Blood Vessels

Learning Objectives:

- *Compare and contrast the structure and function of*
  - *Arteries*
  - *Veins*
  - *Capillaries*

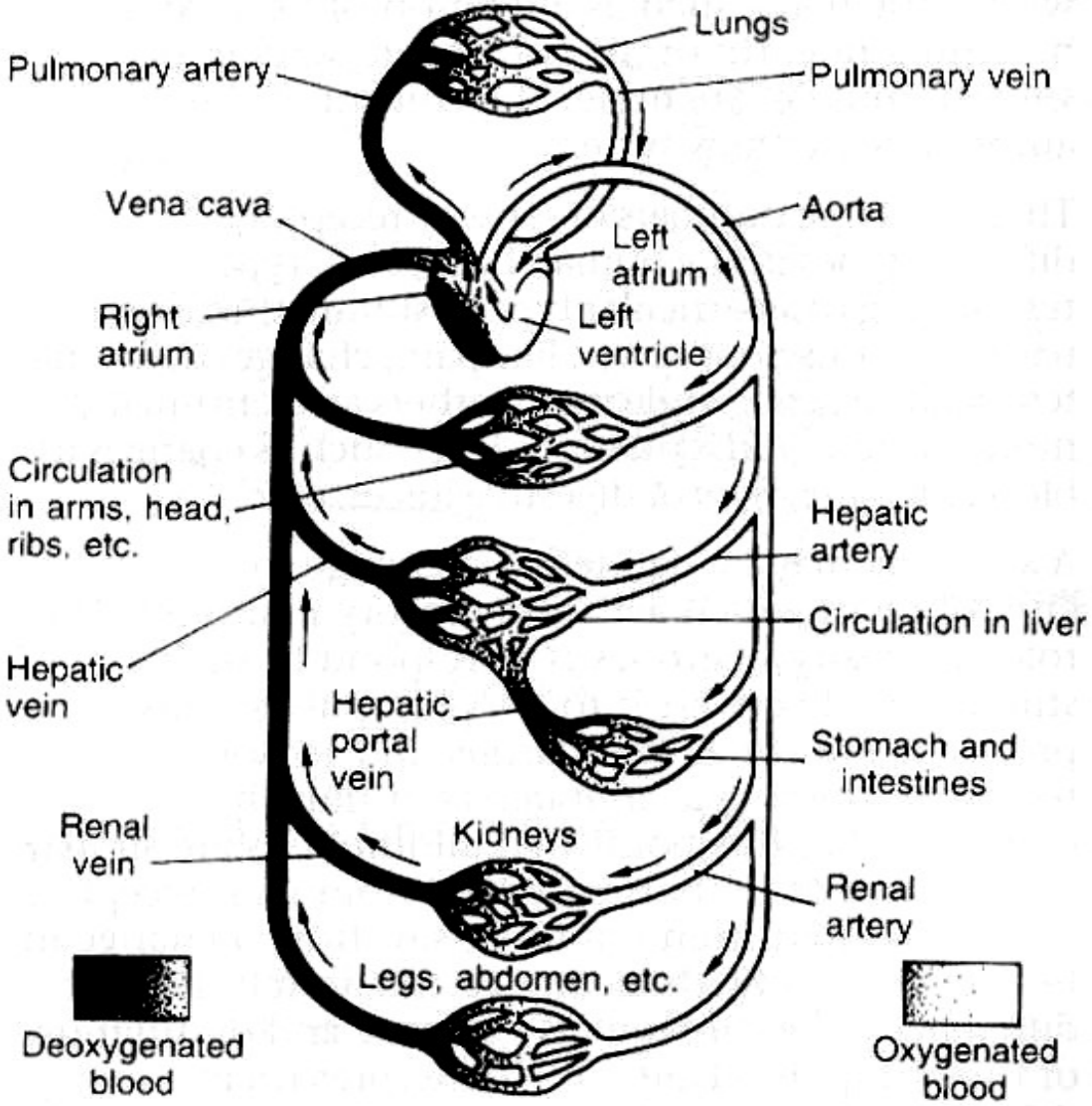
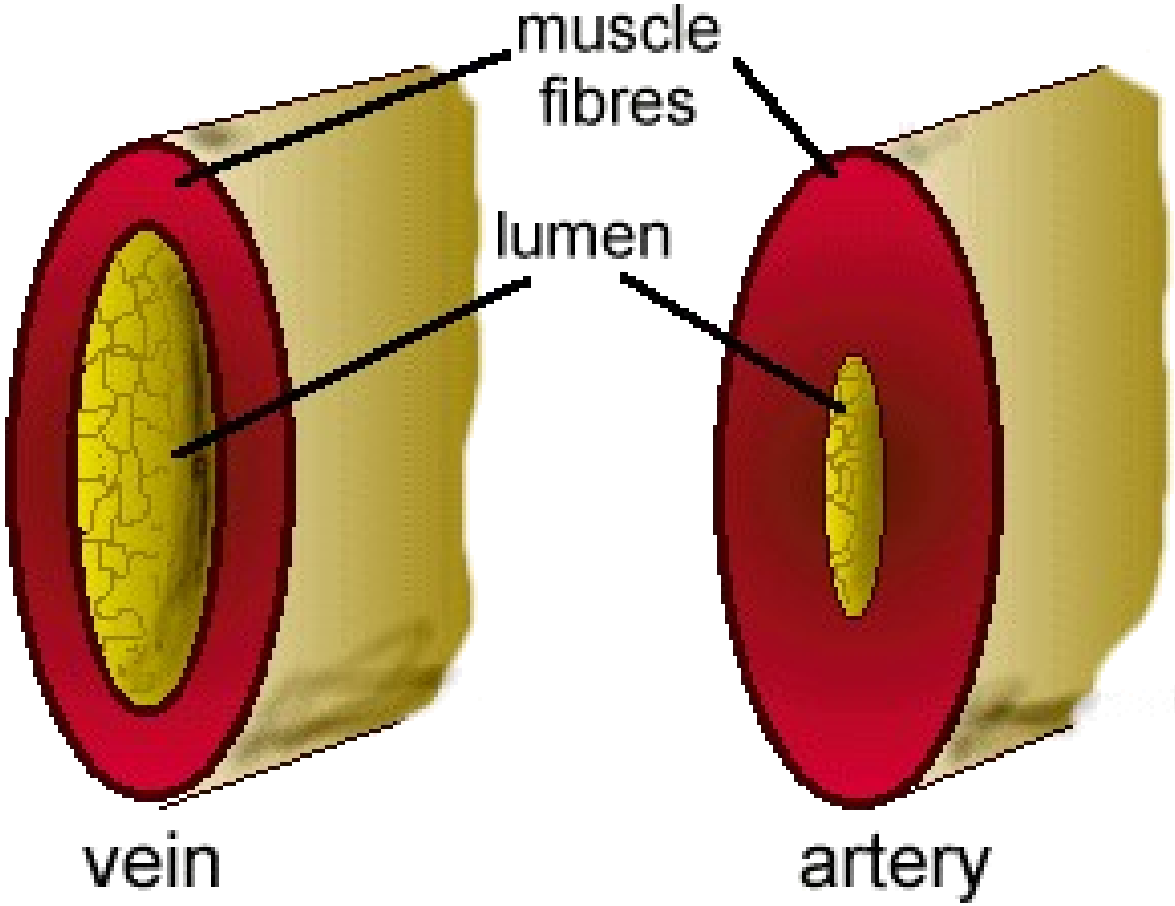
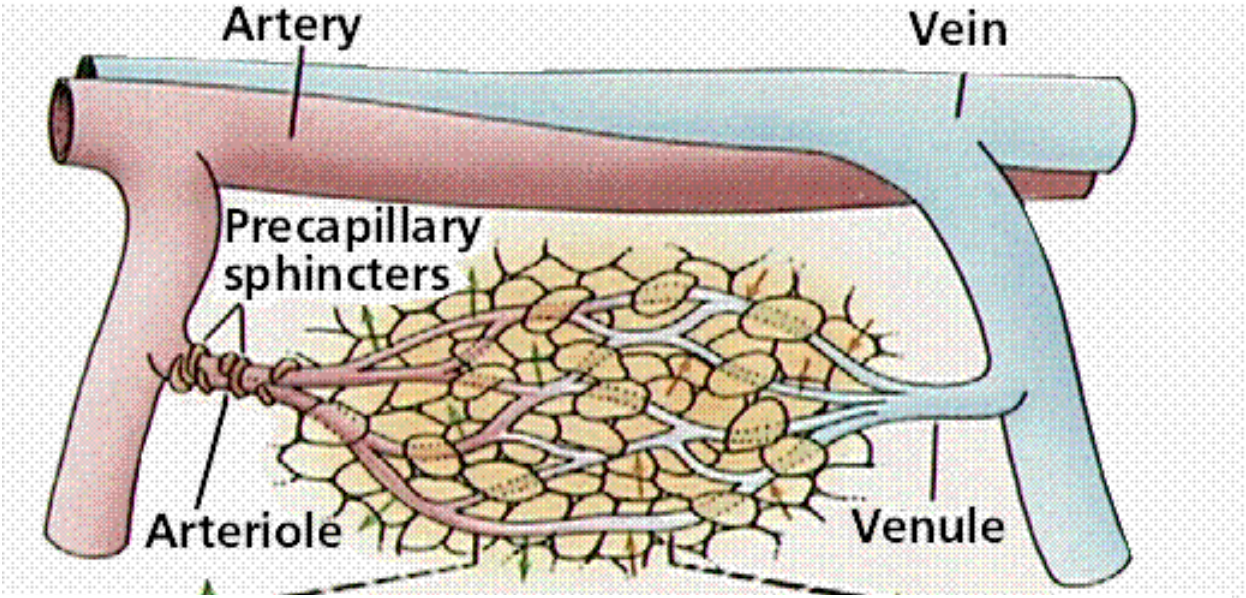
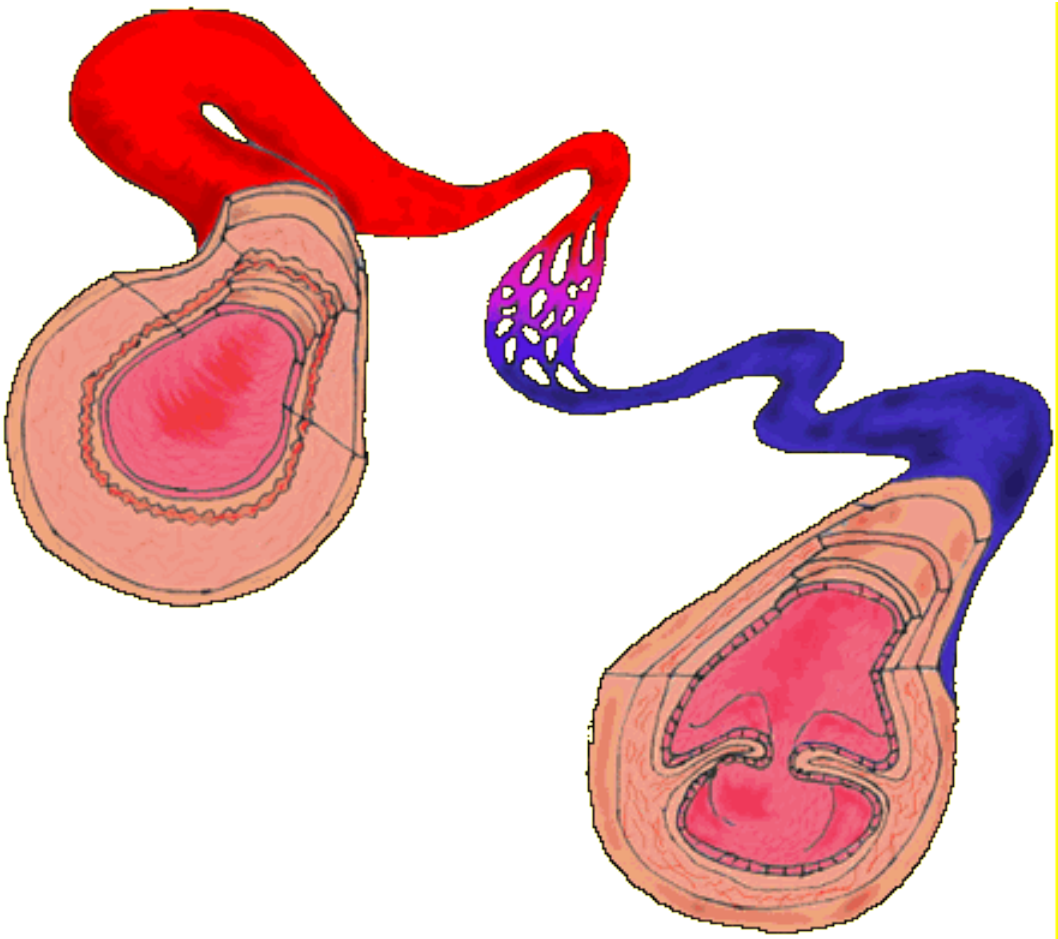
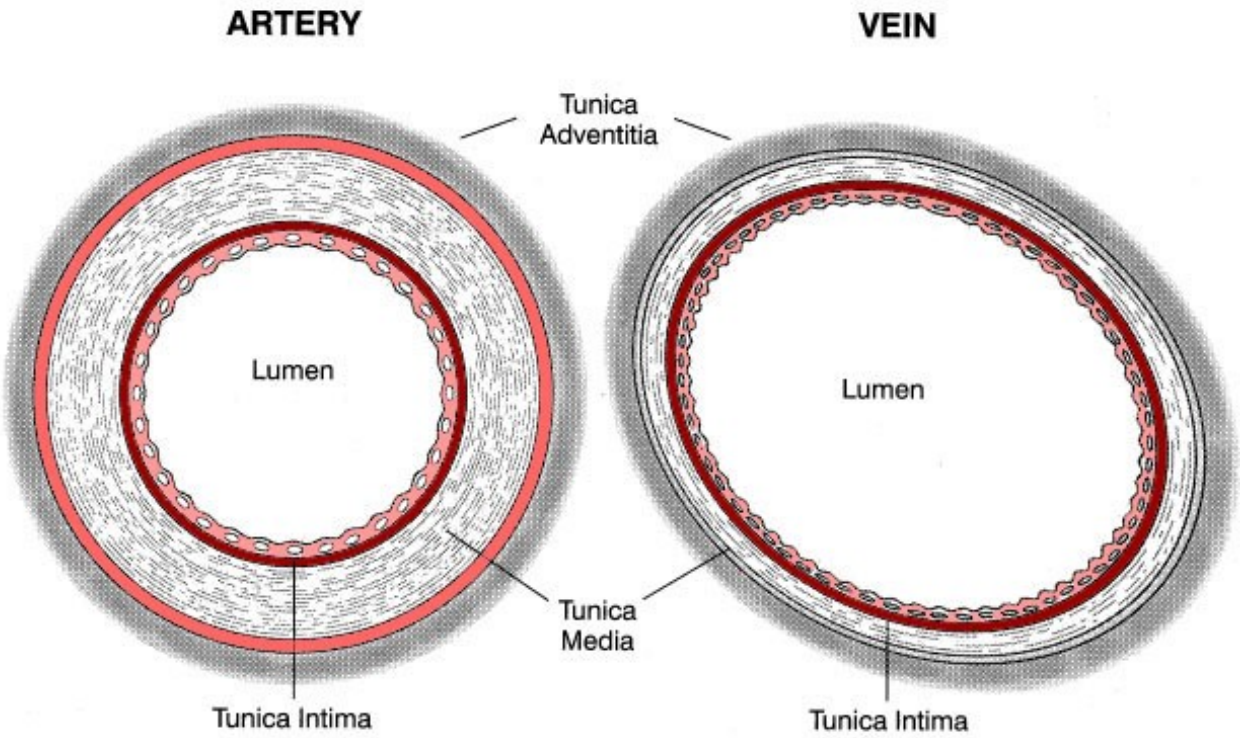


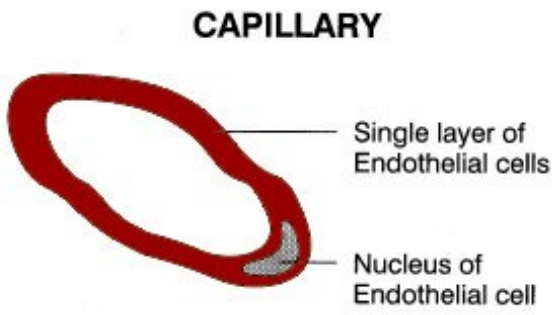
Figure 8.11 The human circulatory system

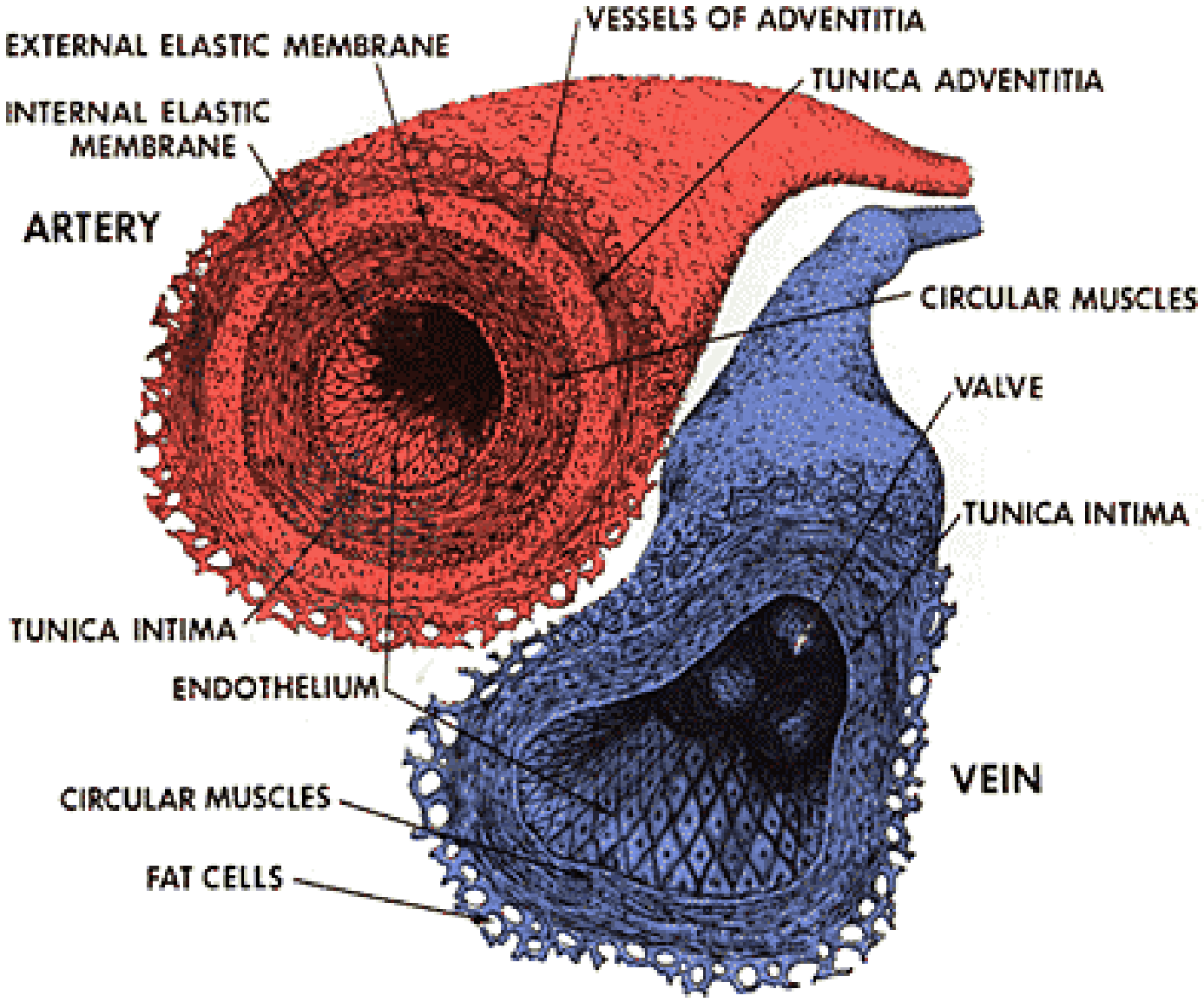

muscle fibres
lumen
vein
artery

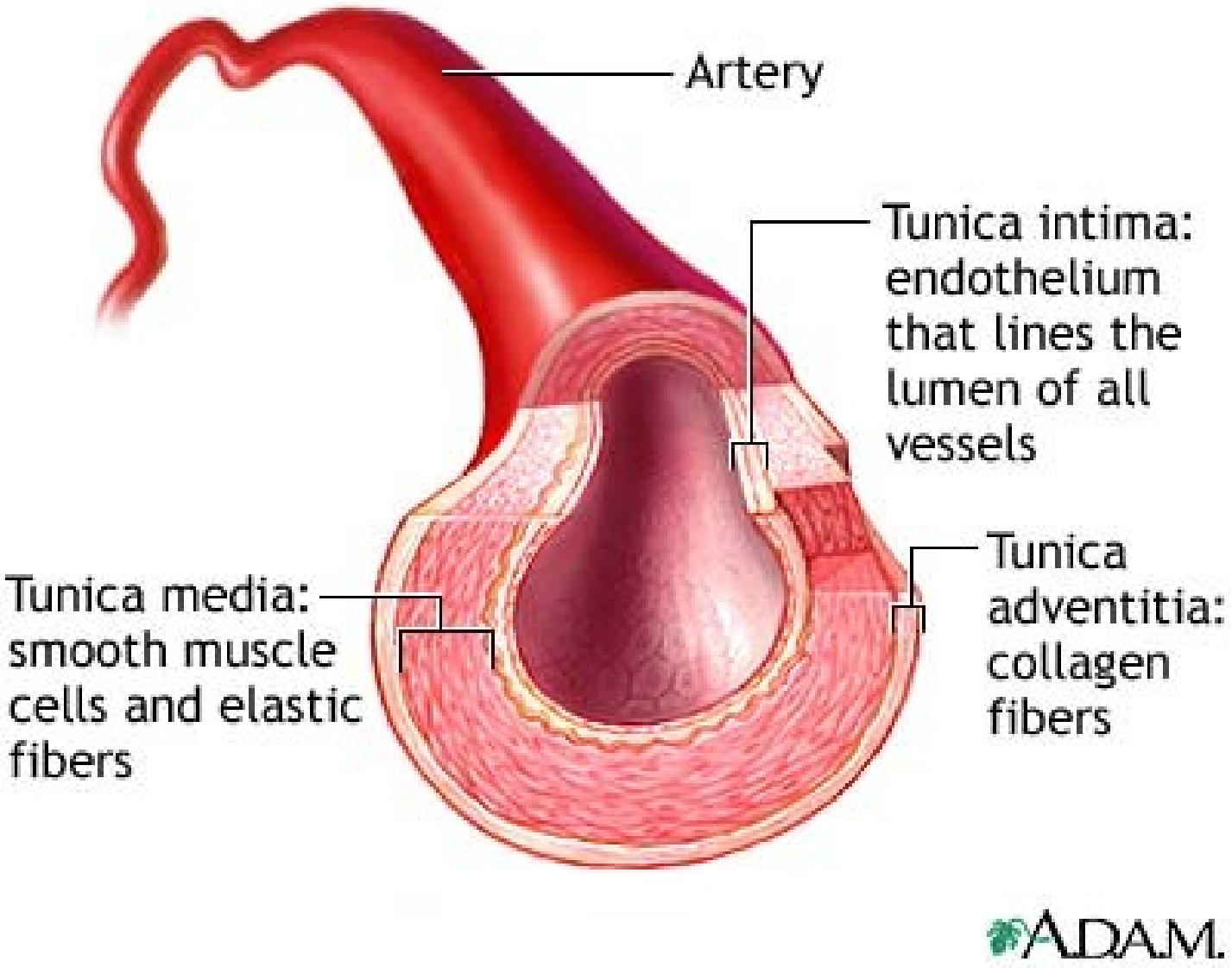

Artery
Vein
Precapillary
sphincters
Arteriole
Venule

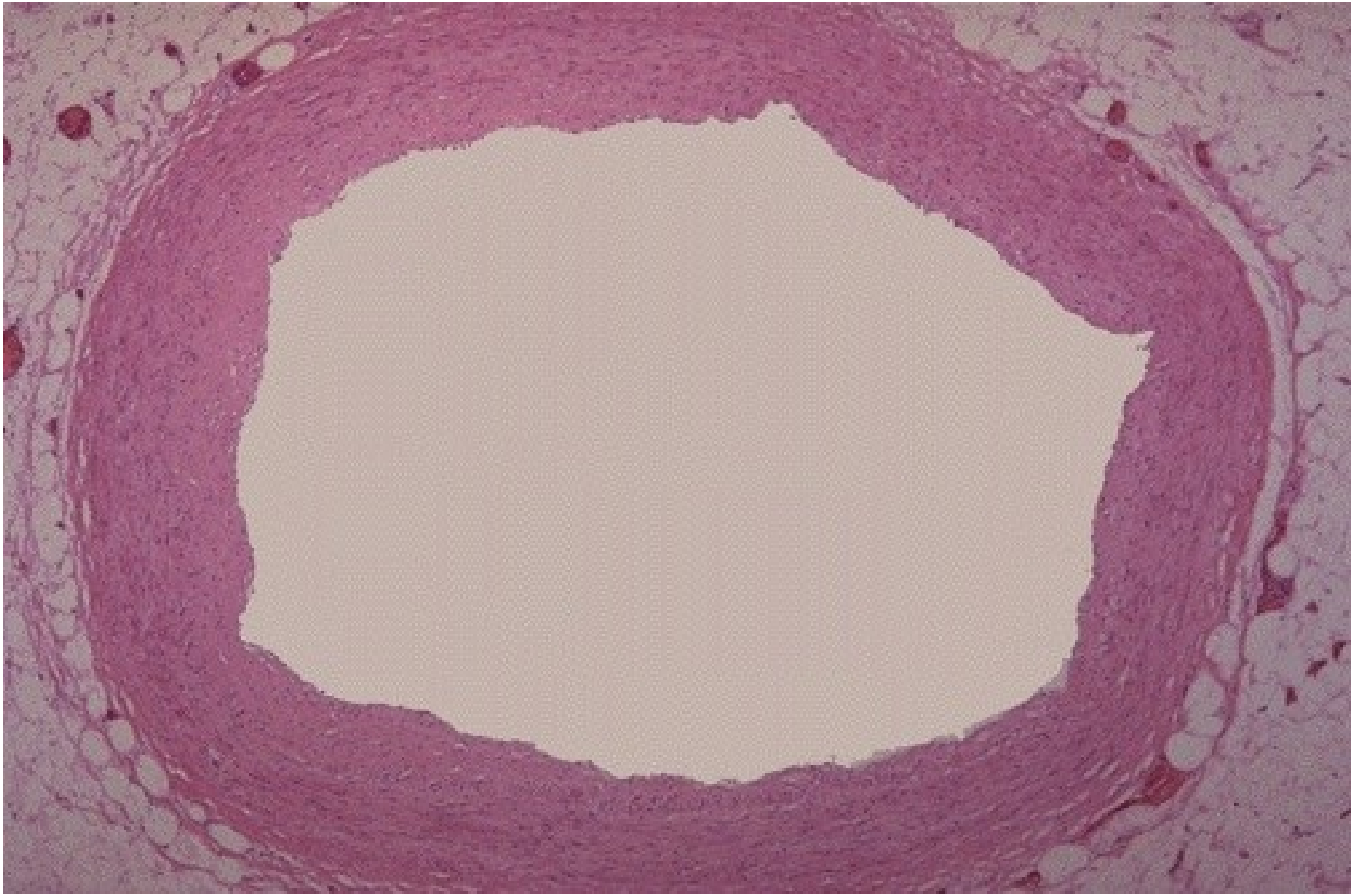


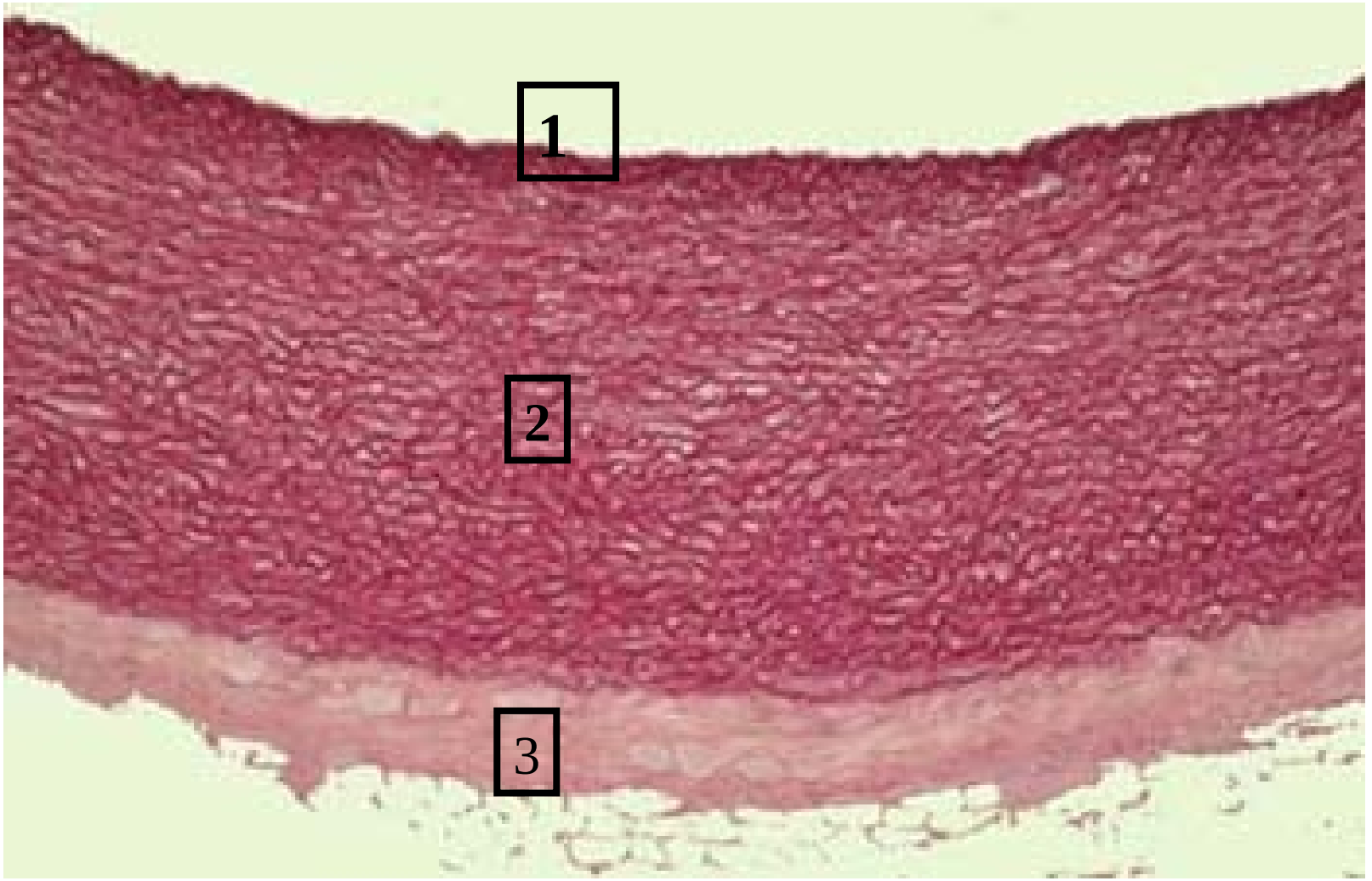

ARTERY
VEIN
Tunica
Adventitia
Lumen
Lumen
Tunica
Media
Tunica Intima
Tunica Intima

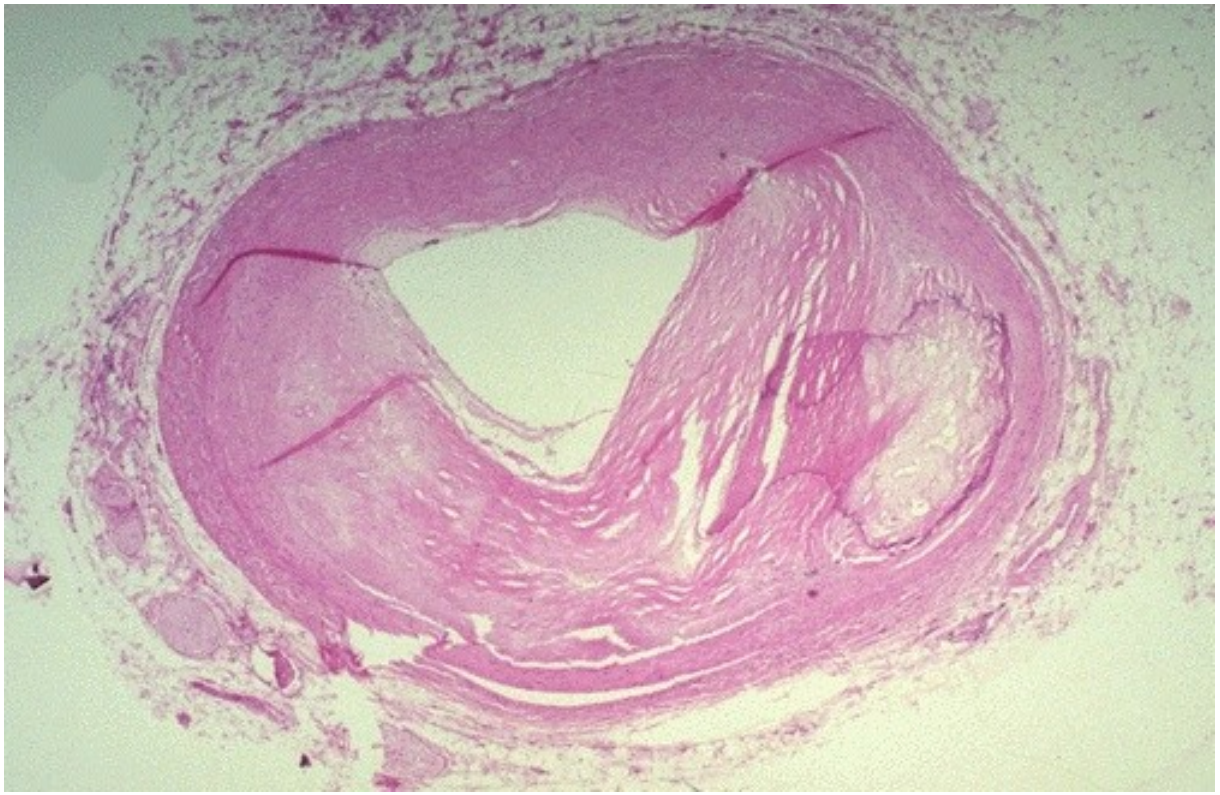

CAPILLARY
Single layer of
Endothelial cells
Nucleus of
Endothelial cell

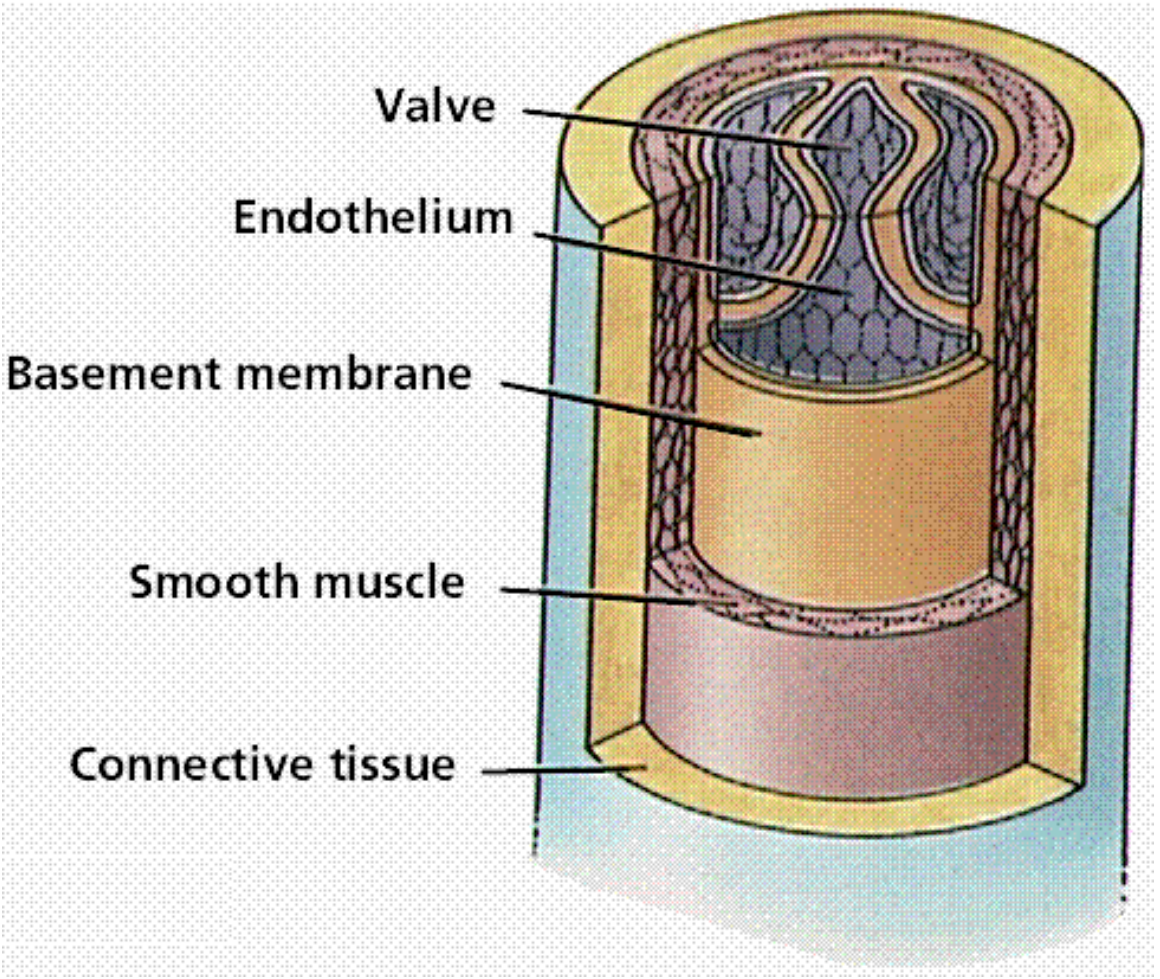

EXTERNAL ELASTIC MEMBRANE
VESSELS OF ADVENTITIA
TUNICA ADVENTITIA
INTERNAL ELASTIC MEMBRANE
ARTERY
CIRCULAR MUSCLES
VALVE
TUNICA INTIMA
TUNICA INTIMA
ENDOTHELIUM
VEIN
CIRCULAR MUSCLES
FAT CELLS


Artery
Tunica intima: endothelium that lines the lumen of all vessels
Tunica media: smooth muscle cells and elastic fibers
Tunica adventitia: collagen fibers
A.D.A.M.

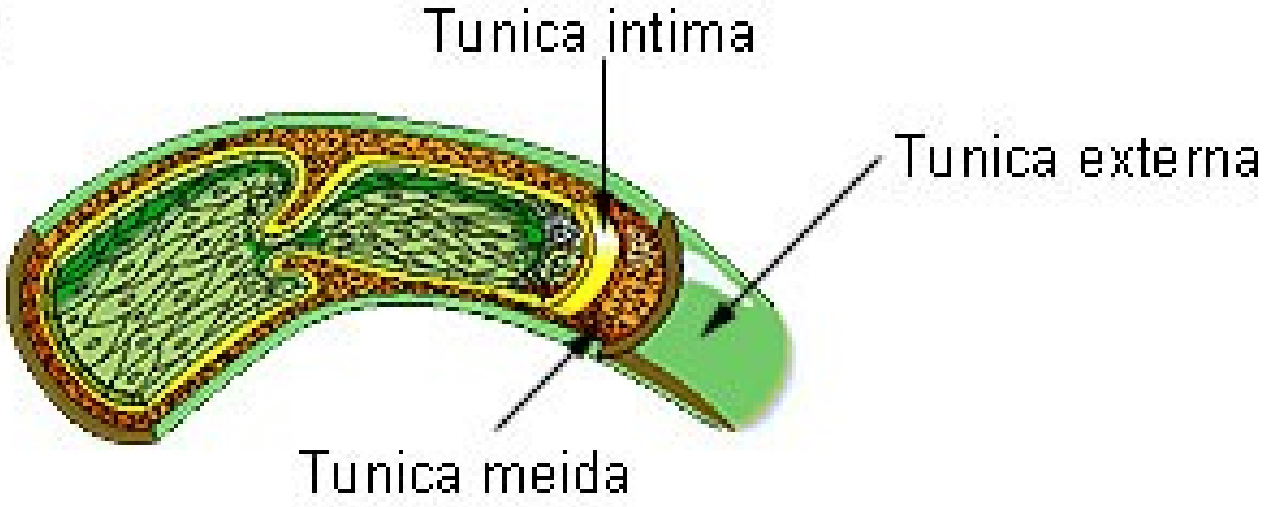


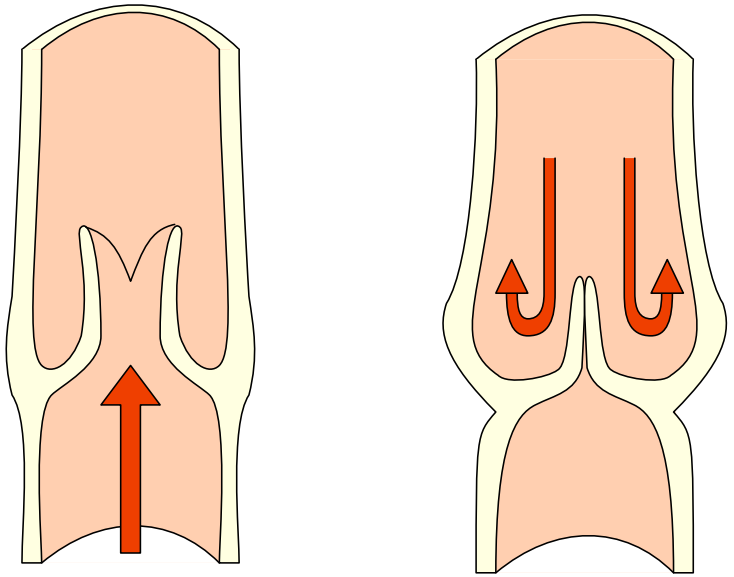

1
2
3

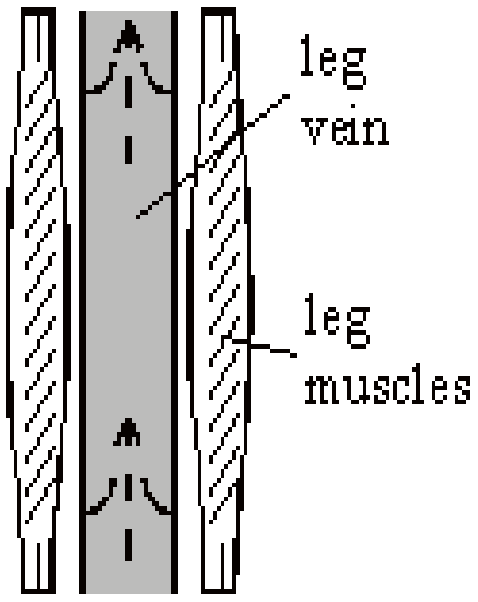



Valve
Endothelium
Basement membrane
Smooth muscle
Connective tissue

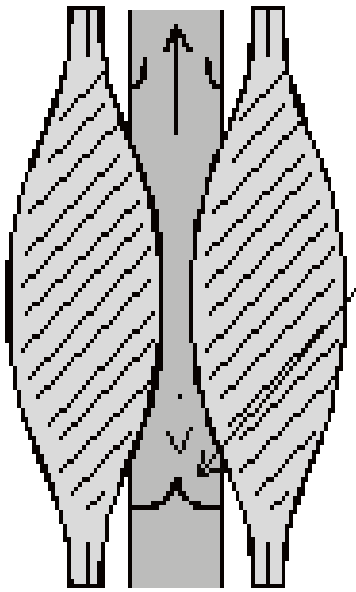
Vein



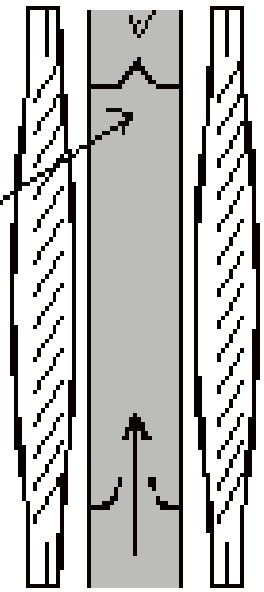




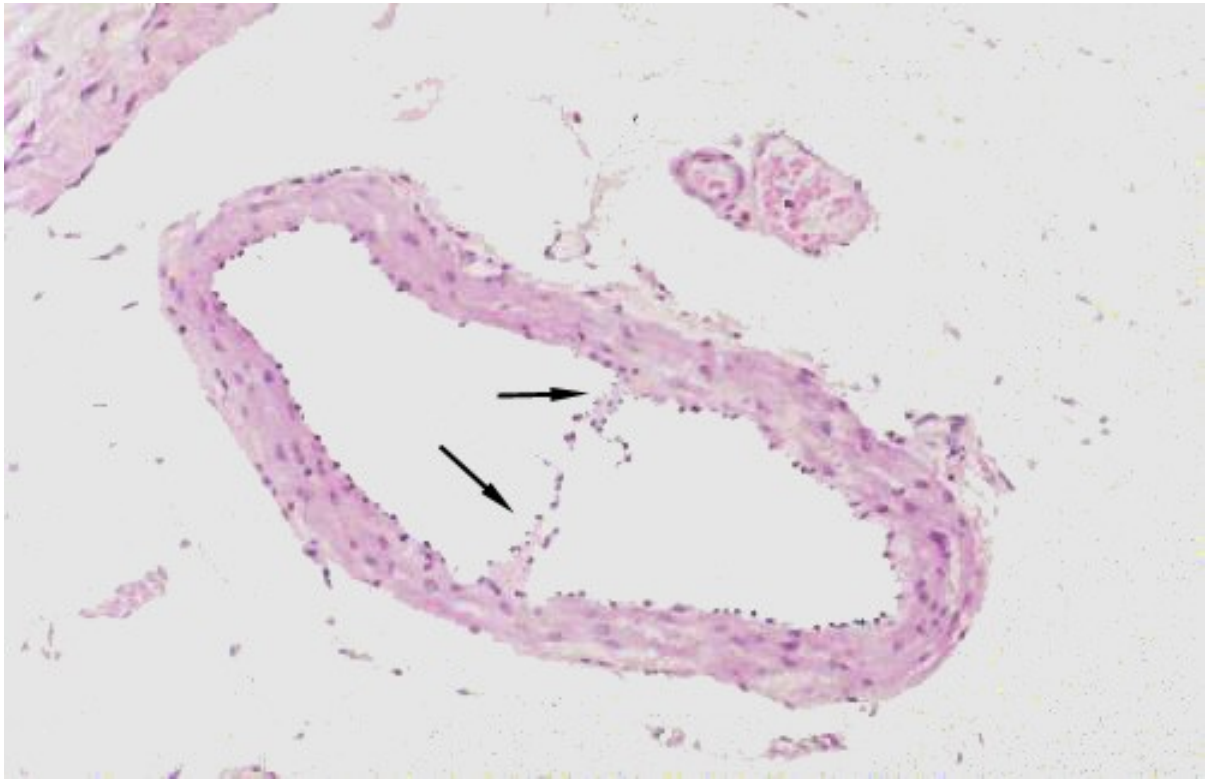
relaxed leg muscles
slow flow

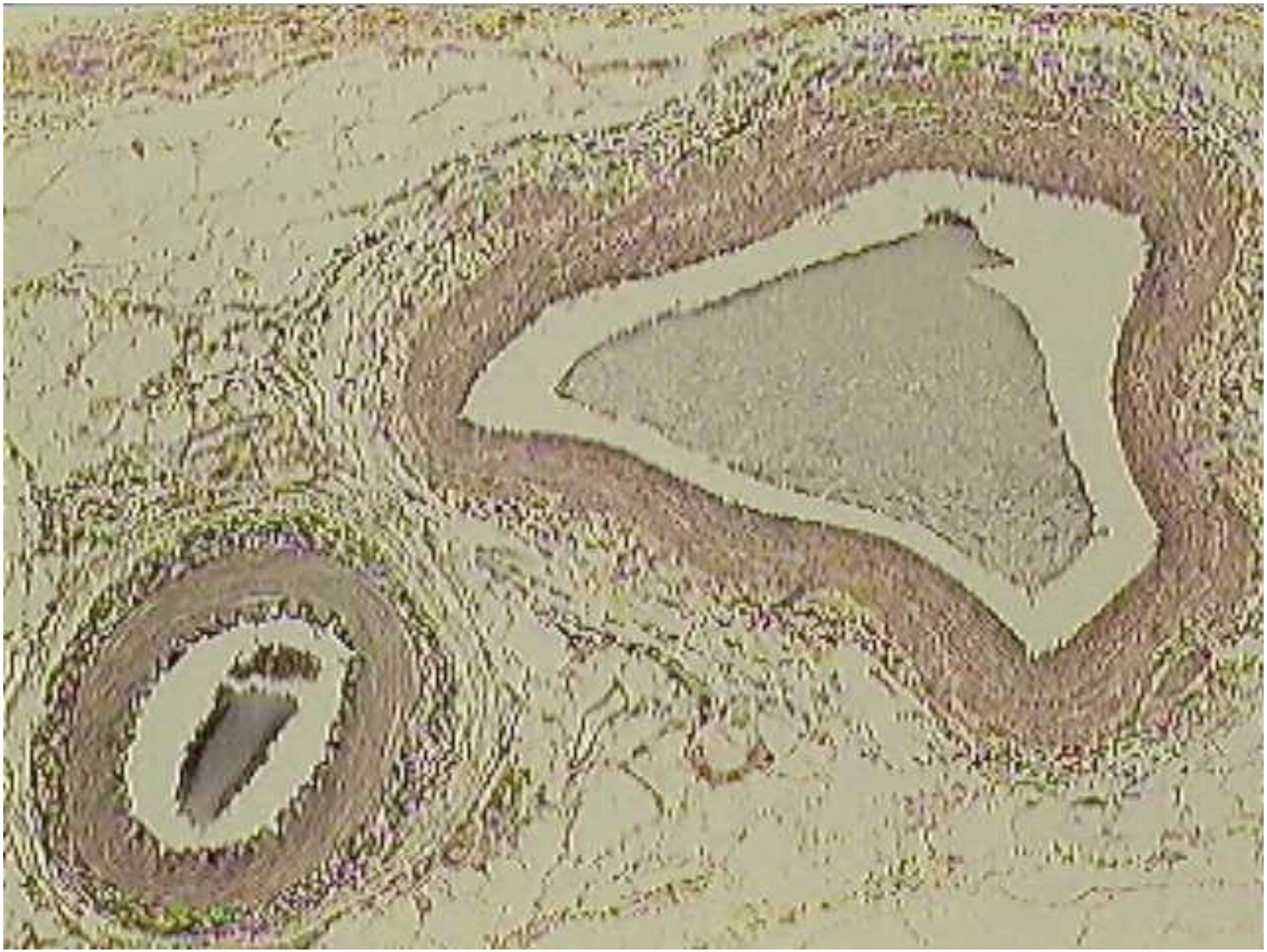


contracted leg muscles
blood forced upwards

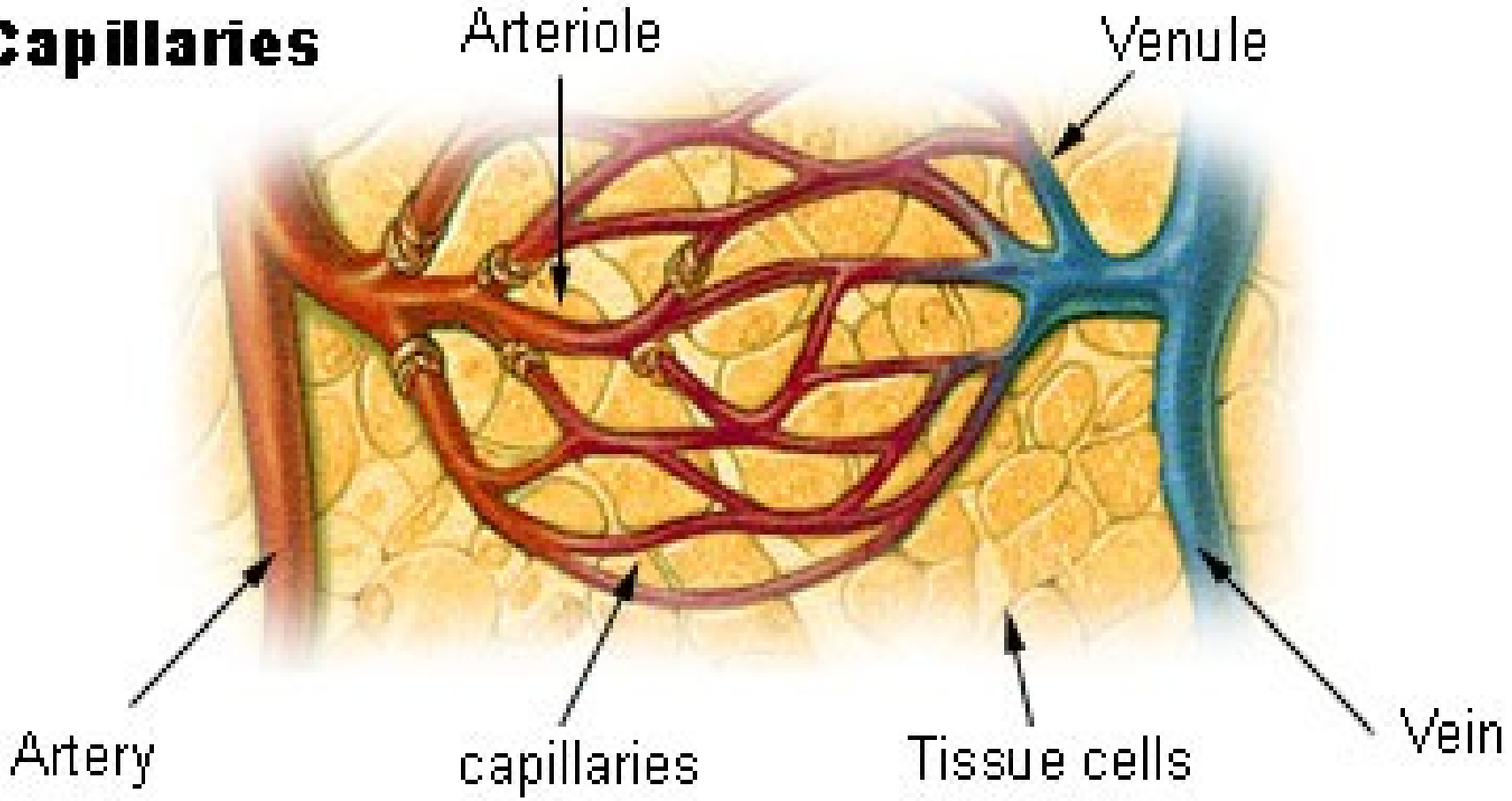


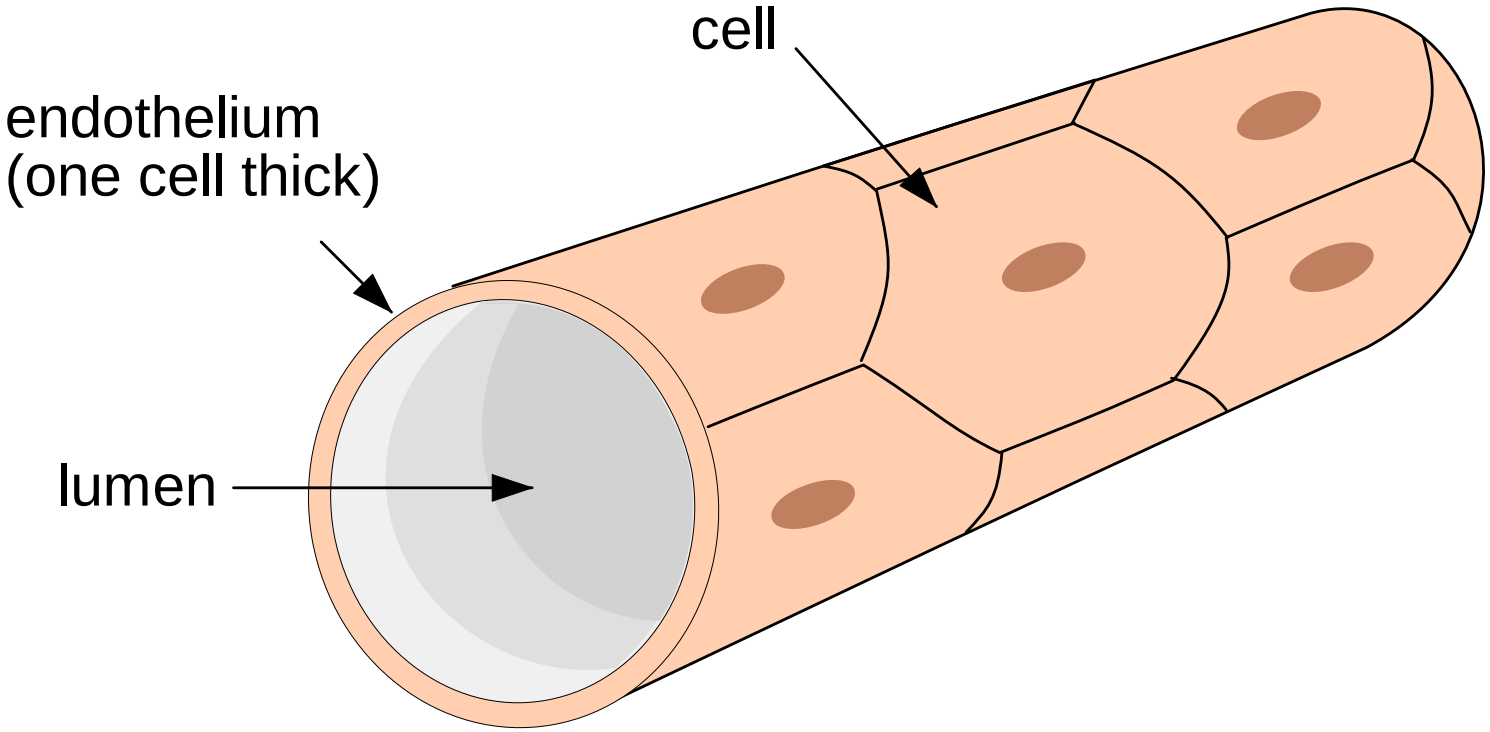
relaxed leg muscles
blood sucked upwards

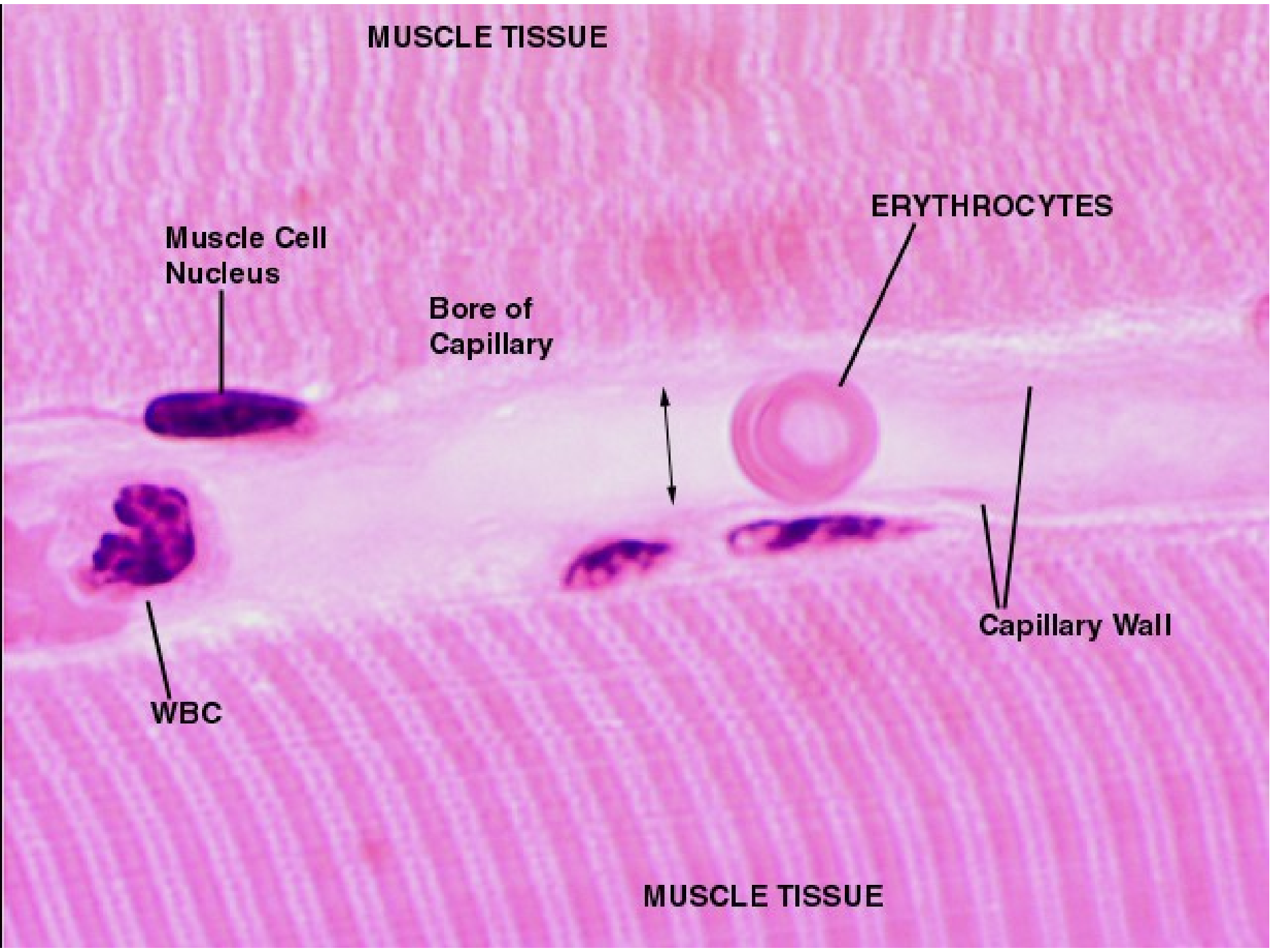


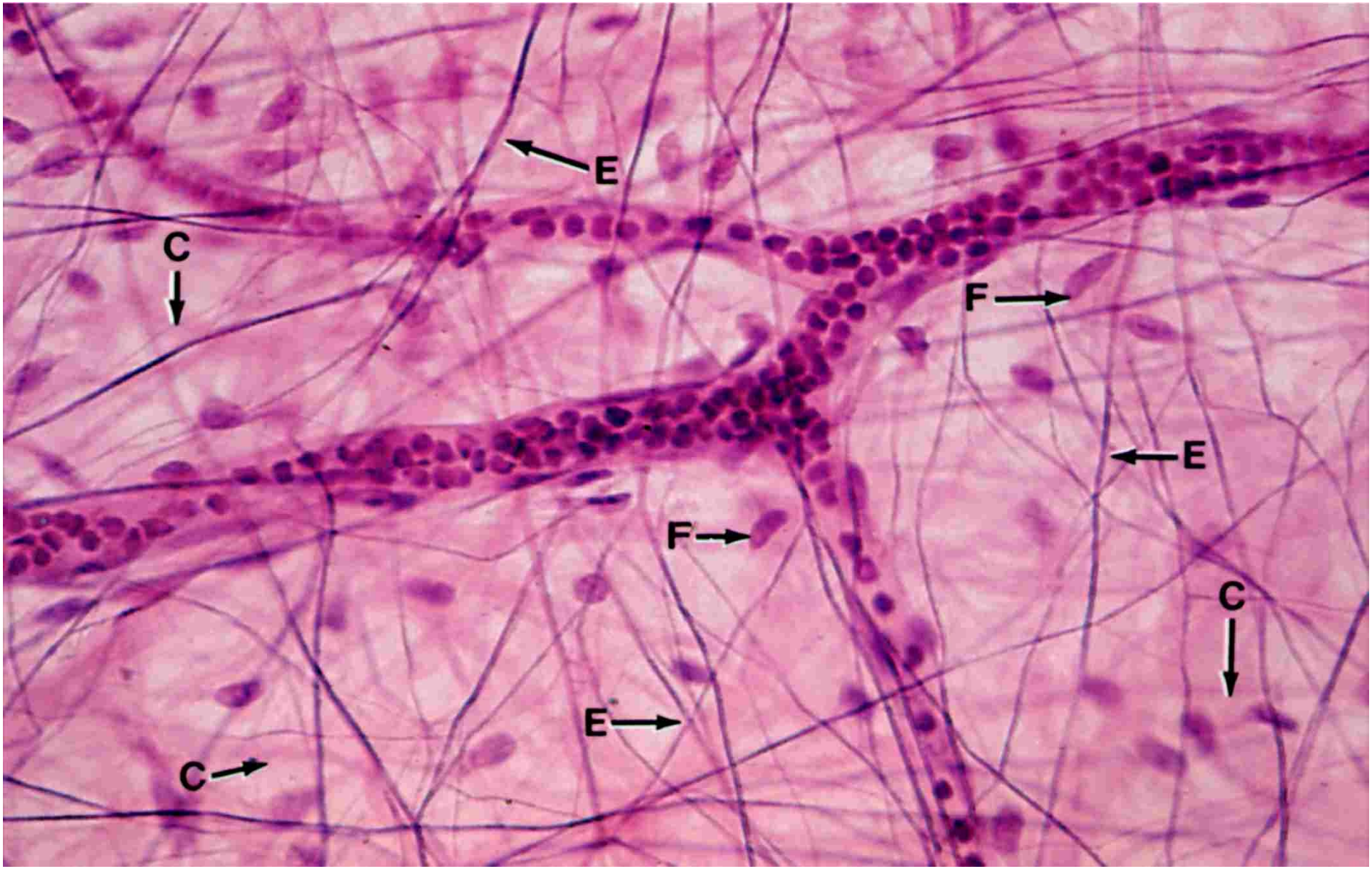


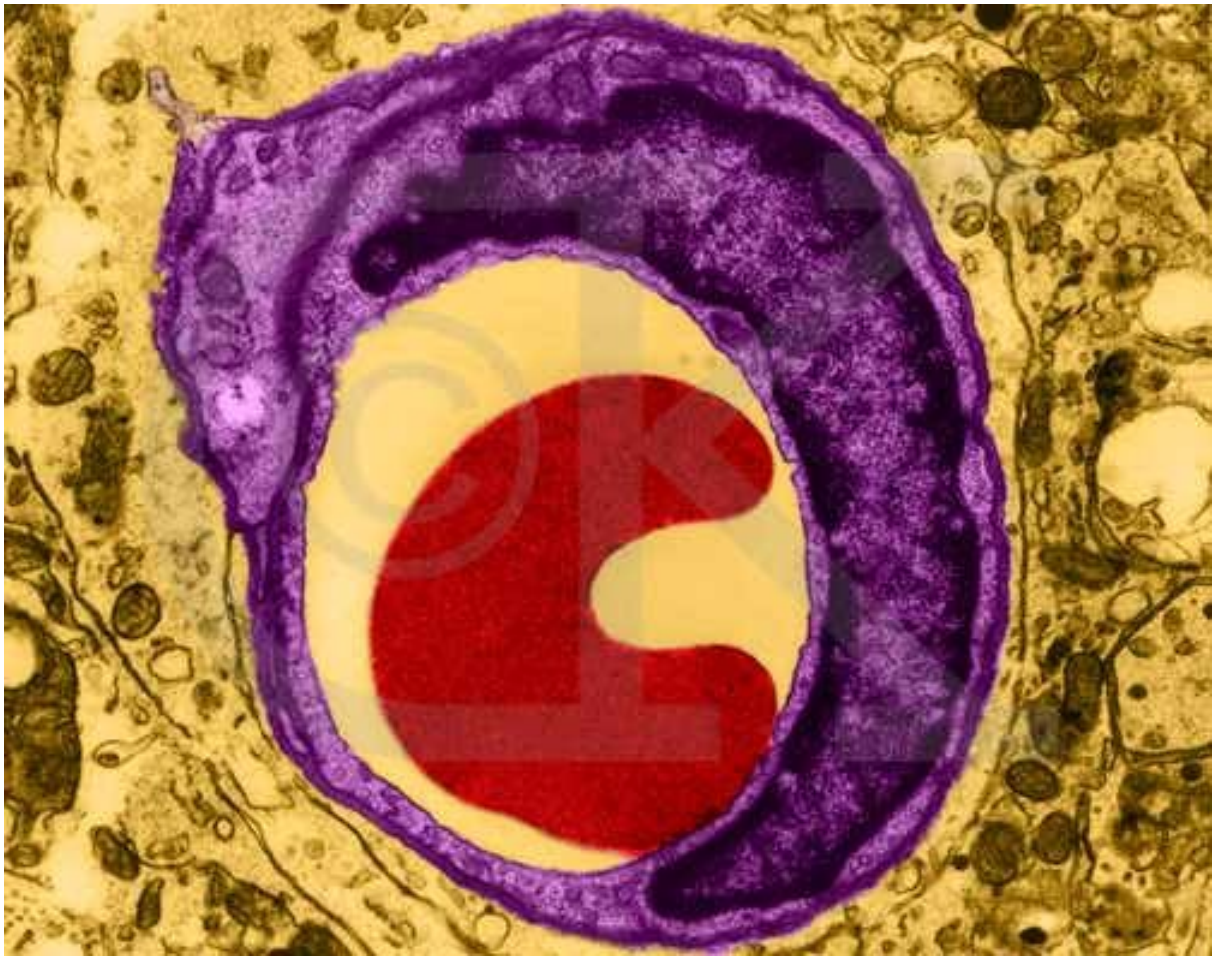
Capillaries




cell
endothelium
(one cell thick)
lumen


MUSCLE TISSUE
ERYTHROCYTES
Muscle Cell Nucleus
Bore of Capillary
Capillary Wall
WBC
MUSCLE TISSUE


E
C
F
E
F
C
E
C



Task

Draw and complete a table to compare structure and function of arteries, veins and capillaries.

E.g.

	Artery	**Veins**	**Capillary**
Function			

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