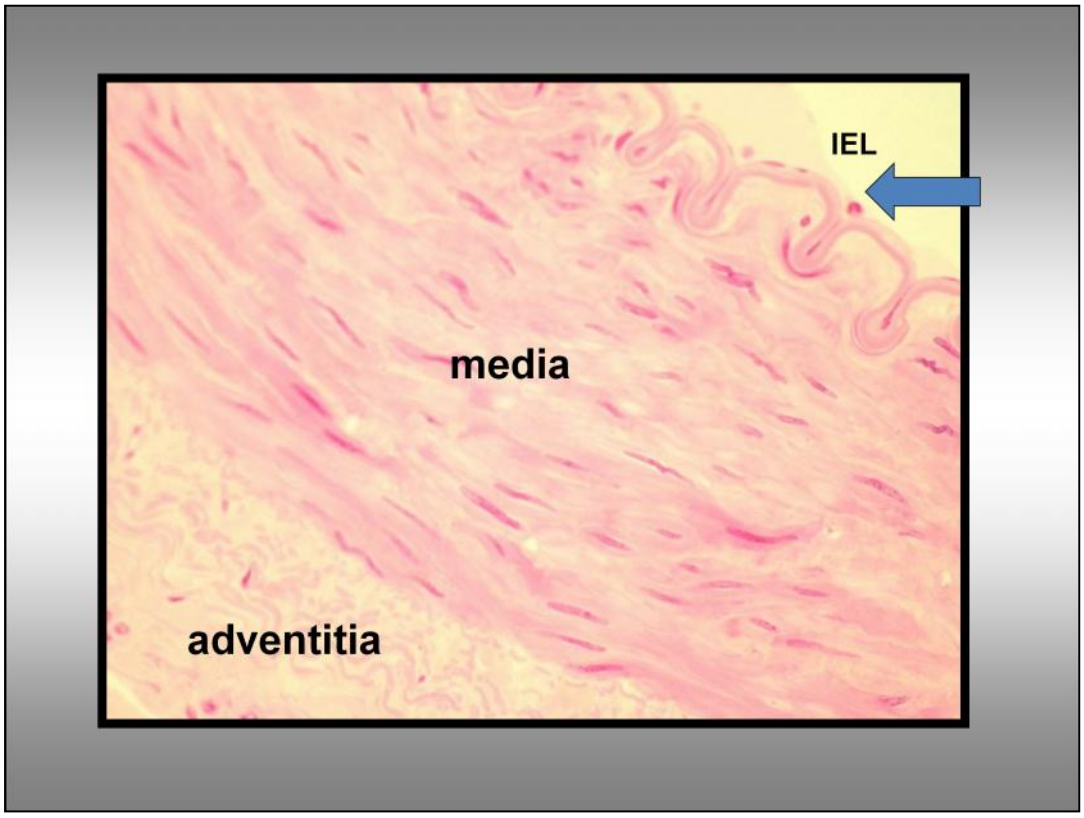
Muscular artery (medium sized)



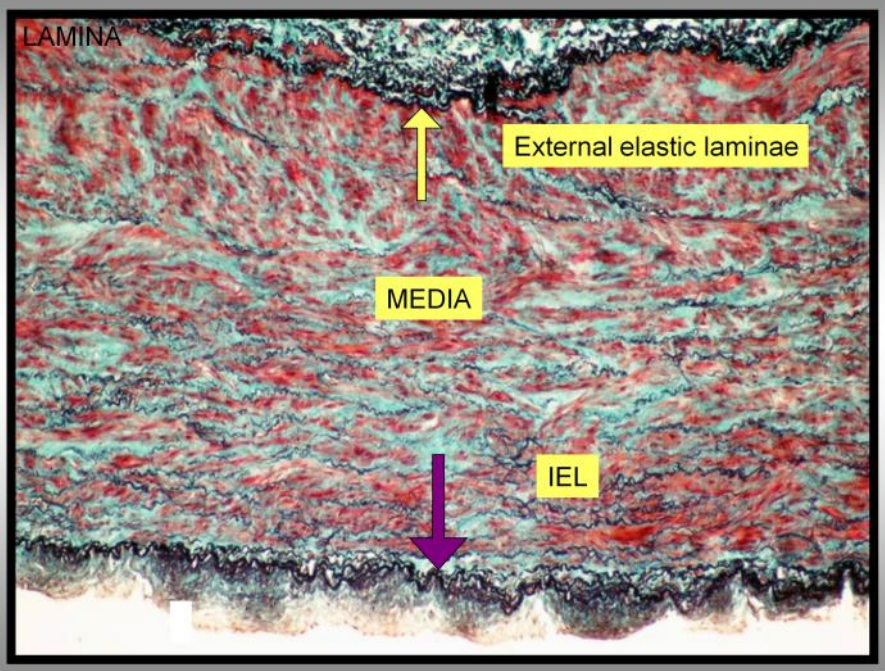


Well defined internal & external elastic laminae

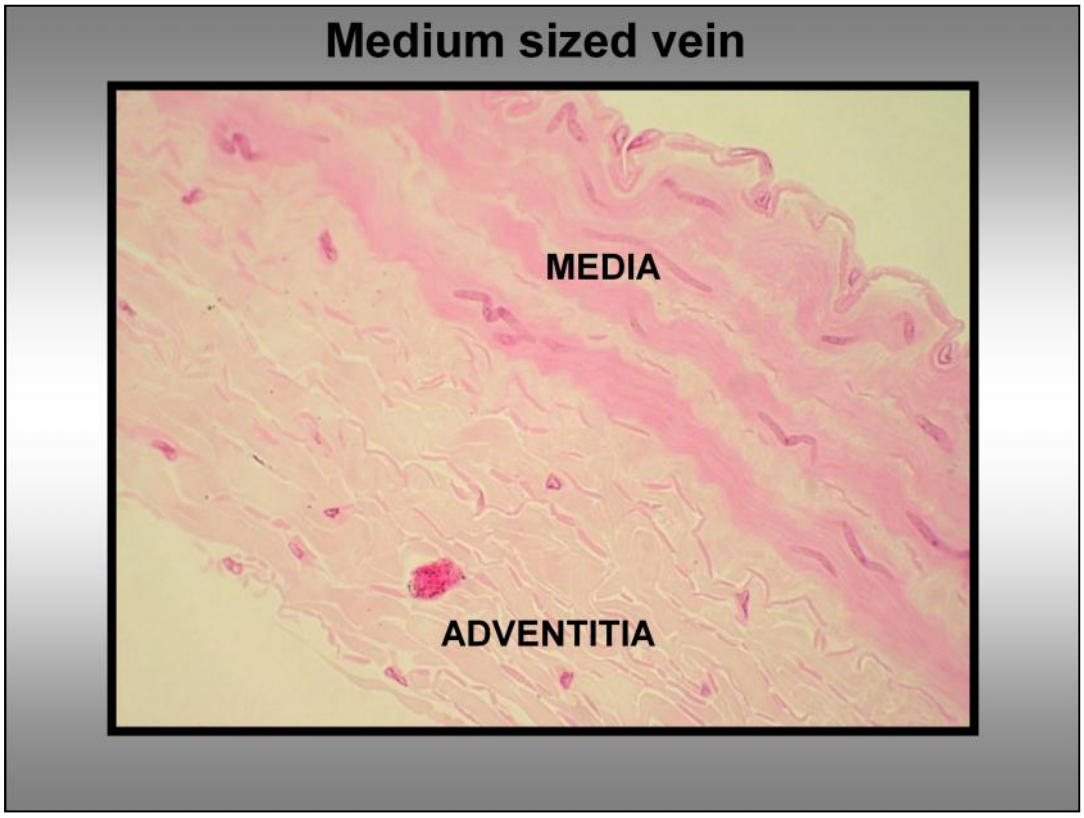

Muscular artery
media
adventitia
Internal elastic lamina


IEL
media
adventitia

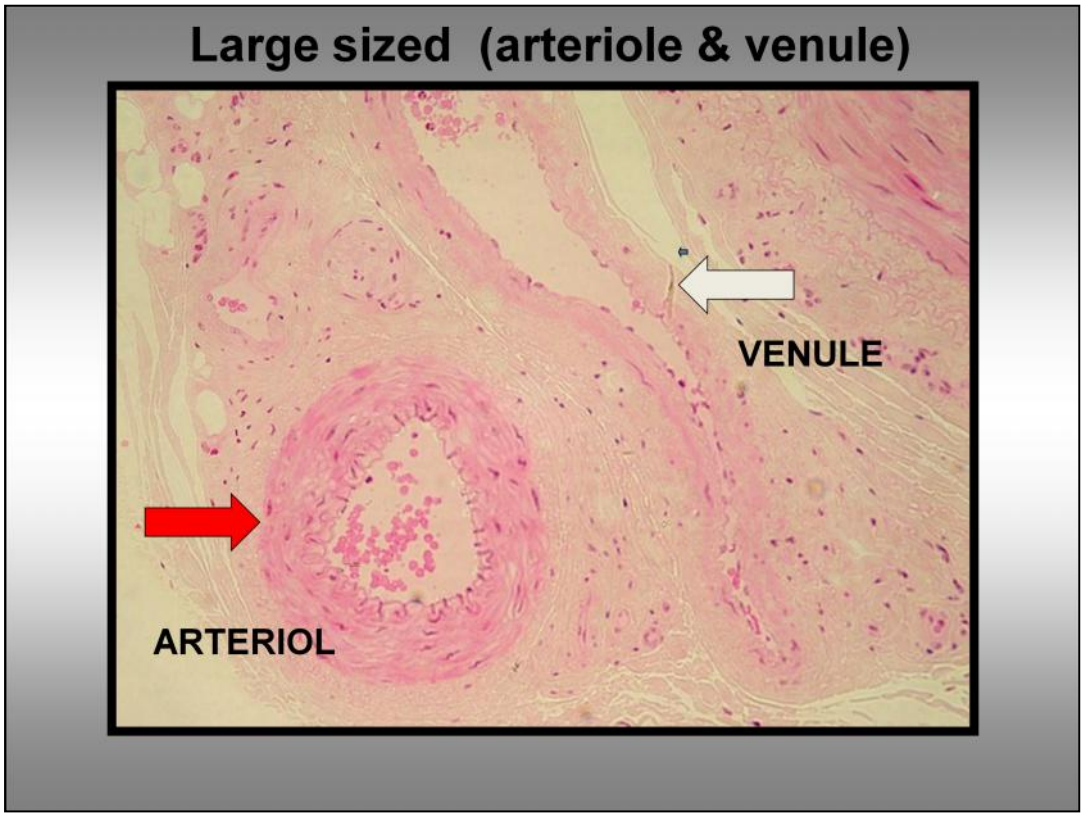
Muscular artery



Medium sized



Medium sized vein = capacitant vein



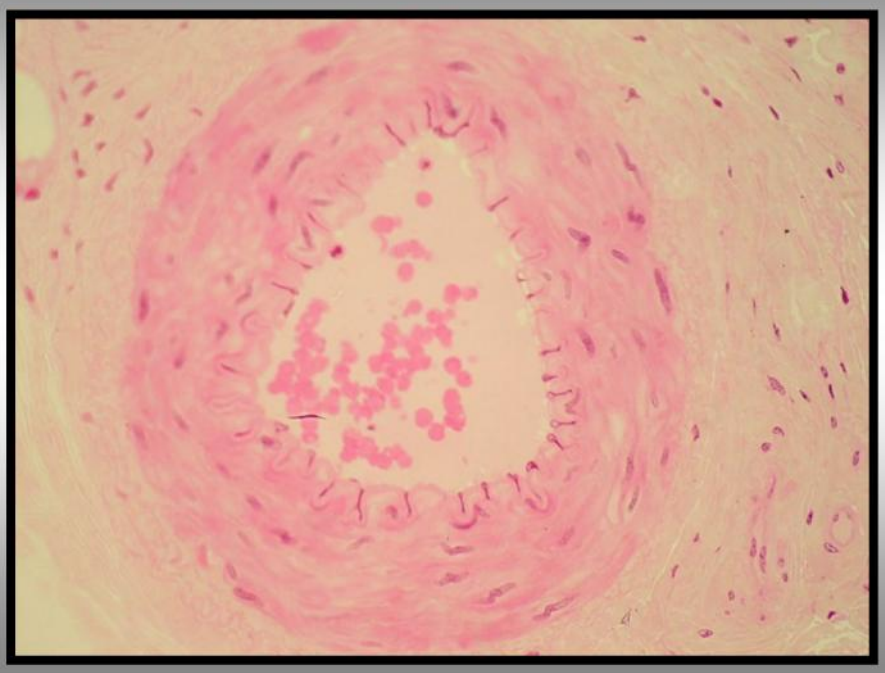
What is the main function of venules? Diapedese

Arteriole gives met-arteriole which gives capillary then gives venule

Between the meta-arteriole and the capillary there is precapillary sphincter

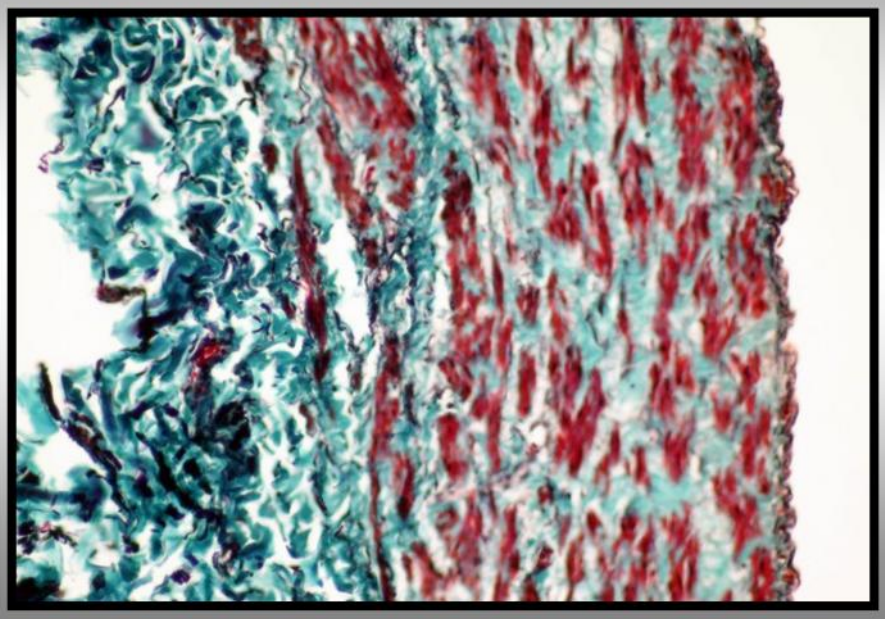
The sphincter and the met-arteriole poorly innervated by sympathetic but expand and narrow by local metabolite.

Large Arteriole

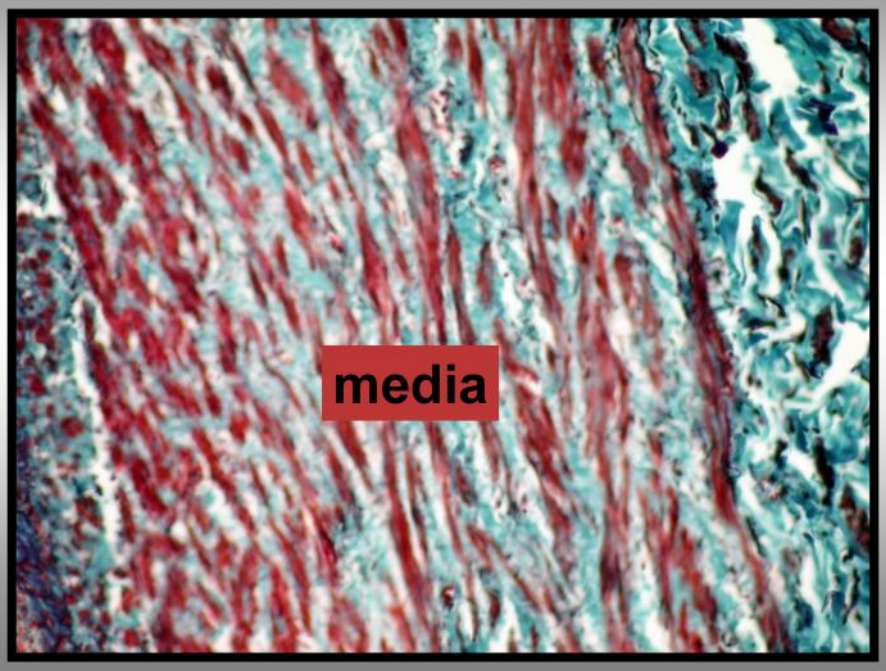


Superficial Vein (Saphenous)

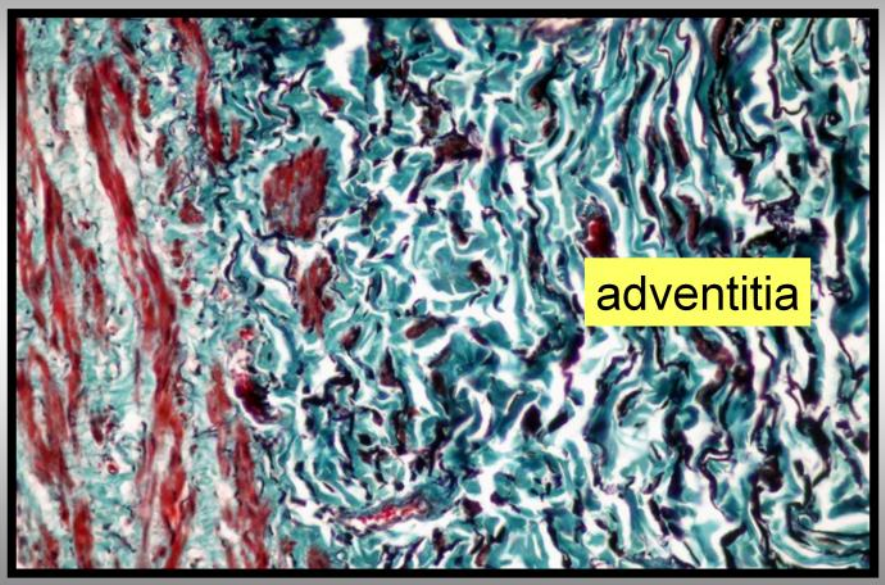
(Masson's trichrome stain)



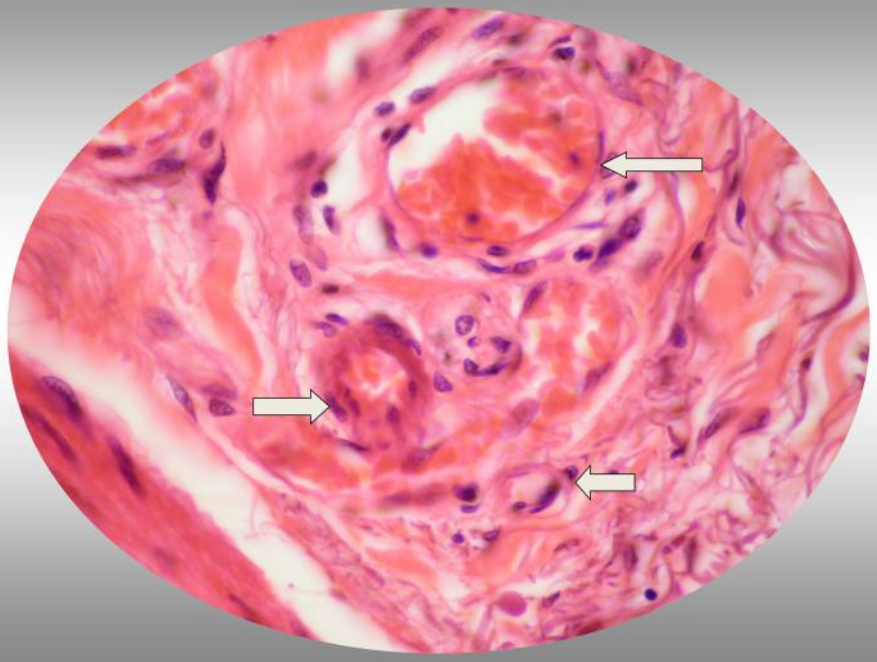
Superficial Vein (Saphenous)

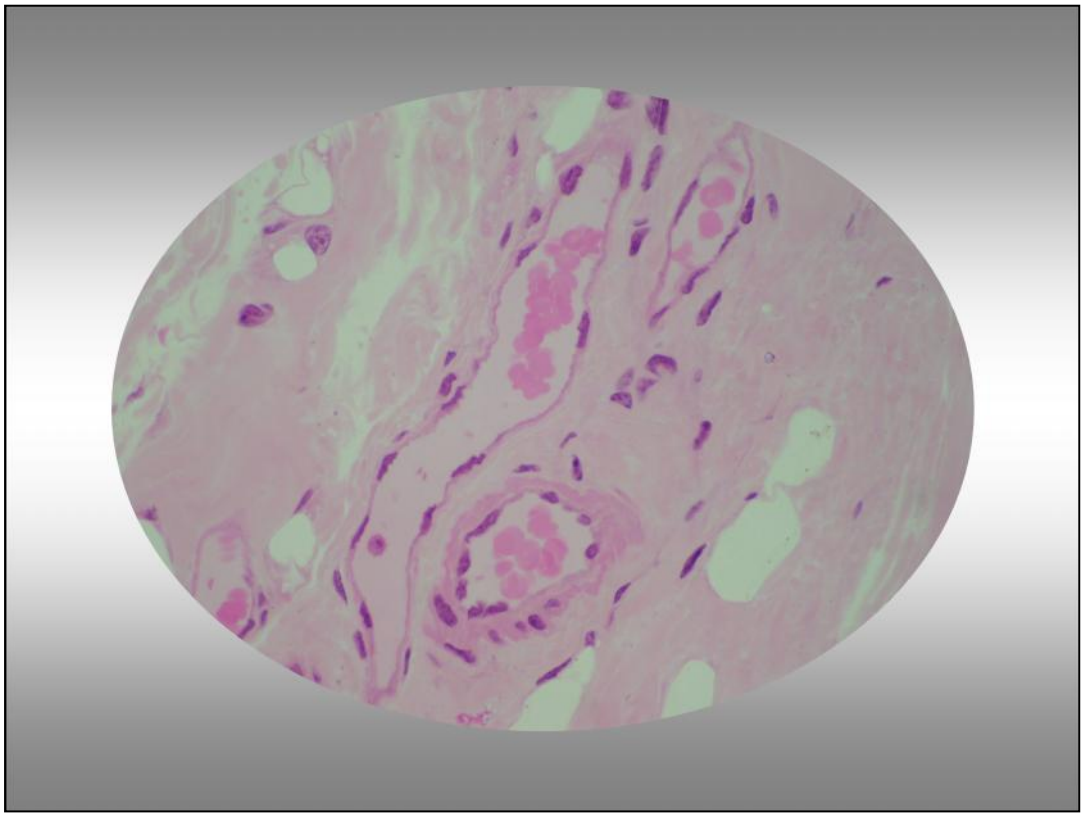


Superficial Vein (Saphenous)

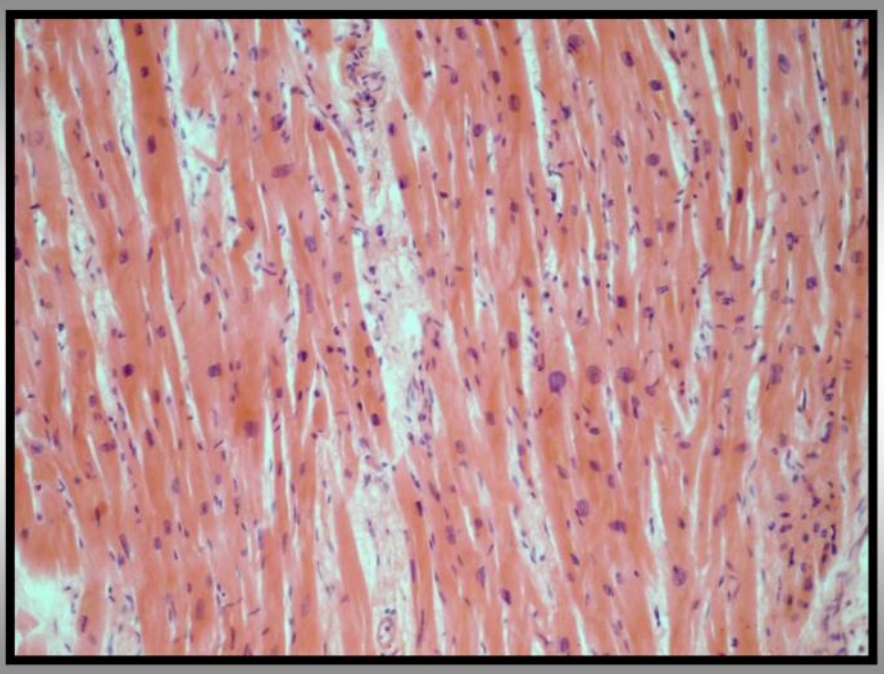


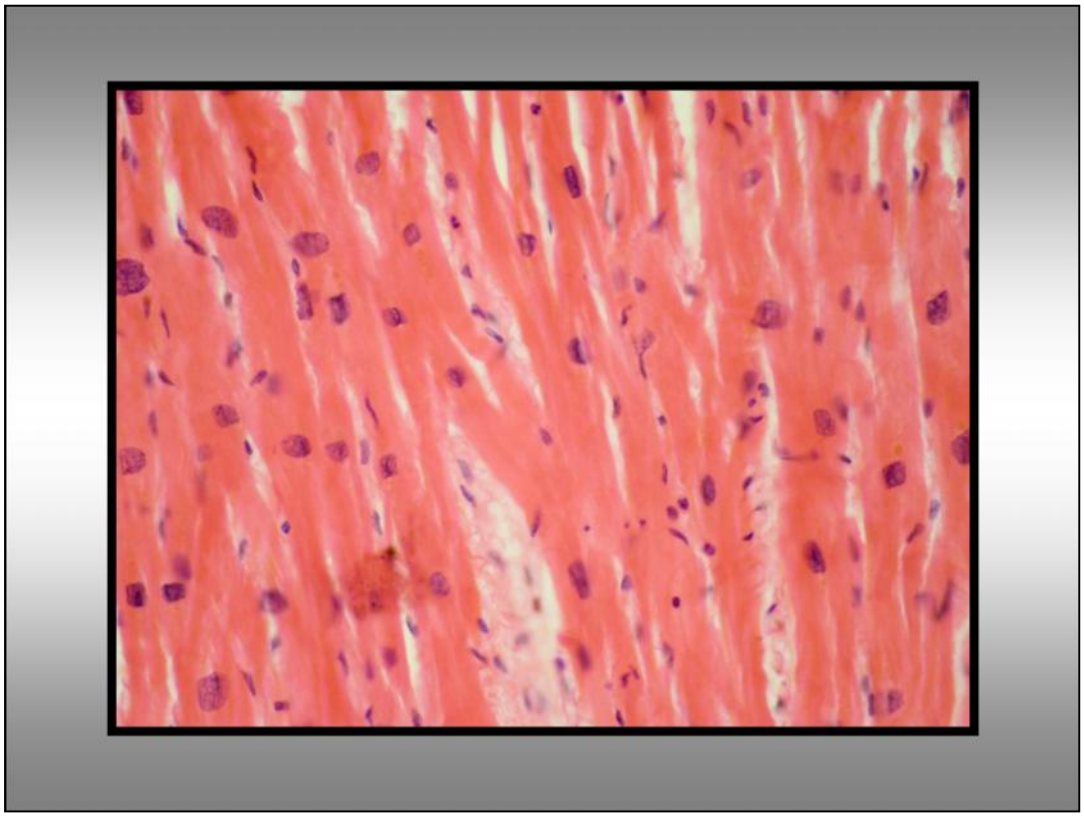
Microvasculature Vessels

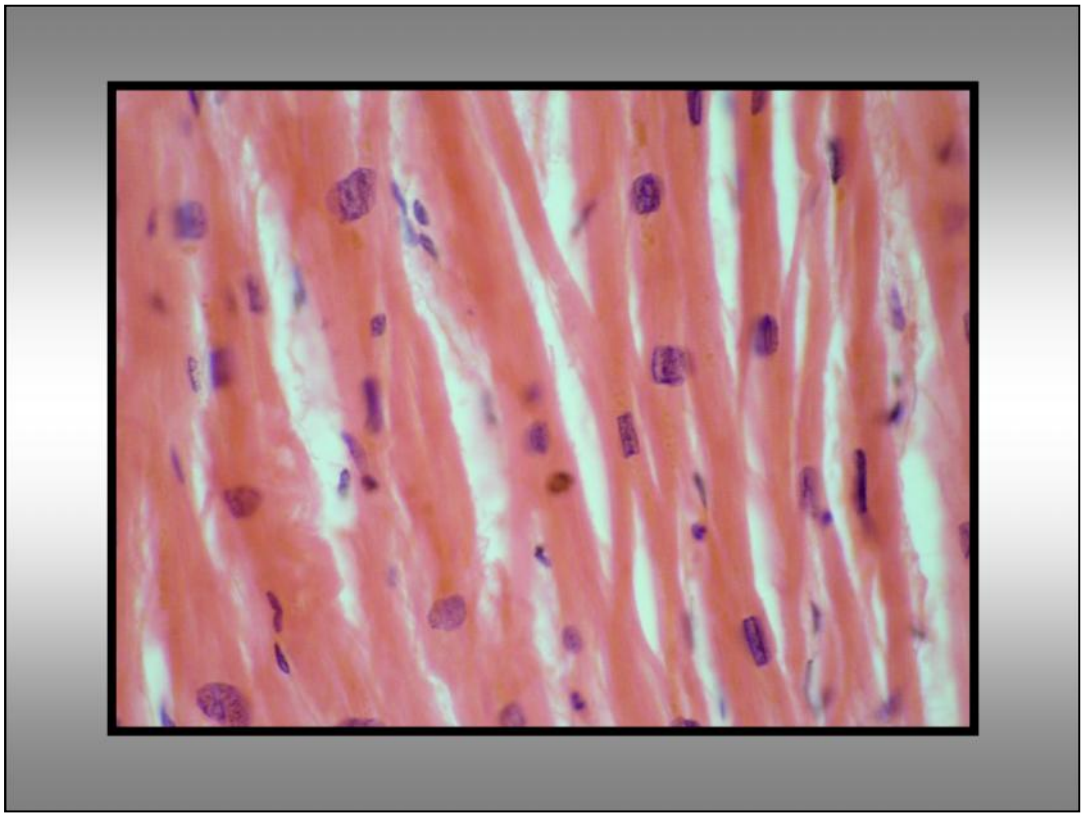


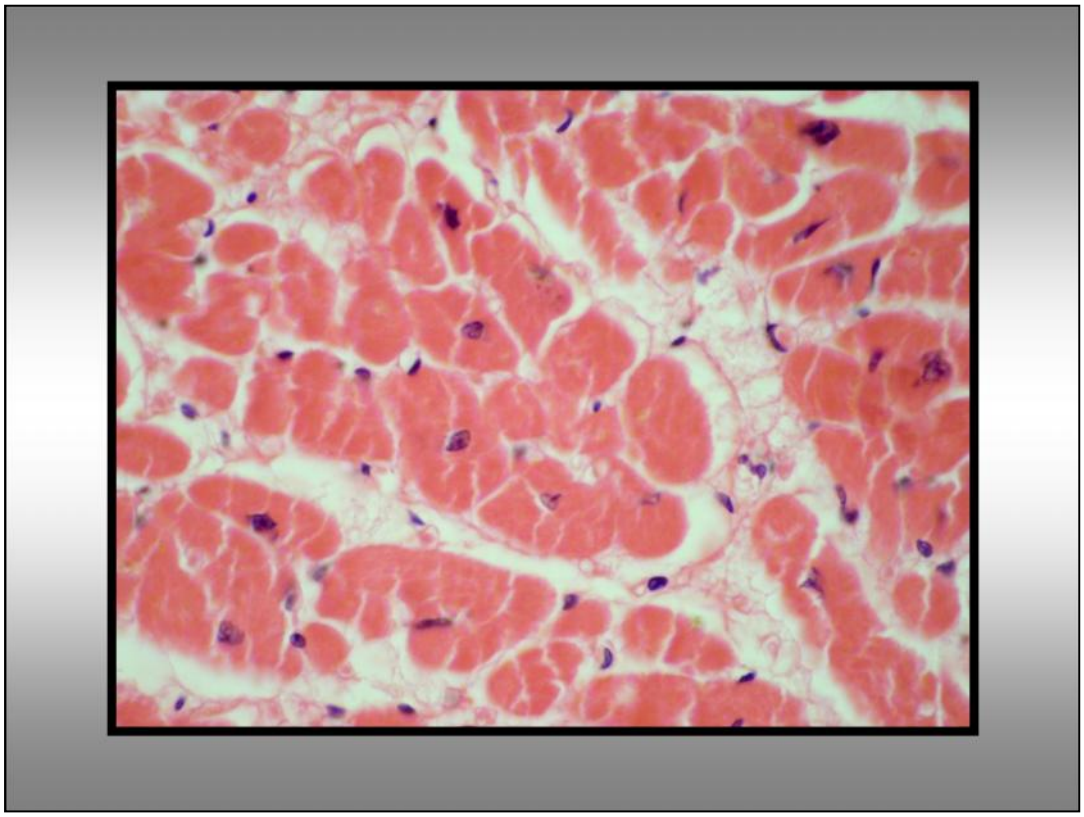


HEART



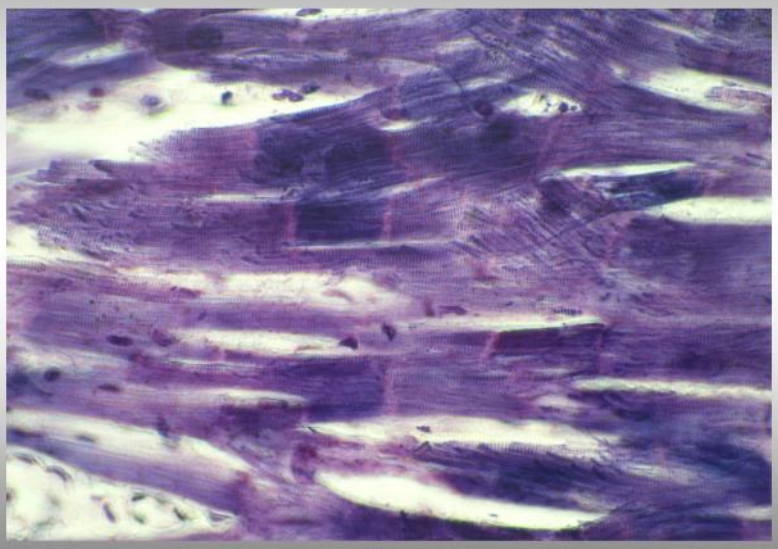


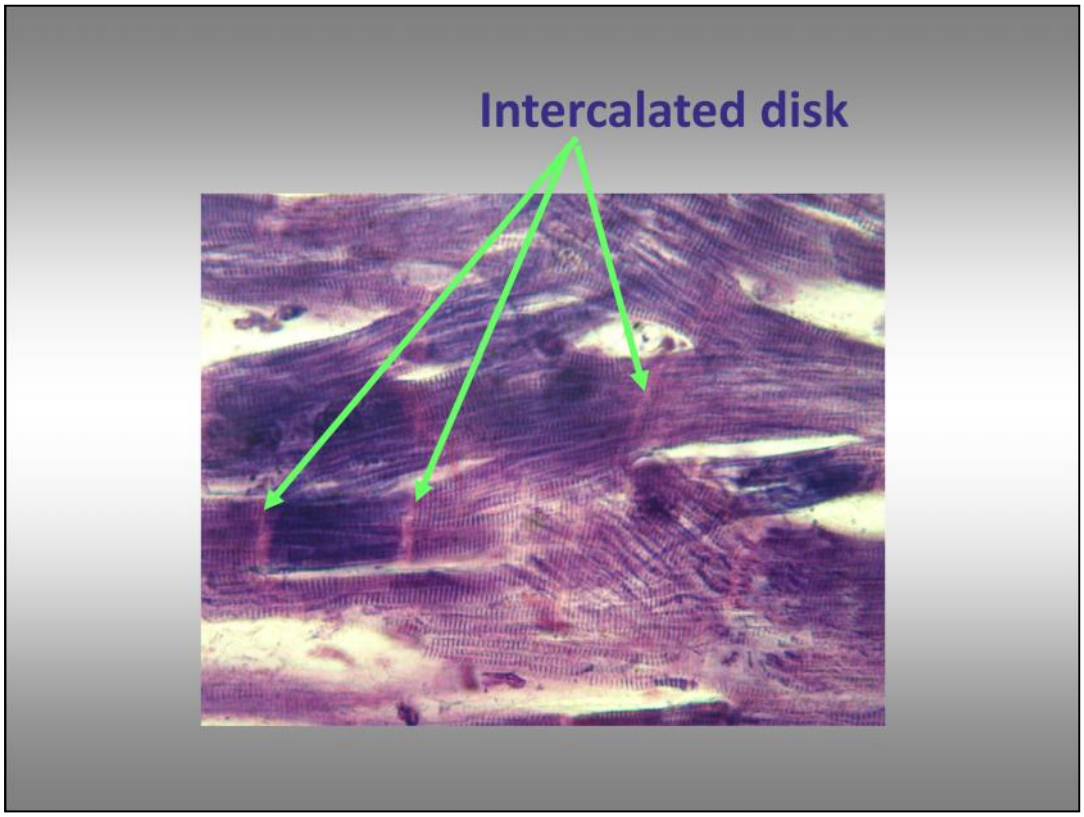




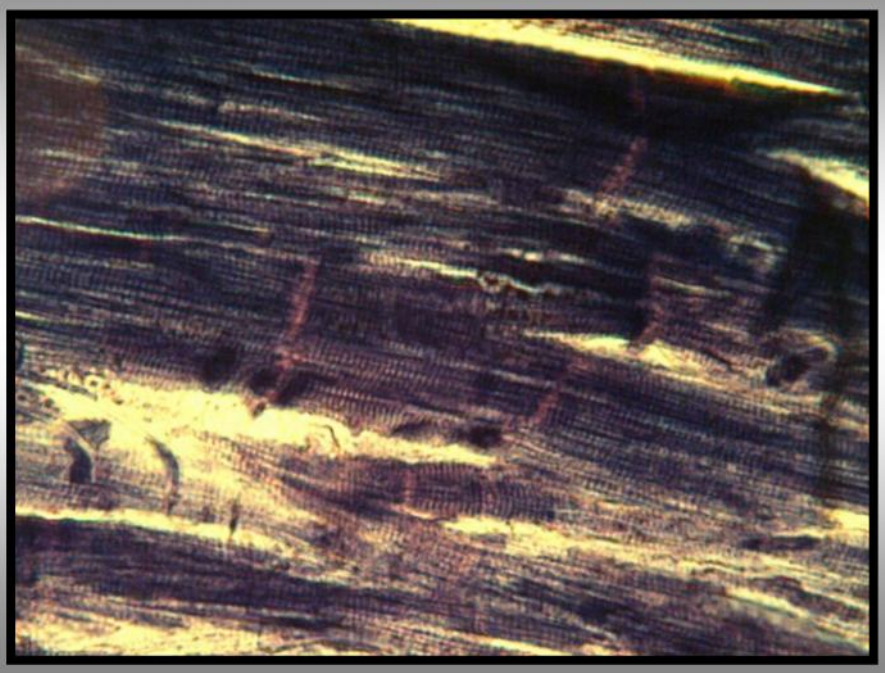
Intercalated disk

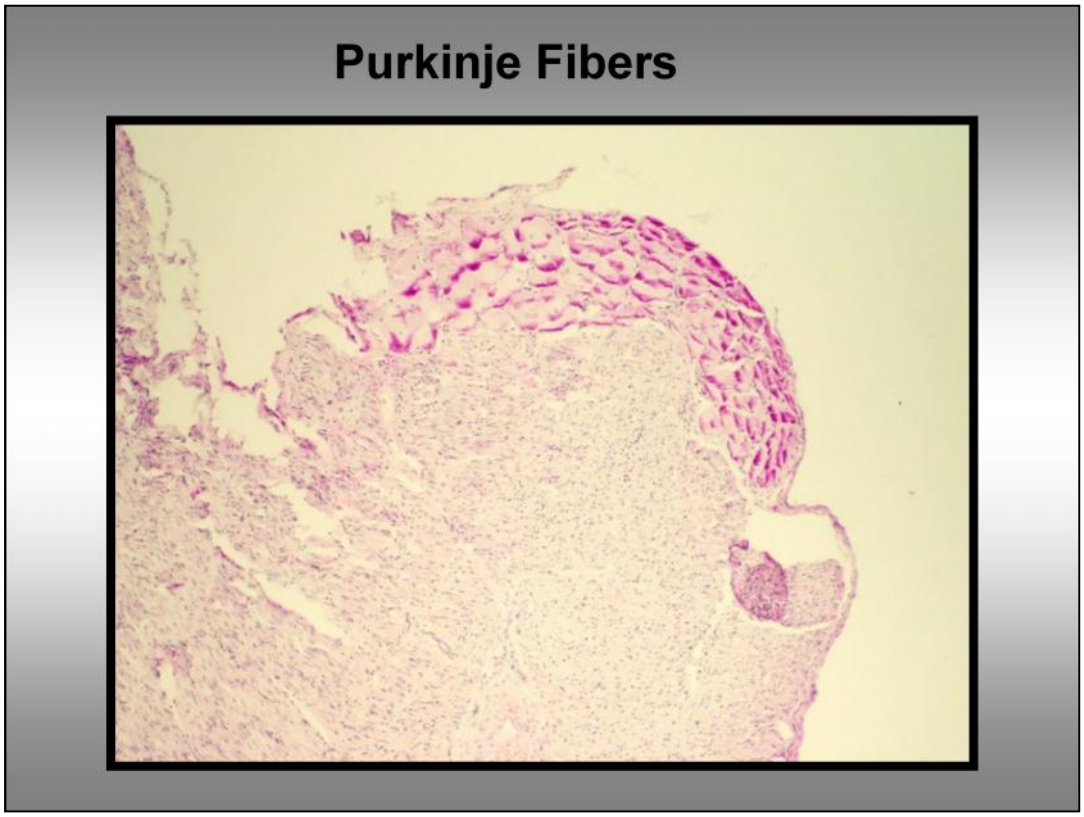
(special stain)




Intercalated disk

Intercalated disc



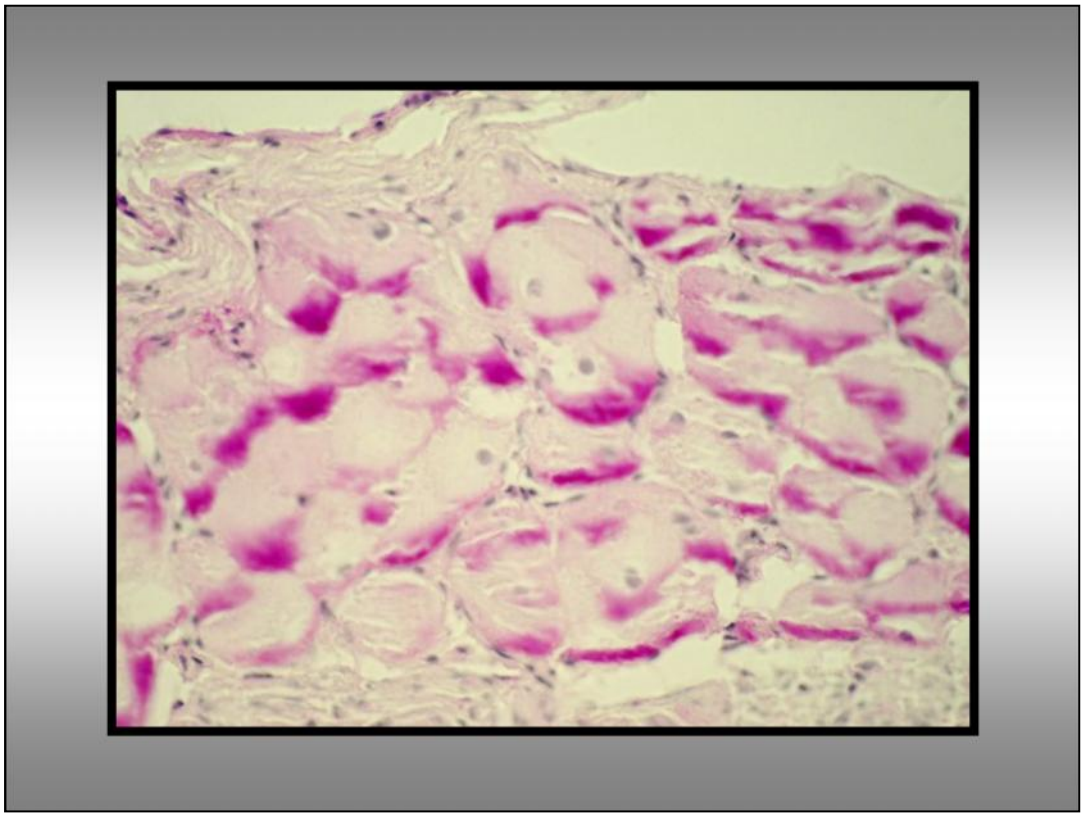


Thicker
not contractile = no myofibrils

Much glycogen

No T tubule system

Beneath endocardium



Purkinje Fibers

(PAS stain)