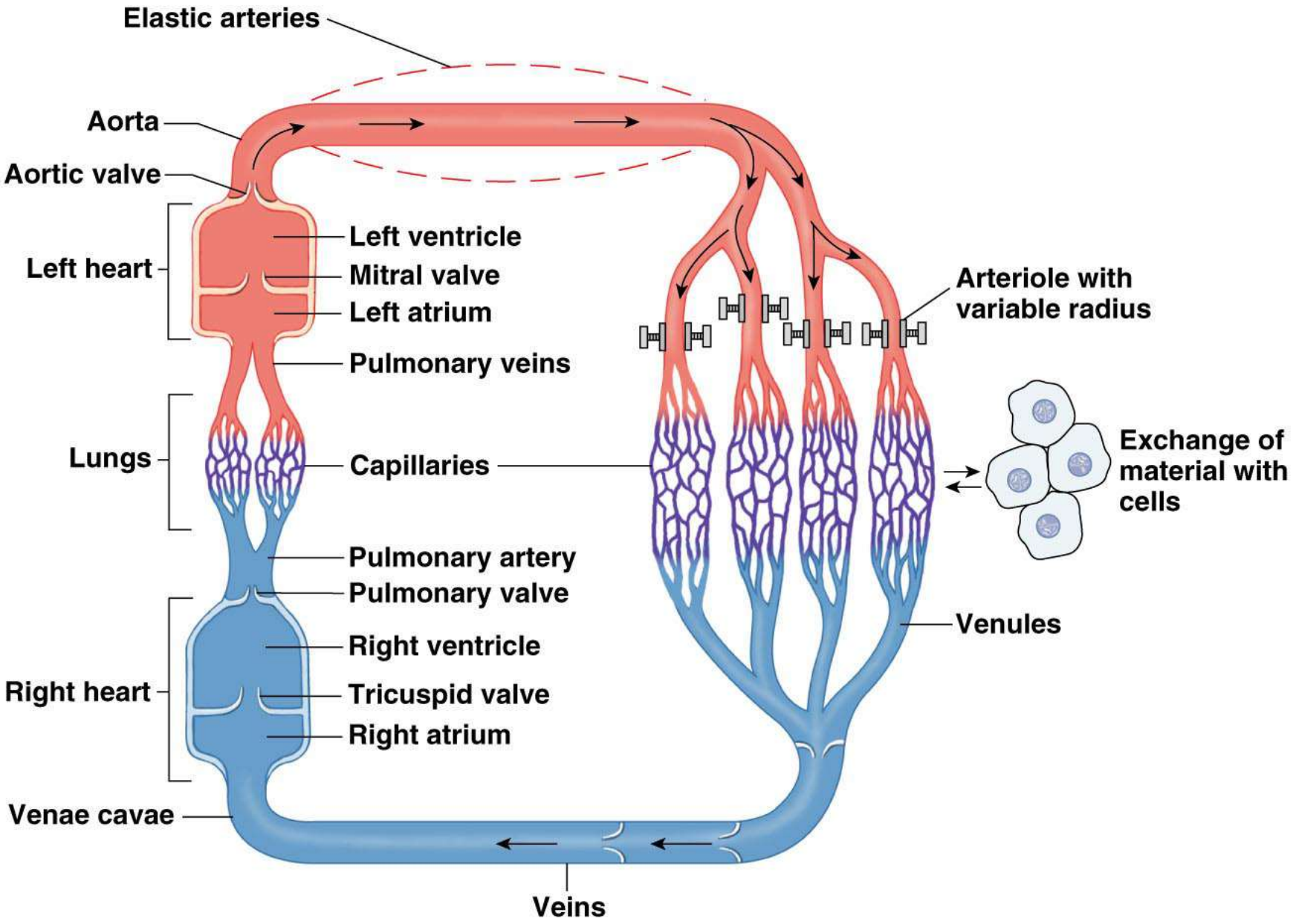


Figure 15-1

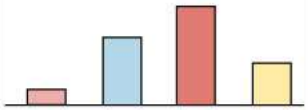
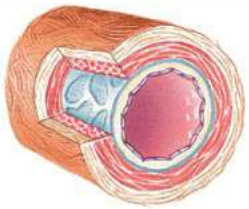
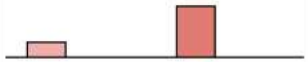
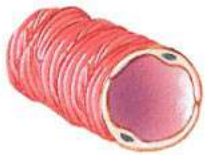
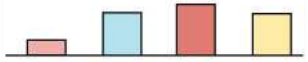
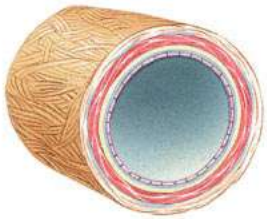
	Mean diameter	Mean wall thickness	Endothelium / Elastic tissue / Smooth muscle / Fibrous tissue	
Artery	4.0 mm	1.0 mm		
Arteriole	30.0 μm	6.0 μm		
Capillary	8.0 μm	0.5 μm		
Venule	20.0 μm	1.0 μm		
Vein	5.0 mm	0.5 mm		

Figure 15-2

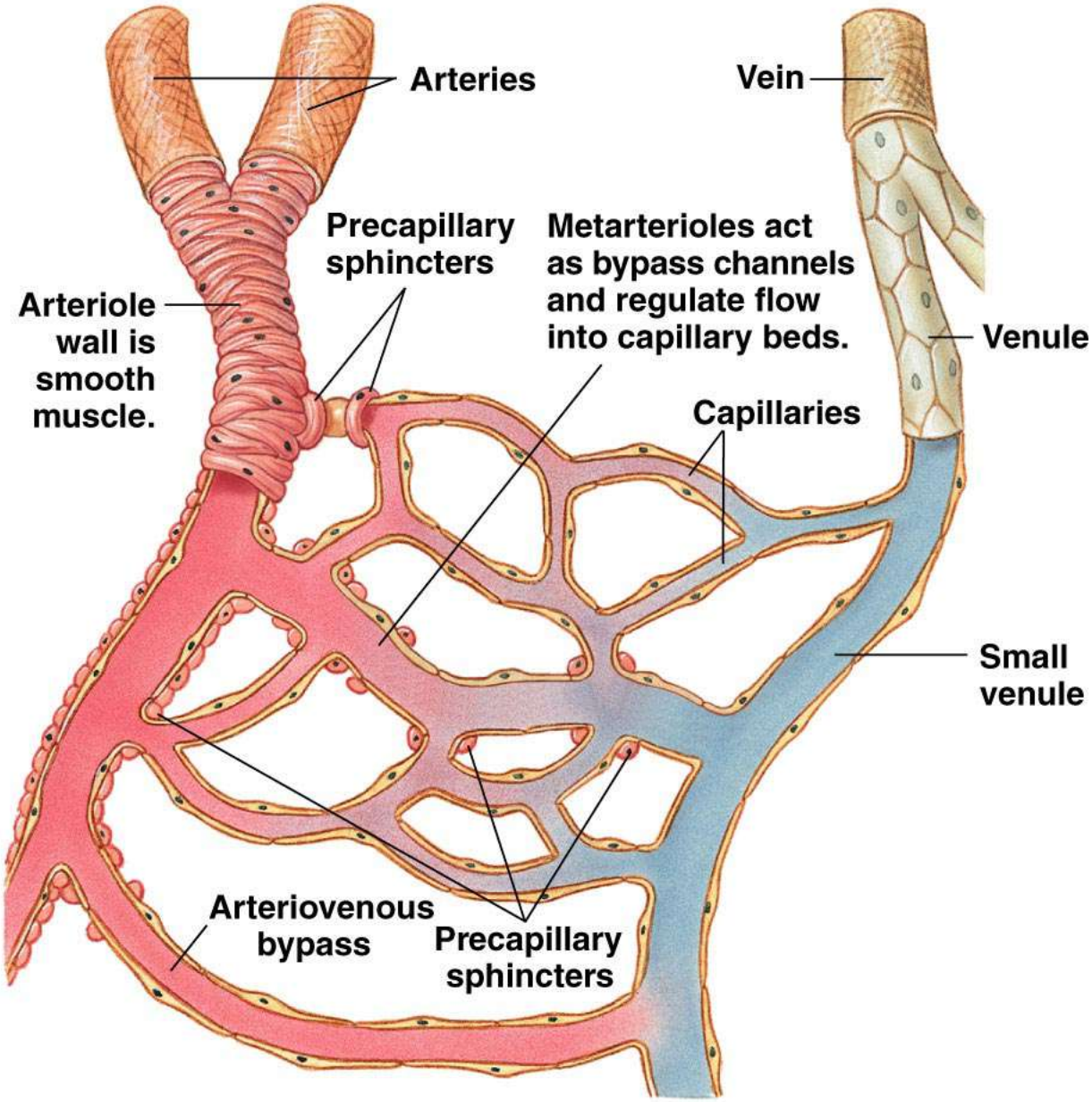


Figure 15-3

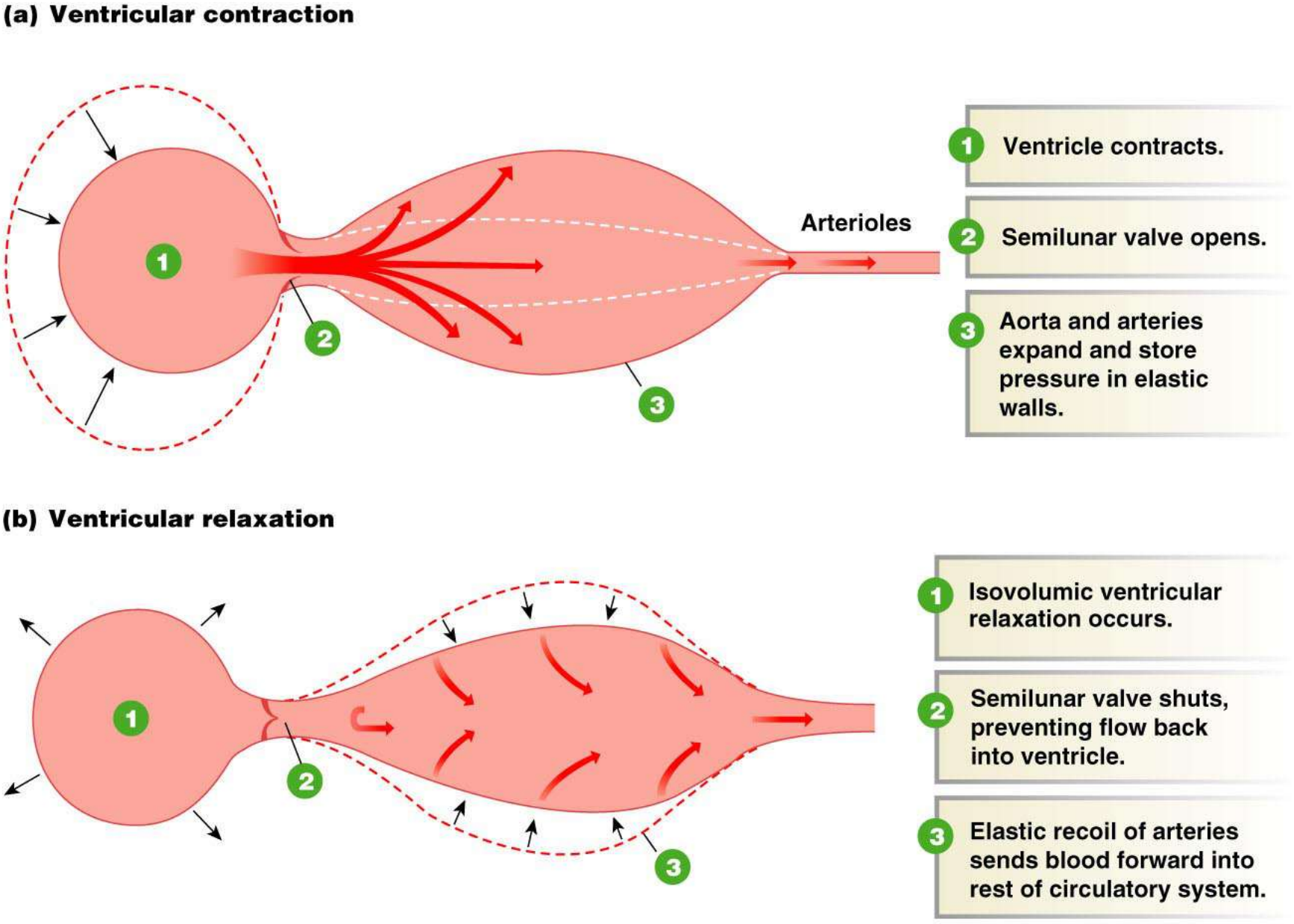


Figure 15-4 - Overview

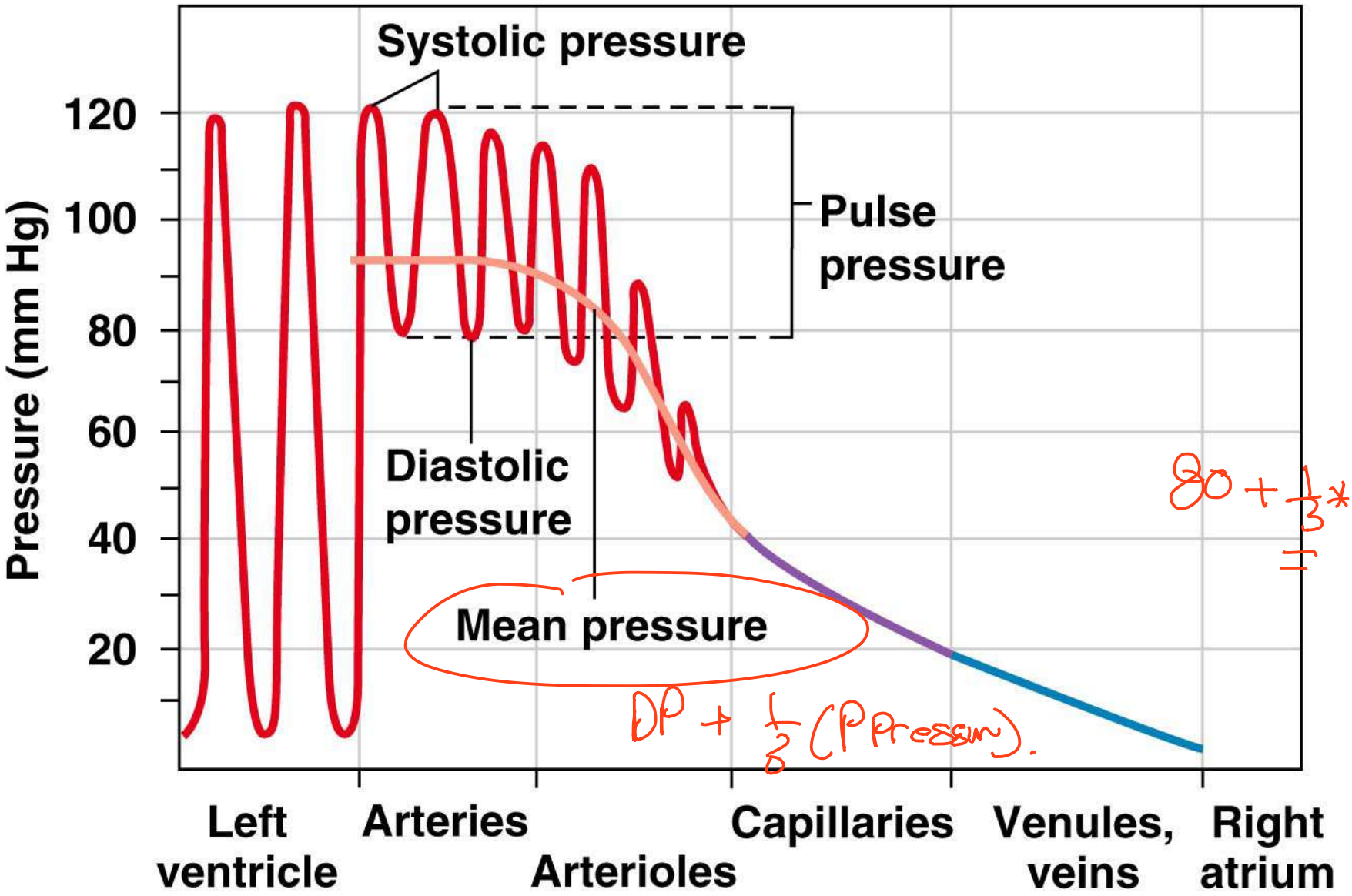
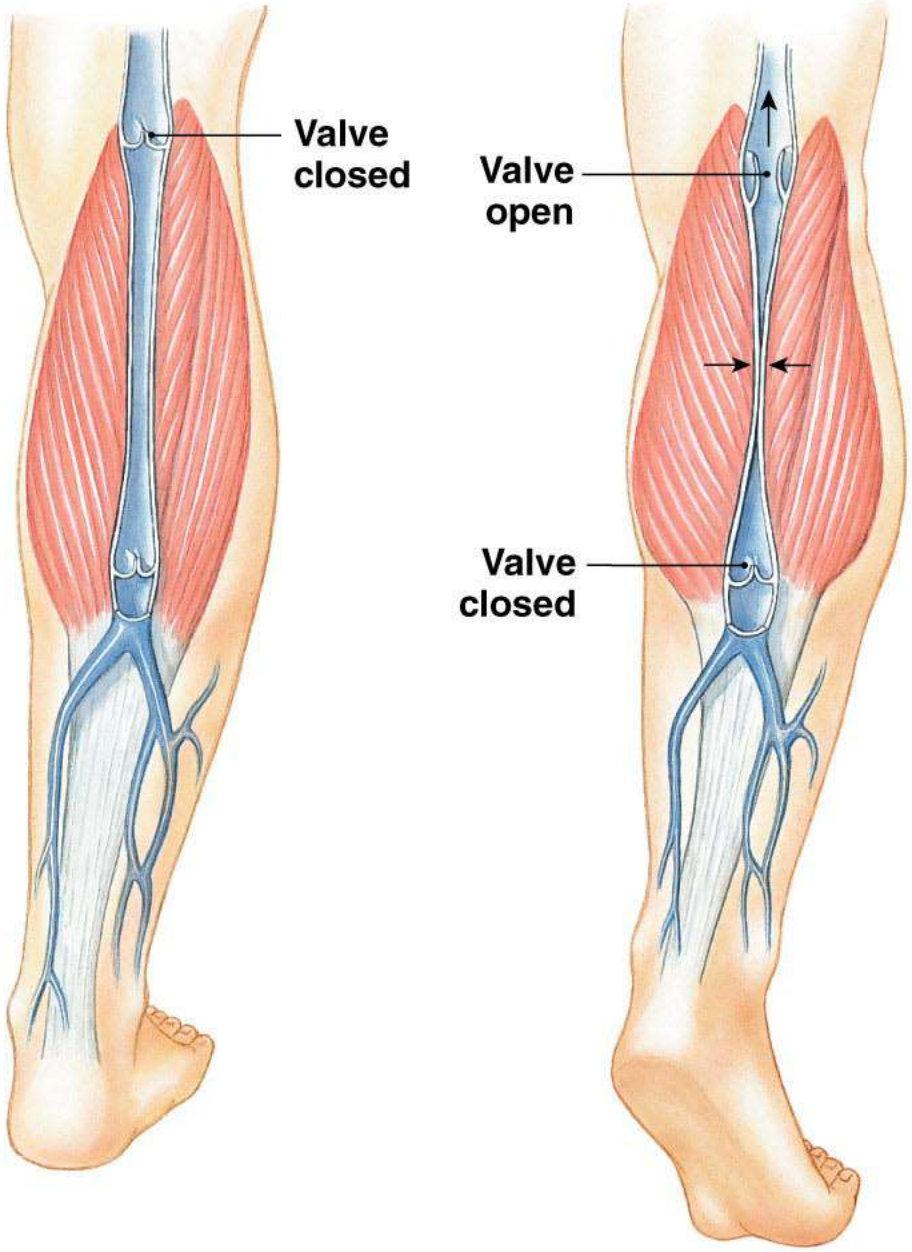


Figure 15-5

Valves in the veins prevent backflow of blood.



When the skeletal muscles compress the veins, they force blood toward the heart (the skeletal muscle pump).

Figure 15-6

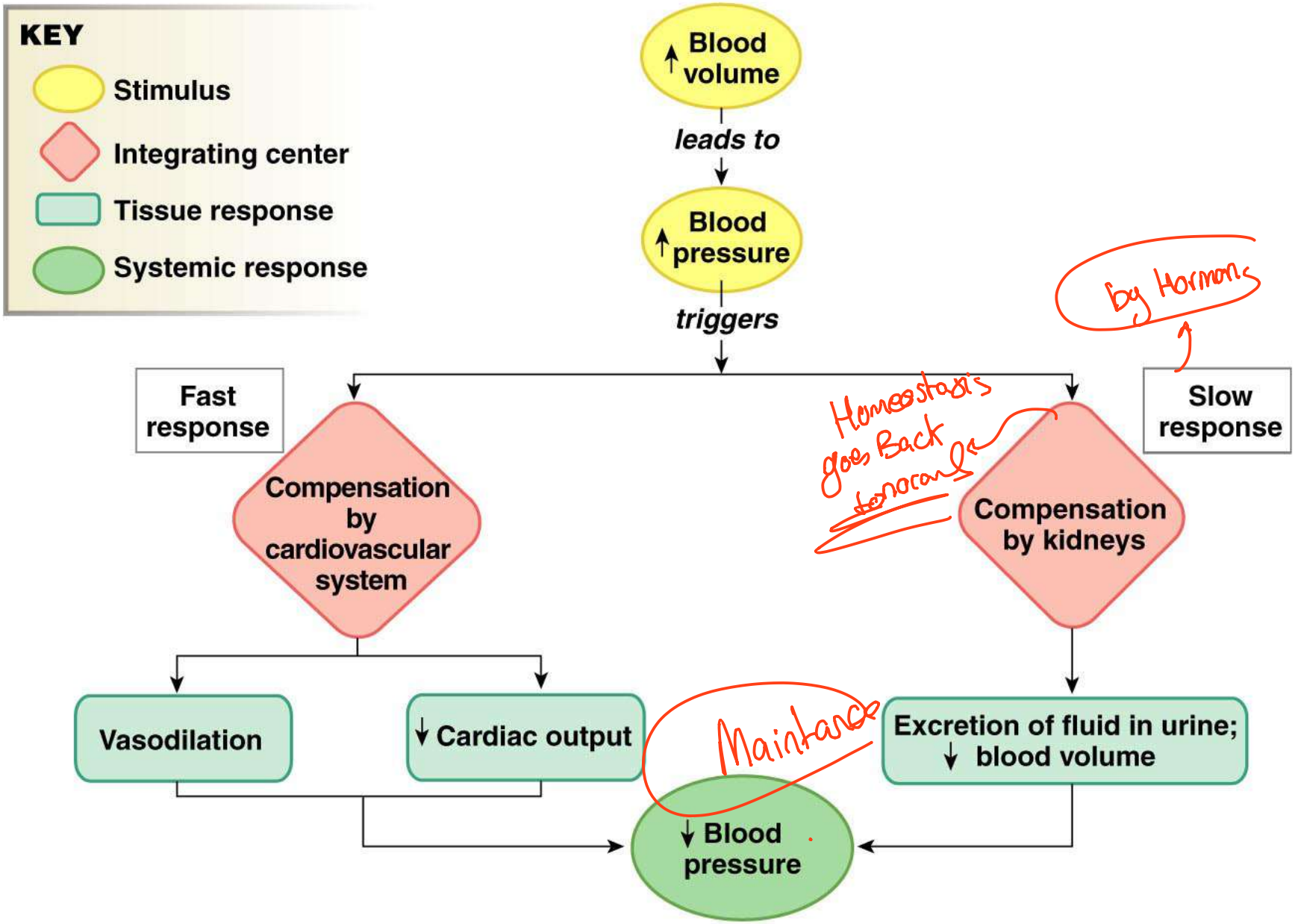


Figure 15-9

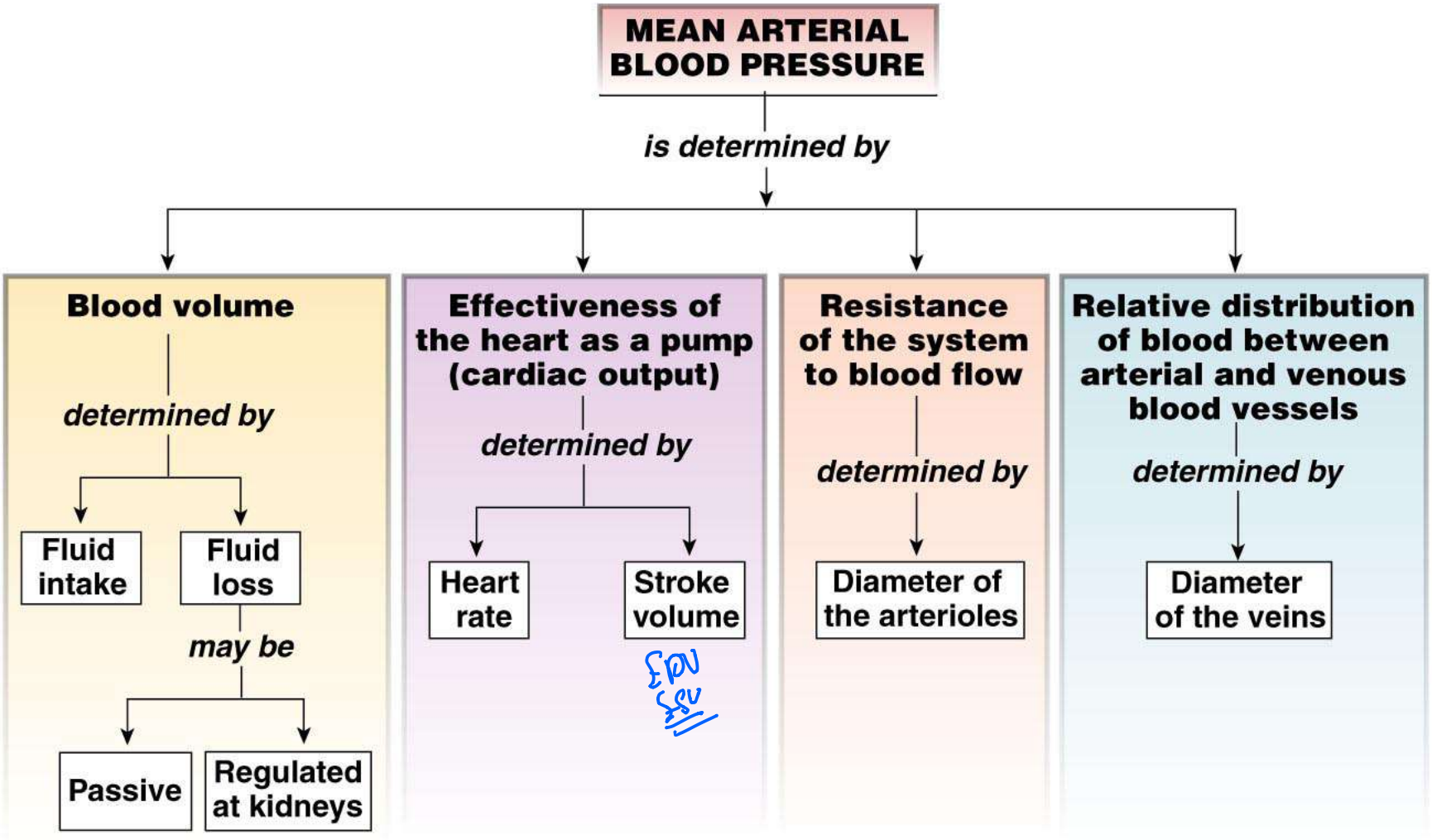


Figure 15-10

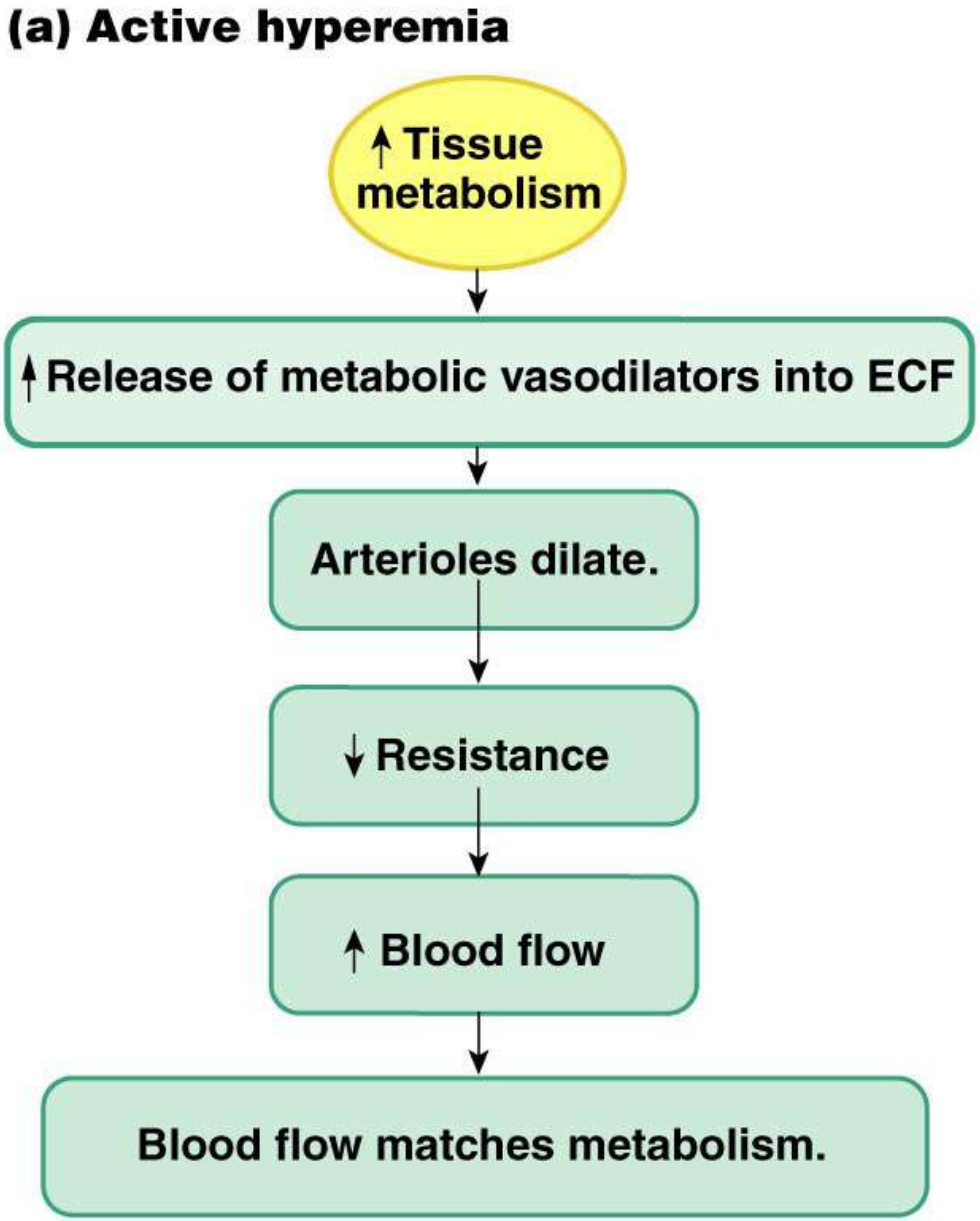


Figure 15-11a

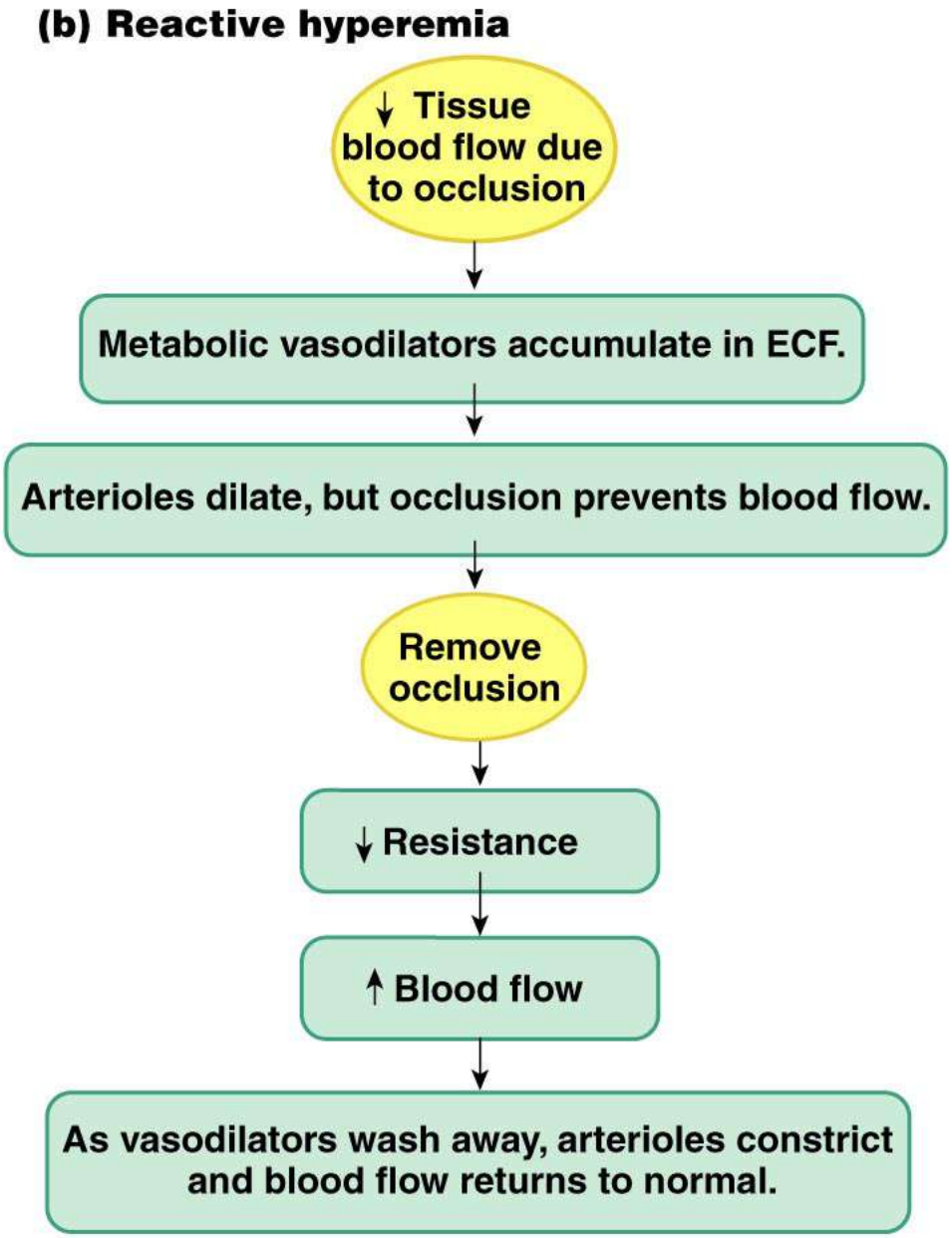


Figure 15-11b

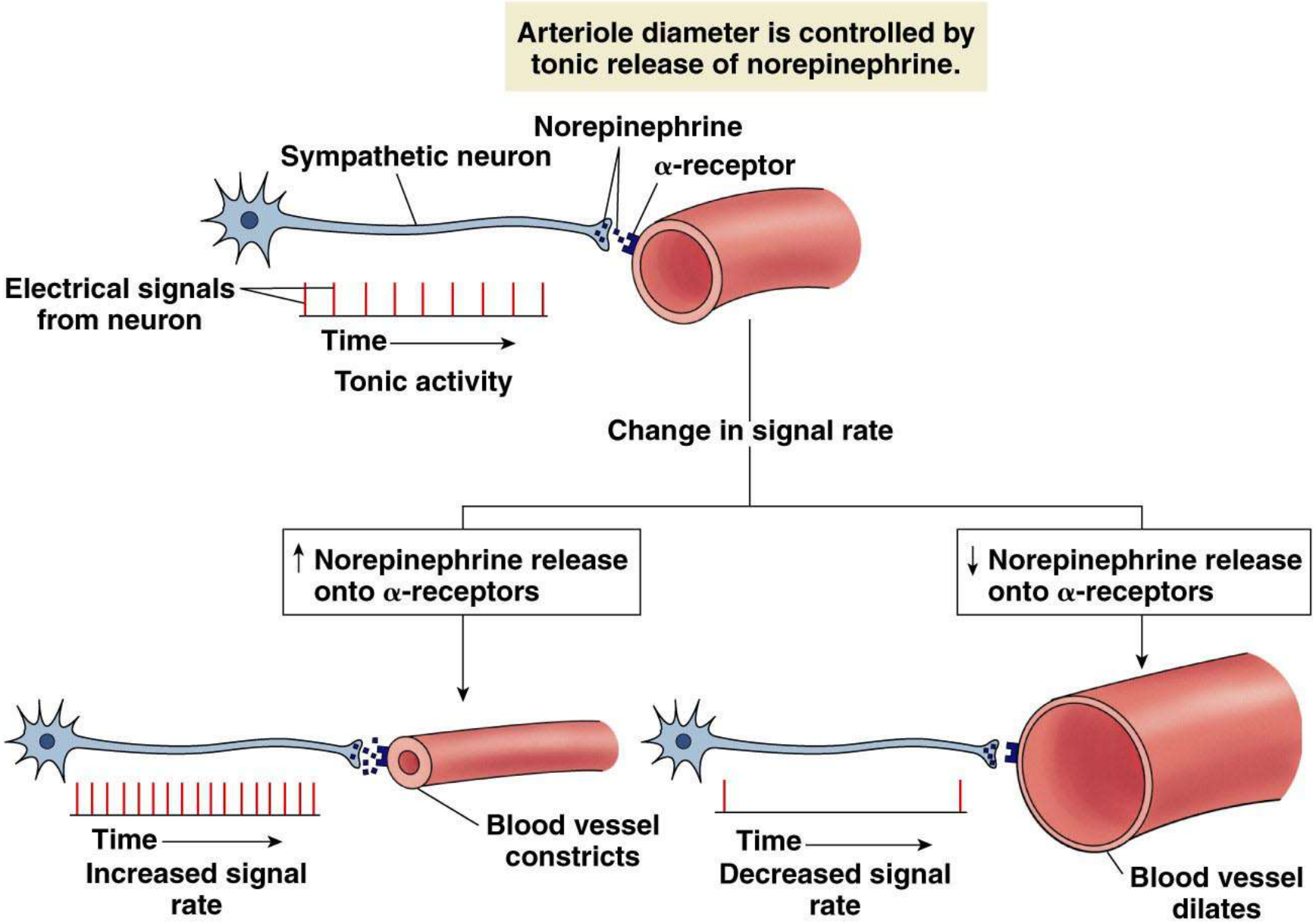


Figure 15-12

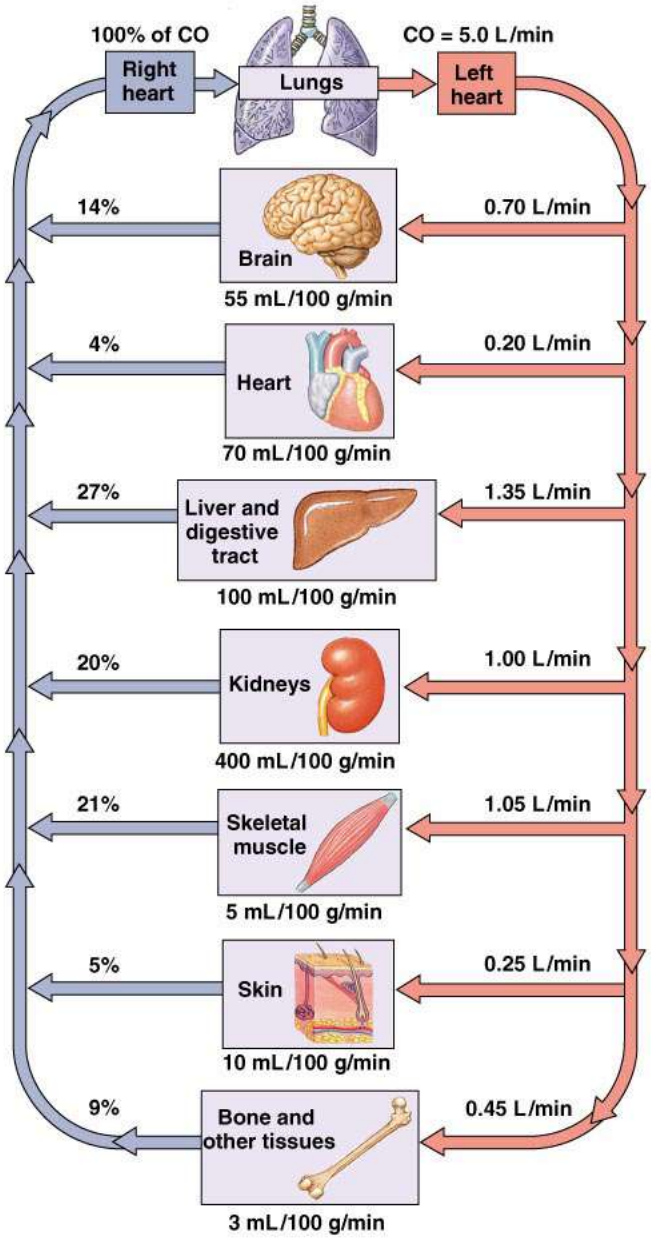
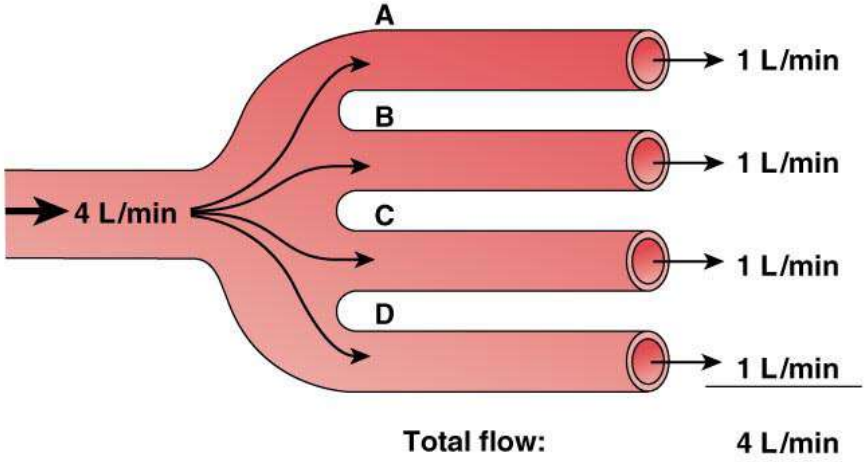


Figure 15-13

(a) Blood flow through four identical vessels (A–D) is equal. Total flow into vessels equals total flow out.



(b) When vessel B constricts, resistance of B increases and flow through B decreases. Flow diverted from B is divided among the lower-resistance vessels A, C, and D.

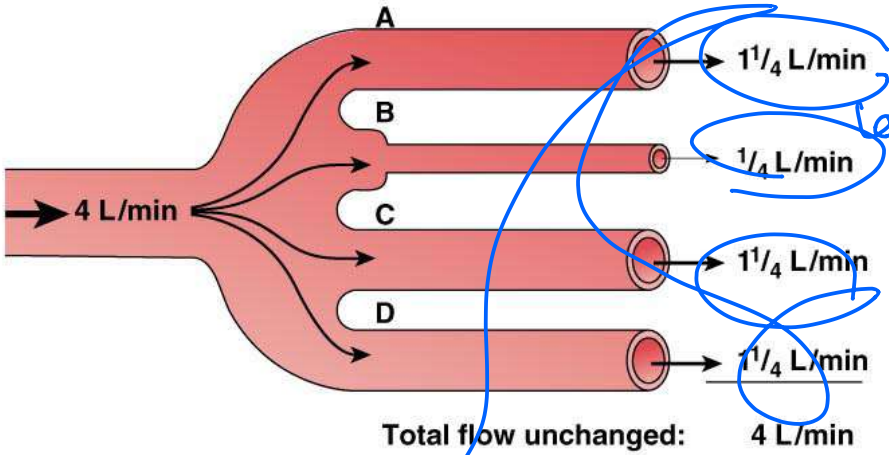
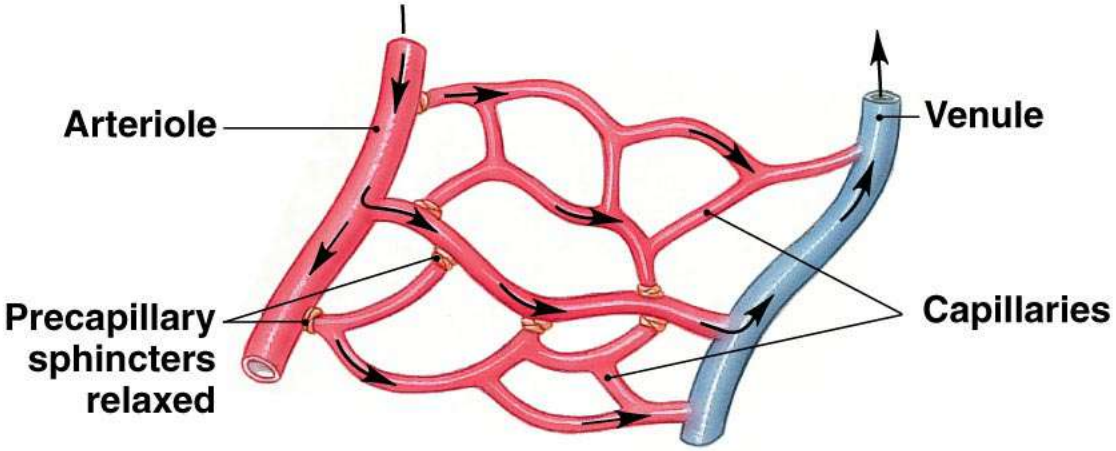
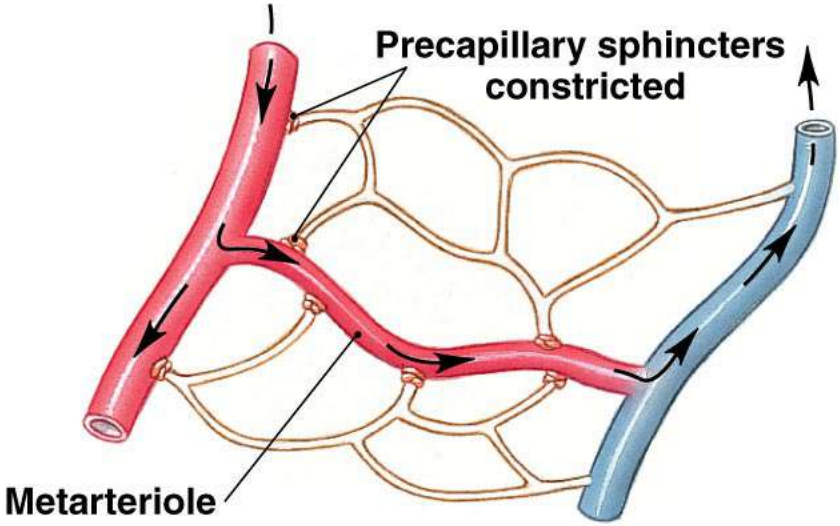


Figure 15-14 - Overview

(a) When precapillary sphincters are relaxed, blood flows through all capillaries in the bed.



(b) If precapillary sphincters constrict, blood flow bypasses capillaries completely and flows through metarterioles.



faster

Figure 15-15 - Overview

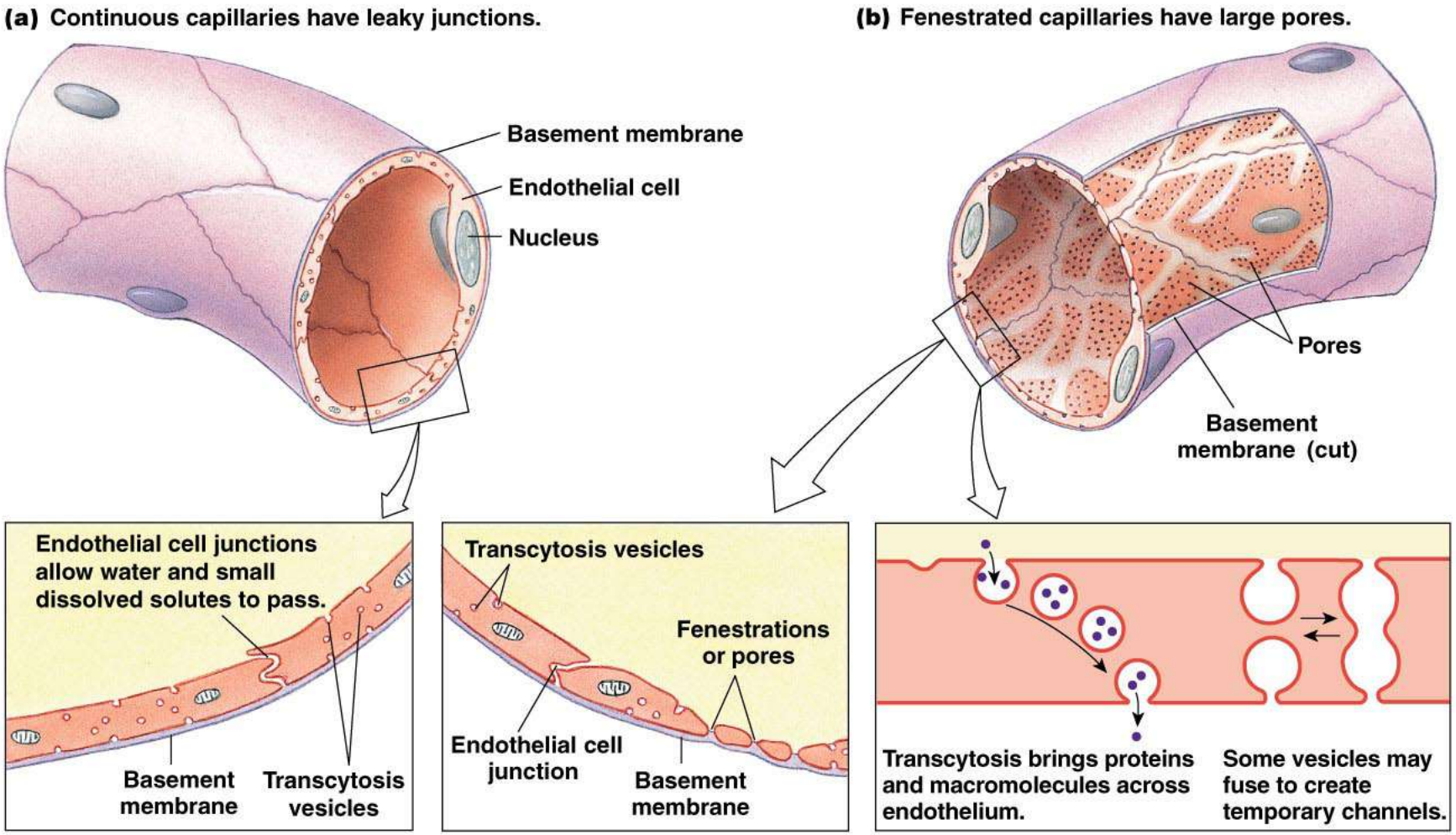


Figure 15-16 - Overview

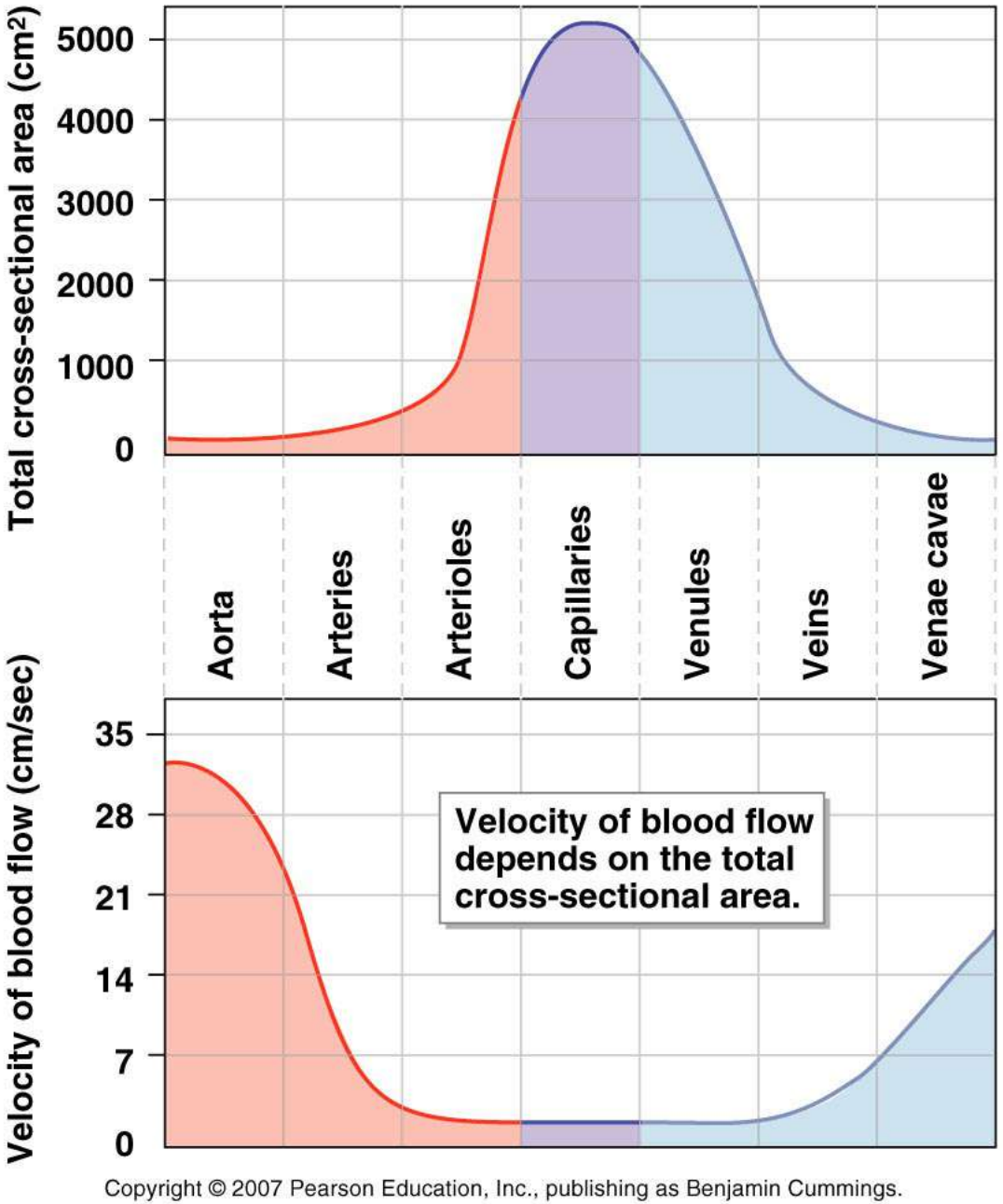


Figure 15-17

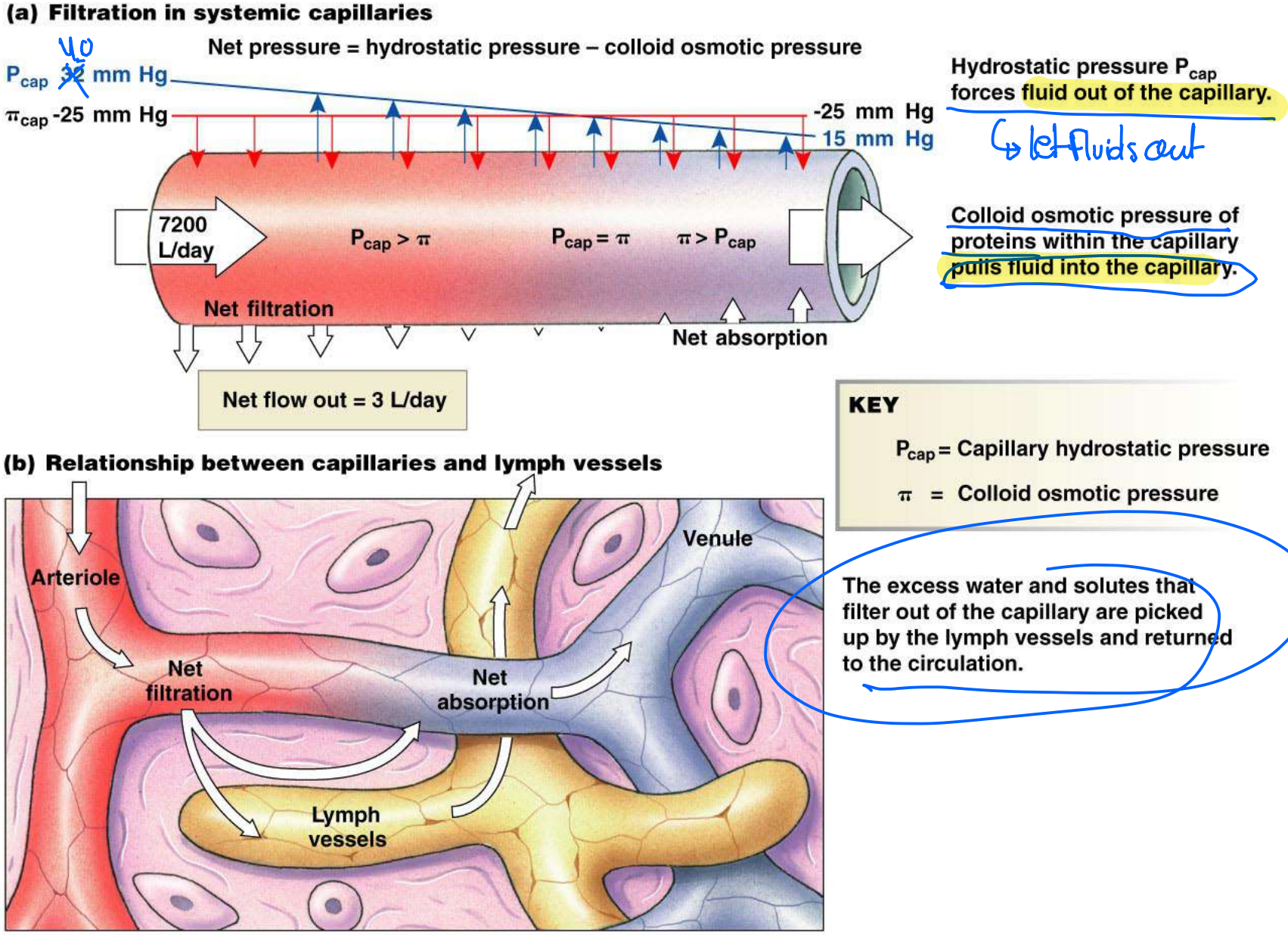


Figure 15-18 - Overview

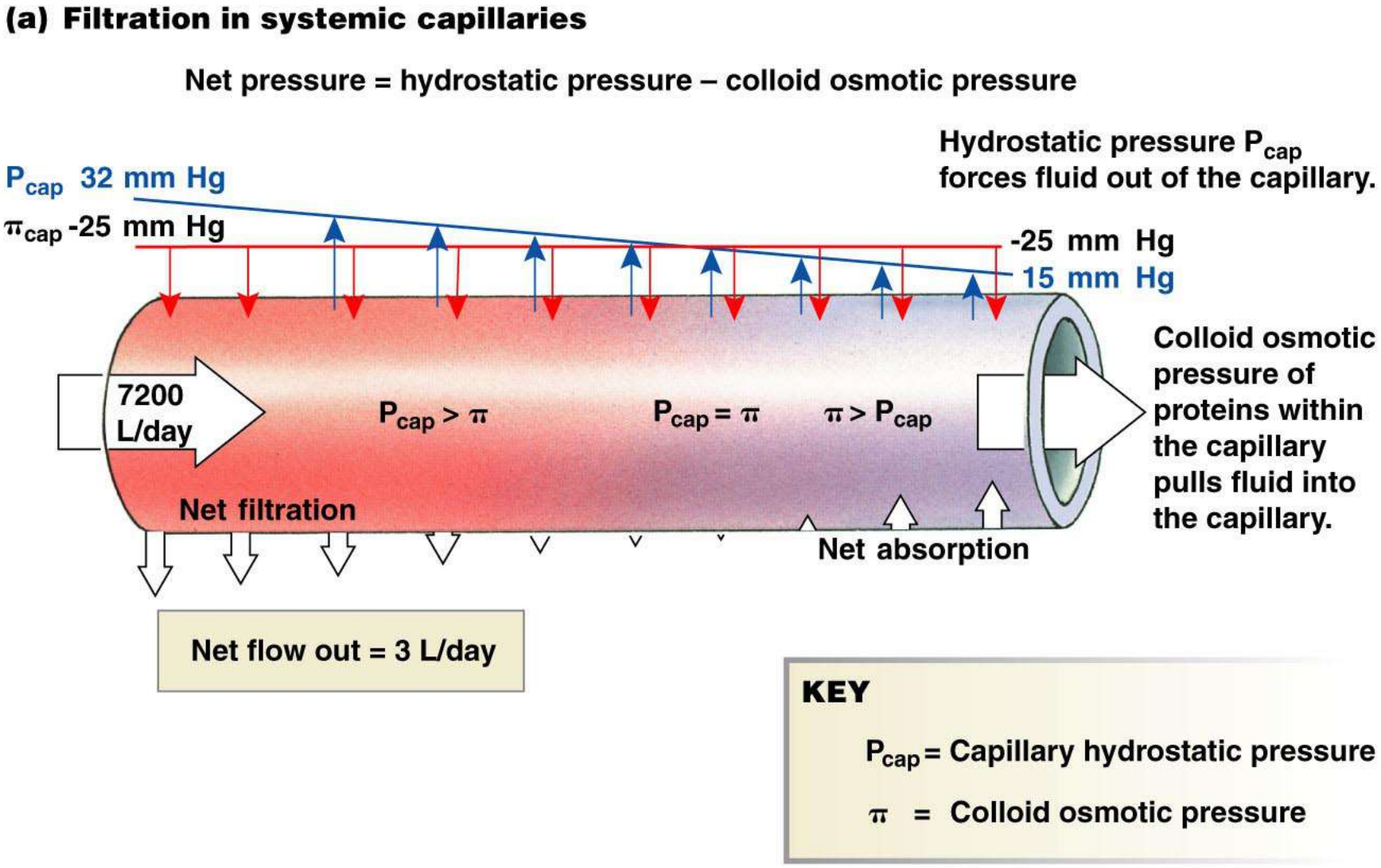
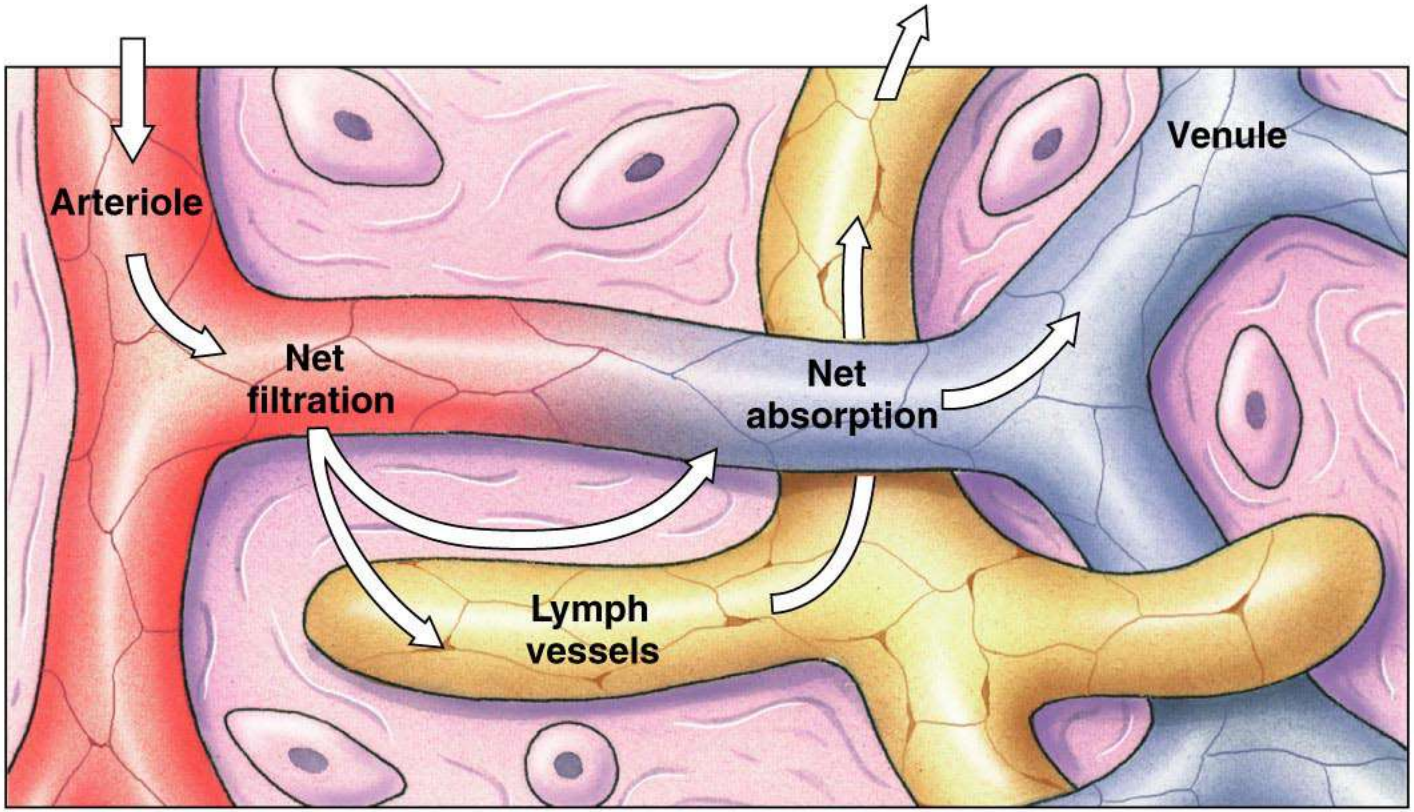


Figure 15-18a

(b) Relationship between capillaries and lymph vessels



The excess water and solutes that filter out of the capillary are picked up by the lymph vessels and returned to the circulation.

Figure 15-18b

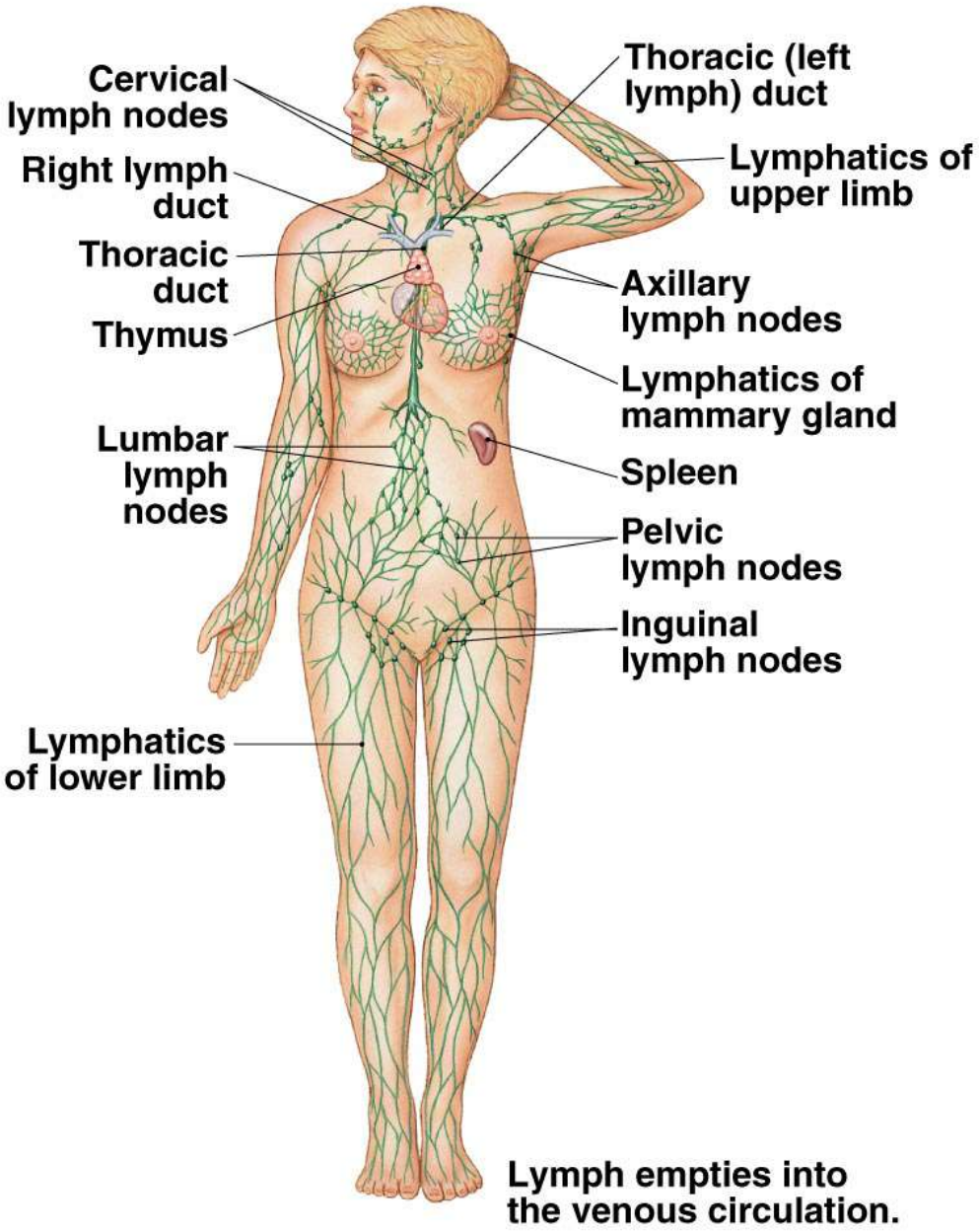


Figure 15-19

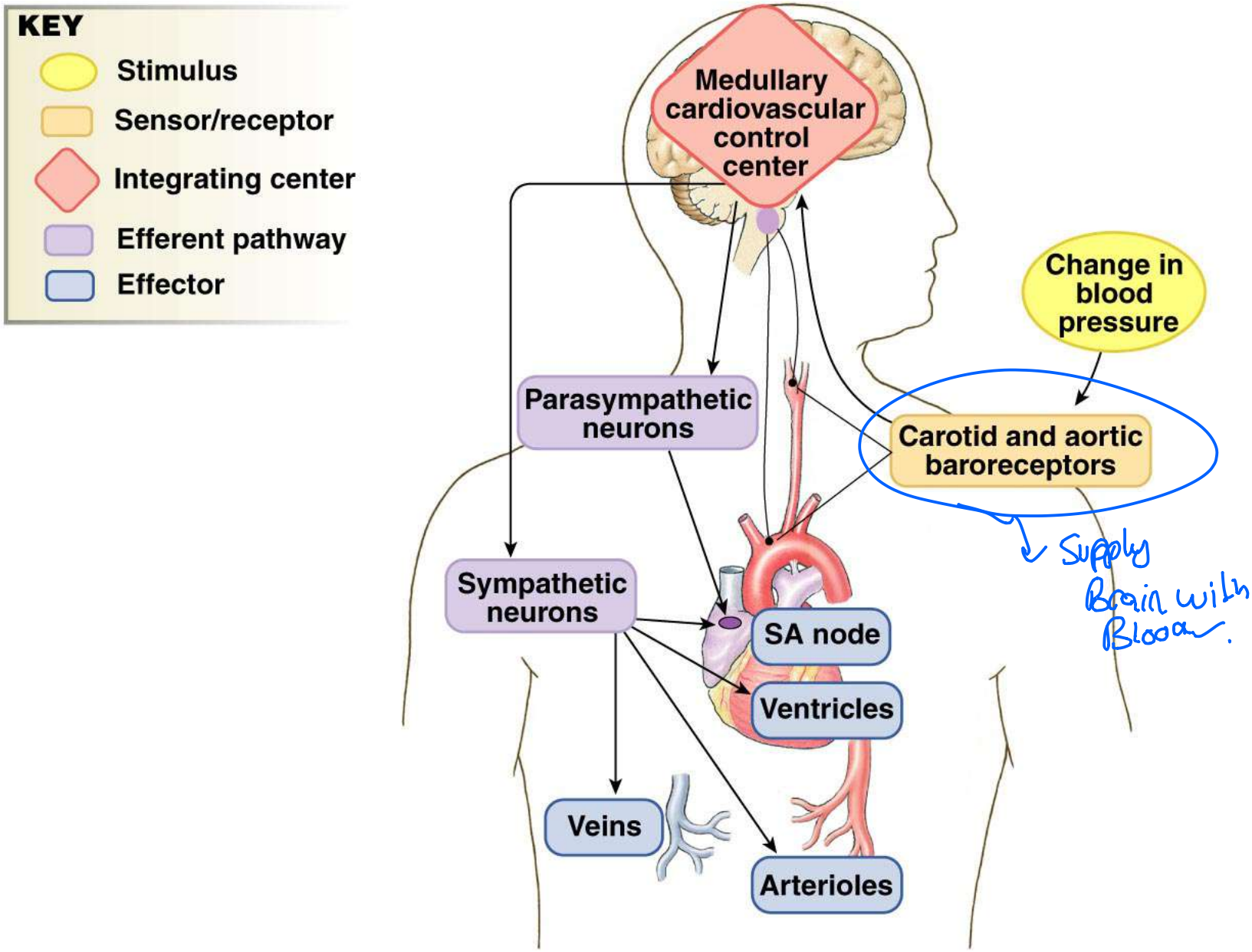


Figure 15-21

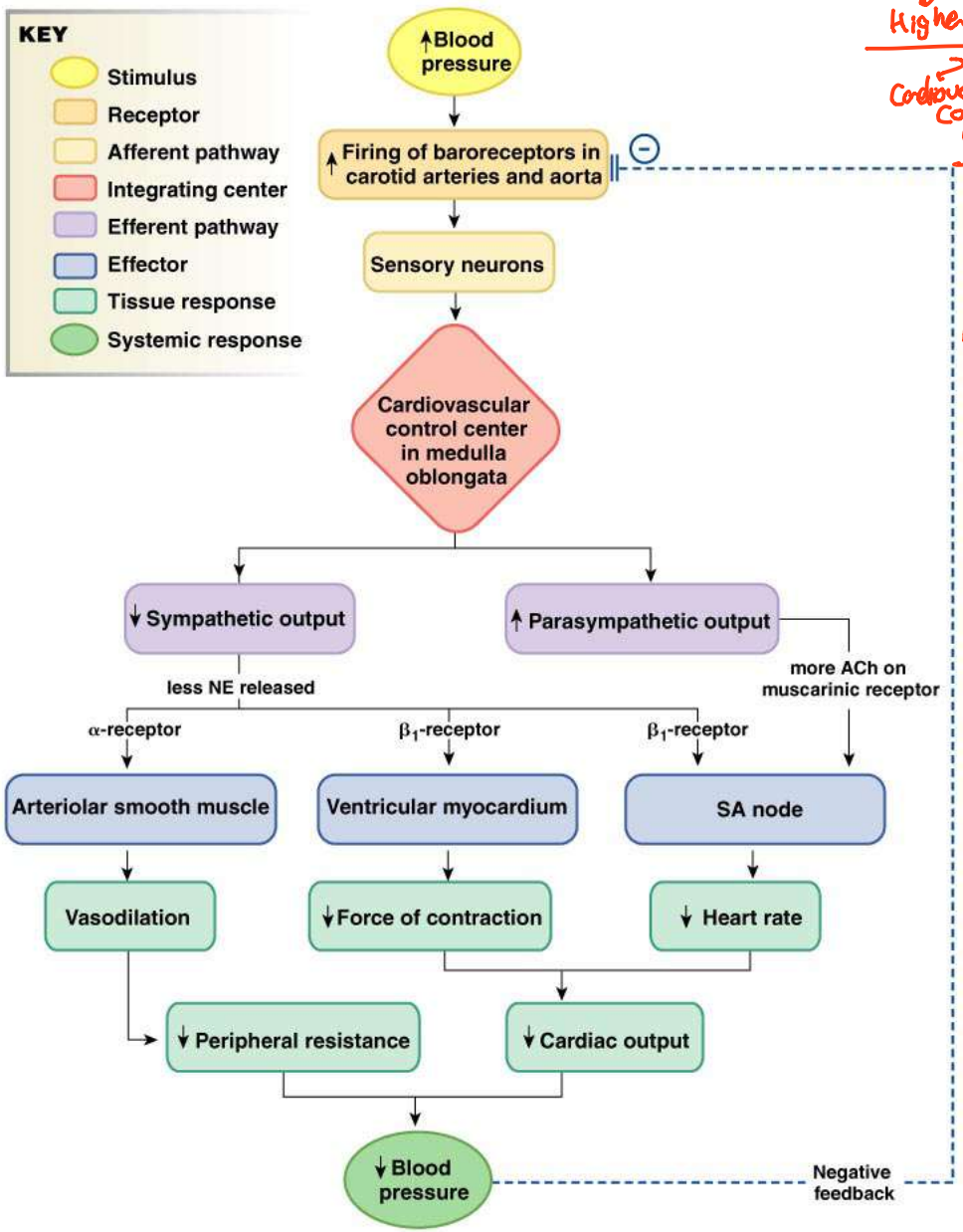


Figure 15-22

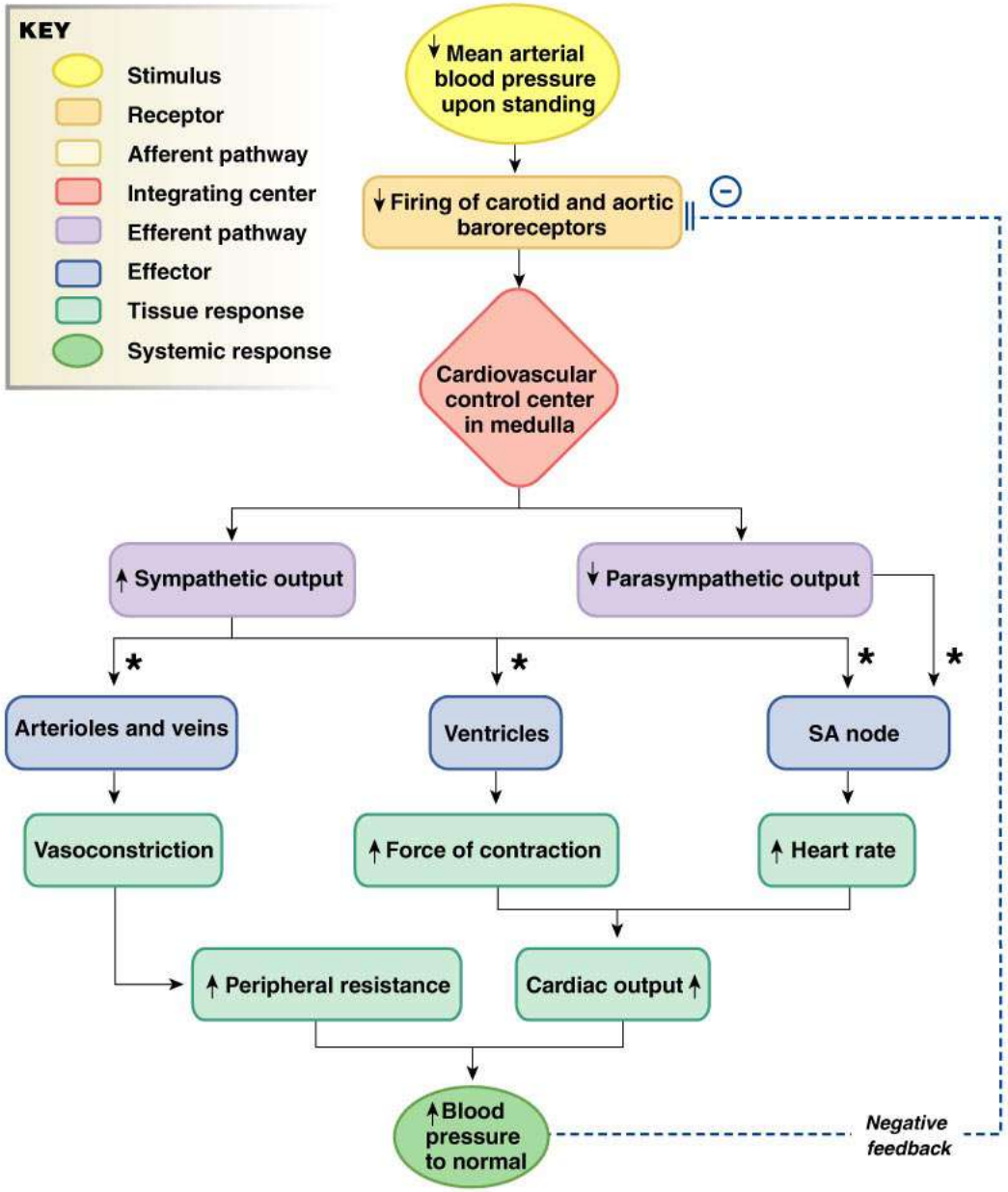


Figure 15-23

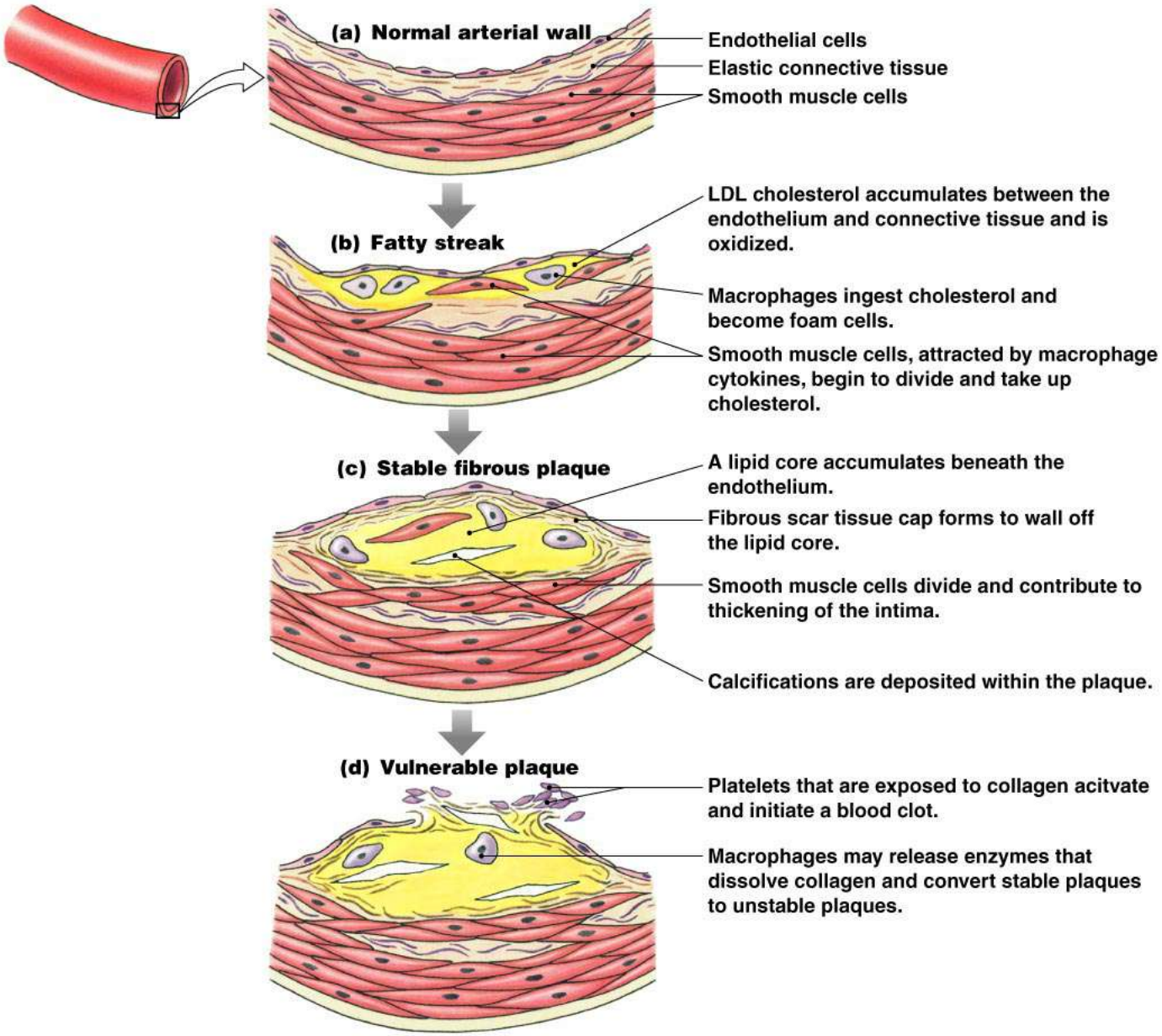


Figure 15-24 - Overview

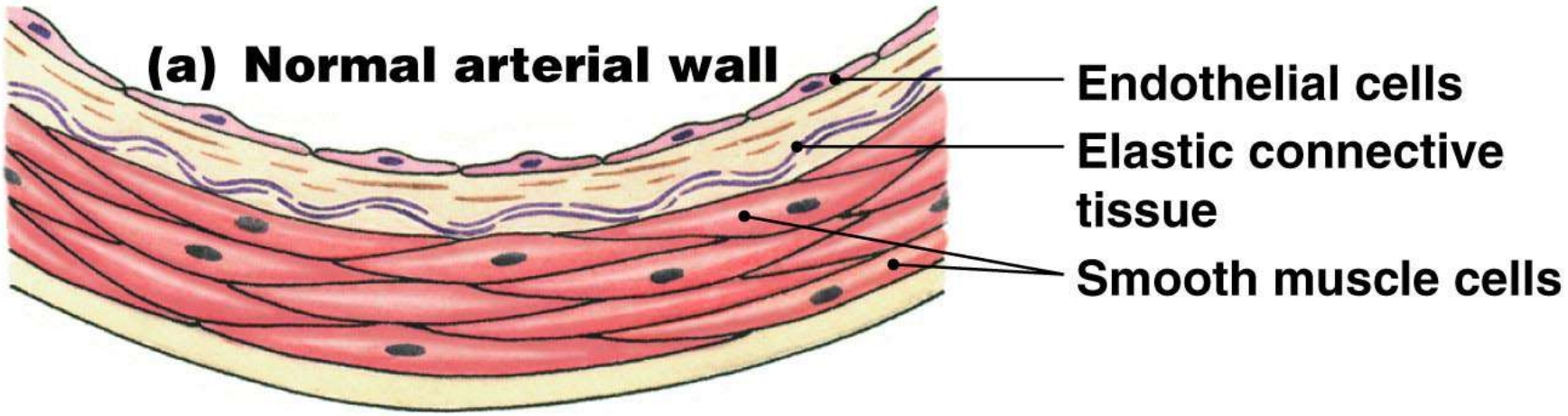


Figure 15-24a

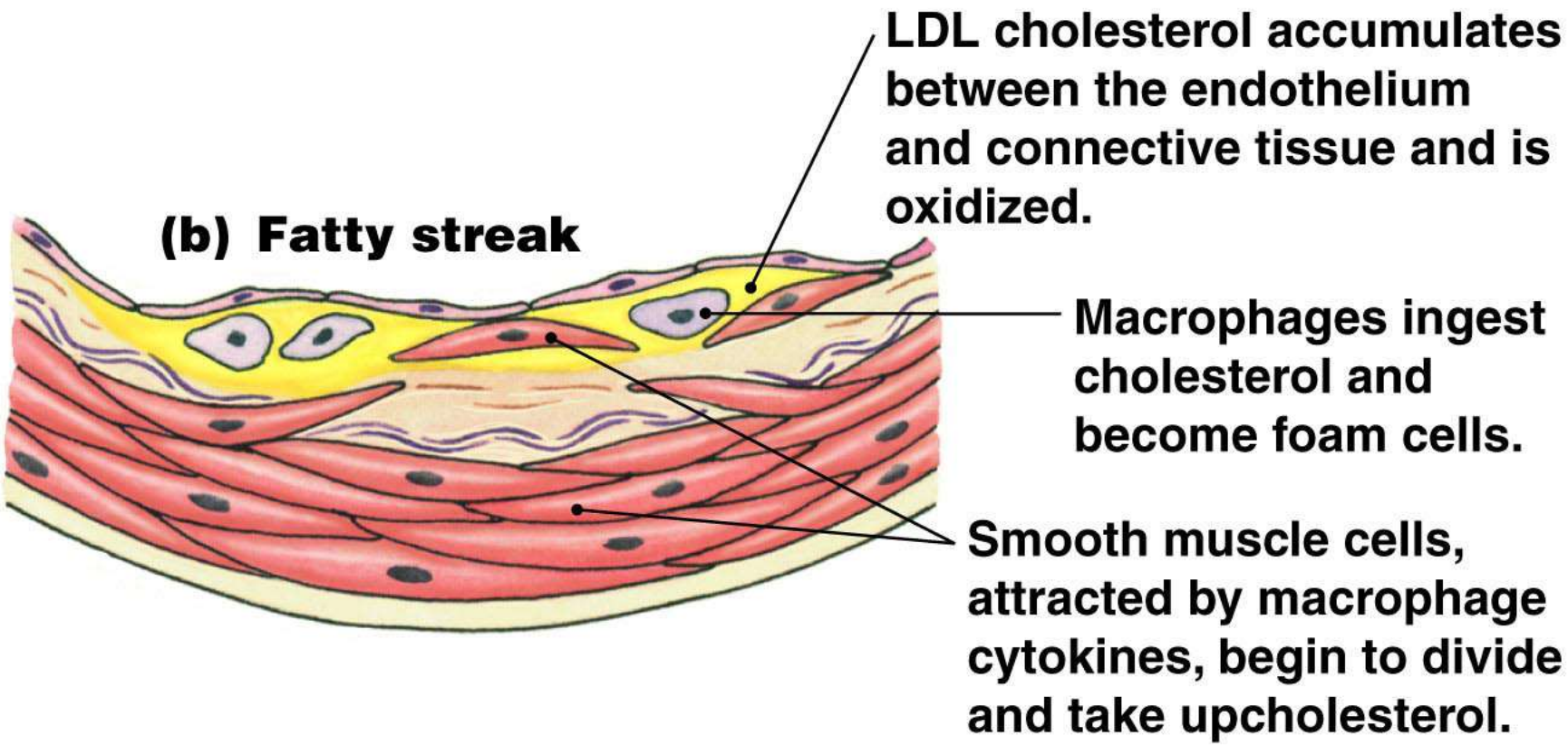


Figure 15-24b

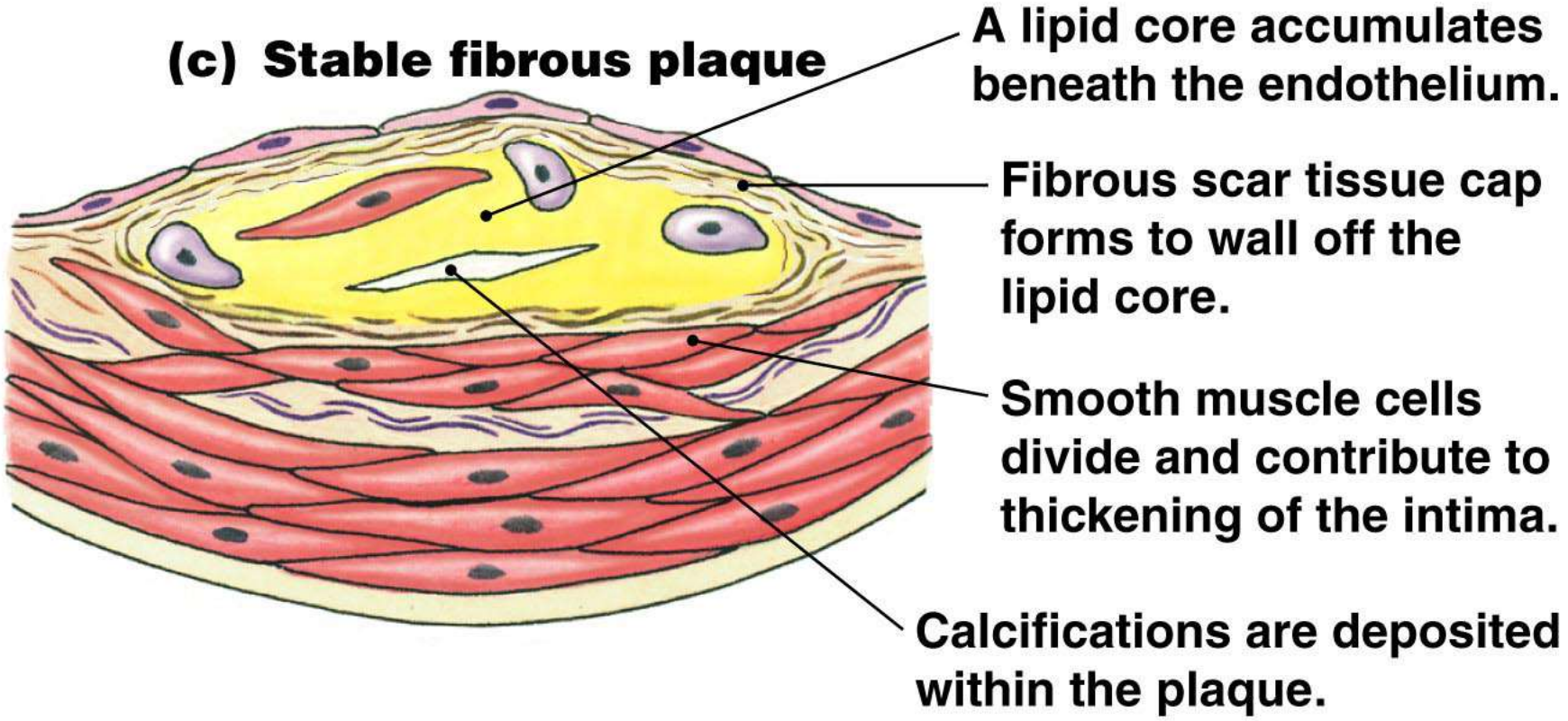


Figure 15-24c

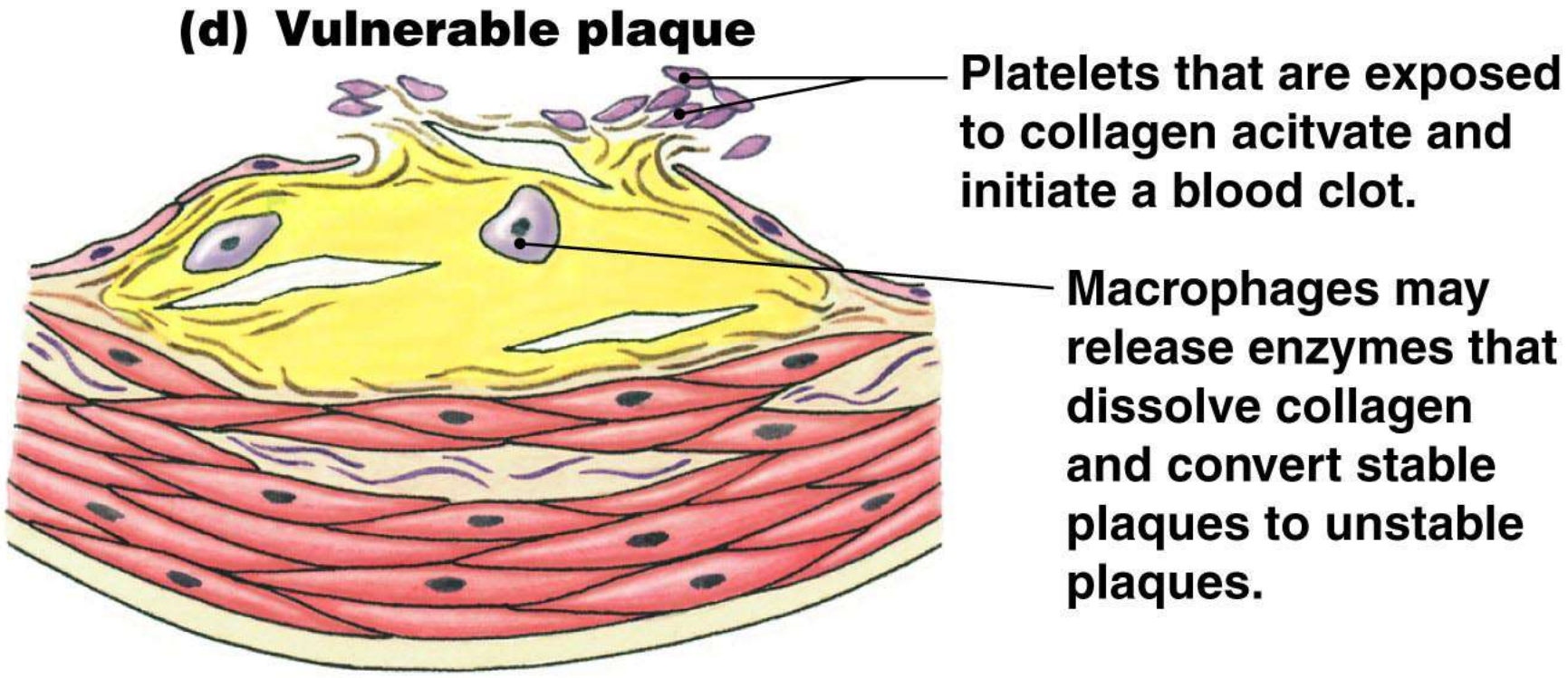


Figure 15-24d