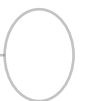
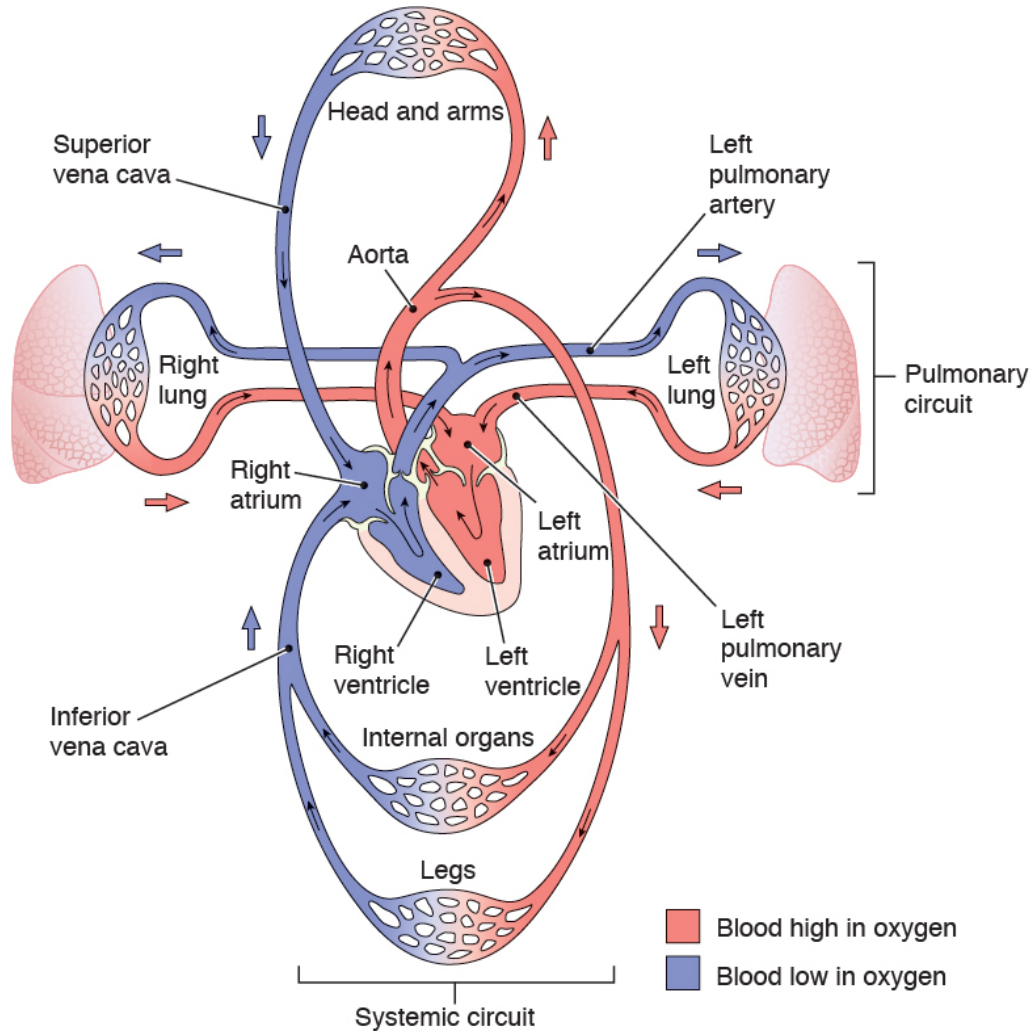
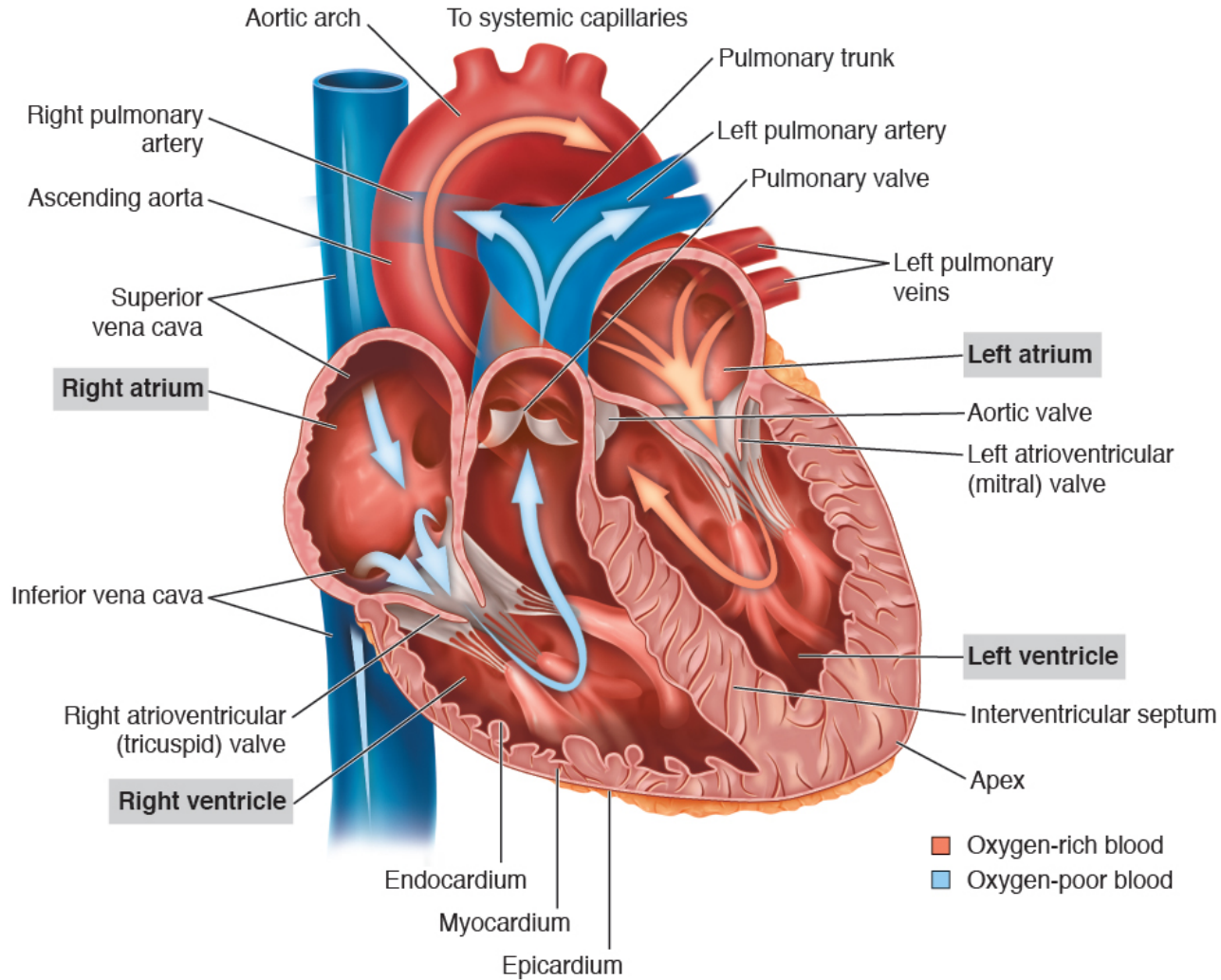


Cardiovascular and Lymphatic Systems Image Bank



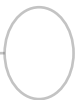


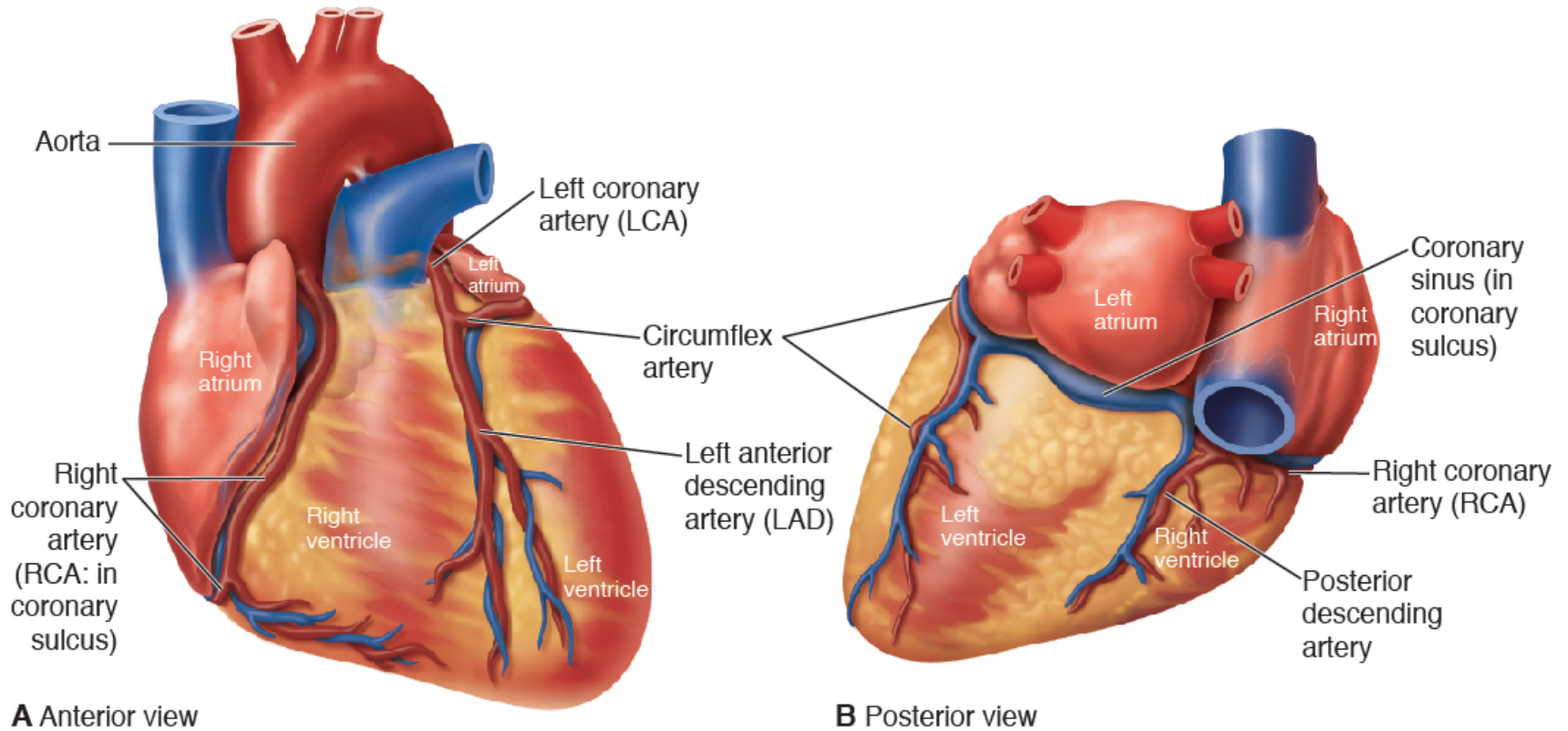
The cardiovascular system. The pulmonary circuit carries blood to and from the lungs; the systemic circuit carries blood to and from all other parts of the body.



The heart and great vessels. The arrows show the direction of blood flow through the heart. The right heart has blood low in oxygen; the left heart has blood high in oxygen.

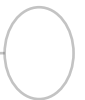
McConnell T, Hull K. Human Form, Human Function. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.

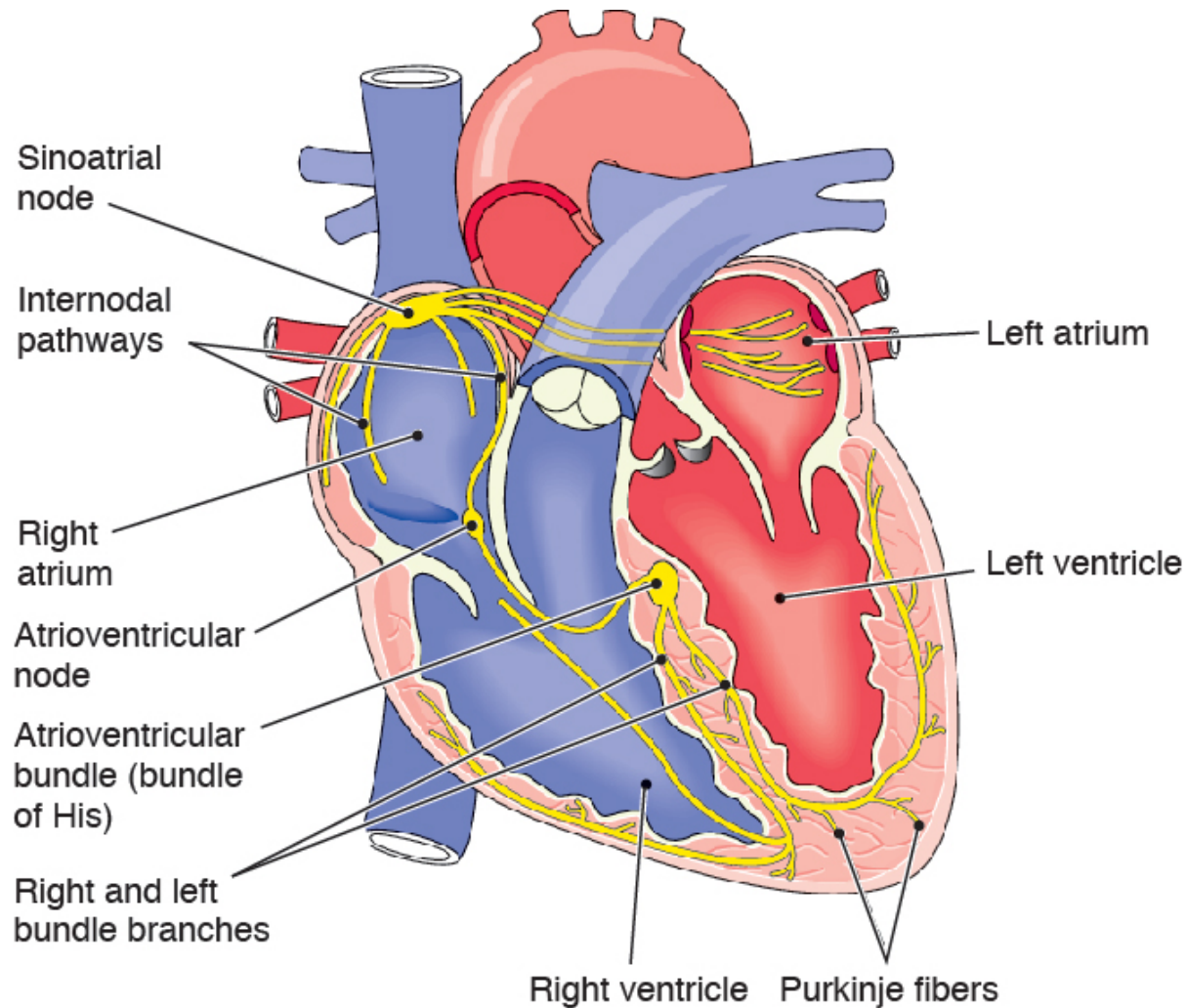




Blood vessels that supply the myocardium. Coronary arteries and cardiac veins constitute the heart's circulatory pathways. A. Anterior view. B. Posterior view.

Cohen B, Hull K. Memmler's The Human Body in Health and Disease. 14th ed. Baltimore, MD: Lippincott Williams & Wilkins; 2019.

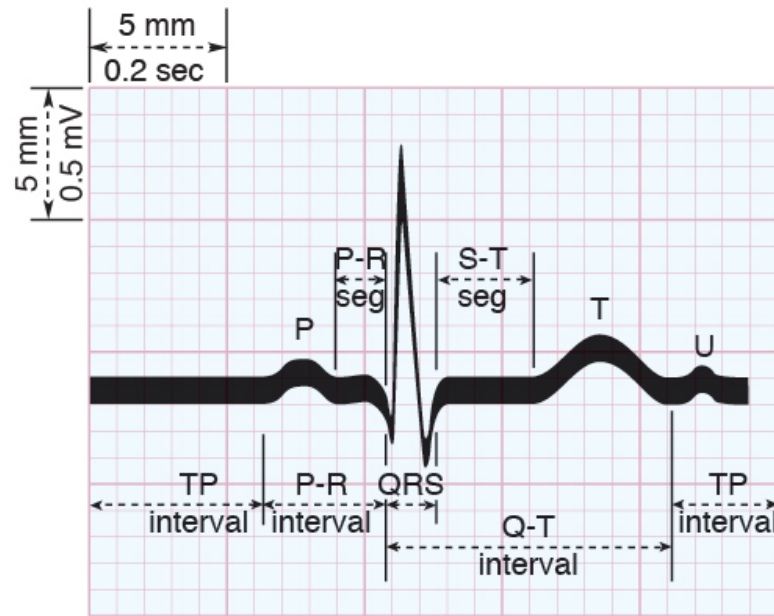




The heart's electrical conduction system. Impulses travel from the sinoatrial (SA) node to the atrioventricular (AV) node, then to the atrioventricular bundle, bundle branches, and Purkinje fibers. Internodal pathways carry impulses throughout the atria.



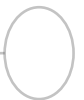
A

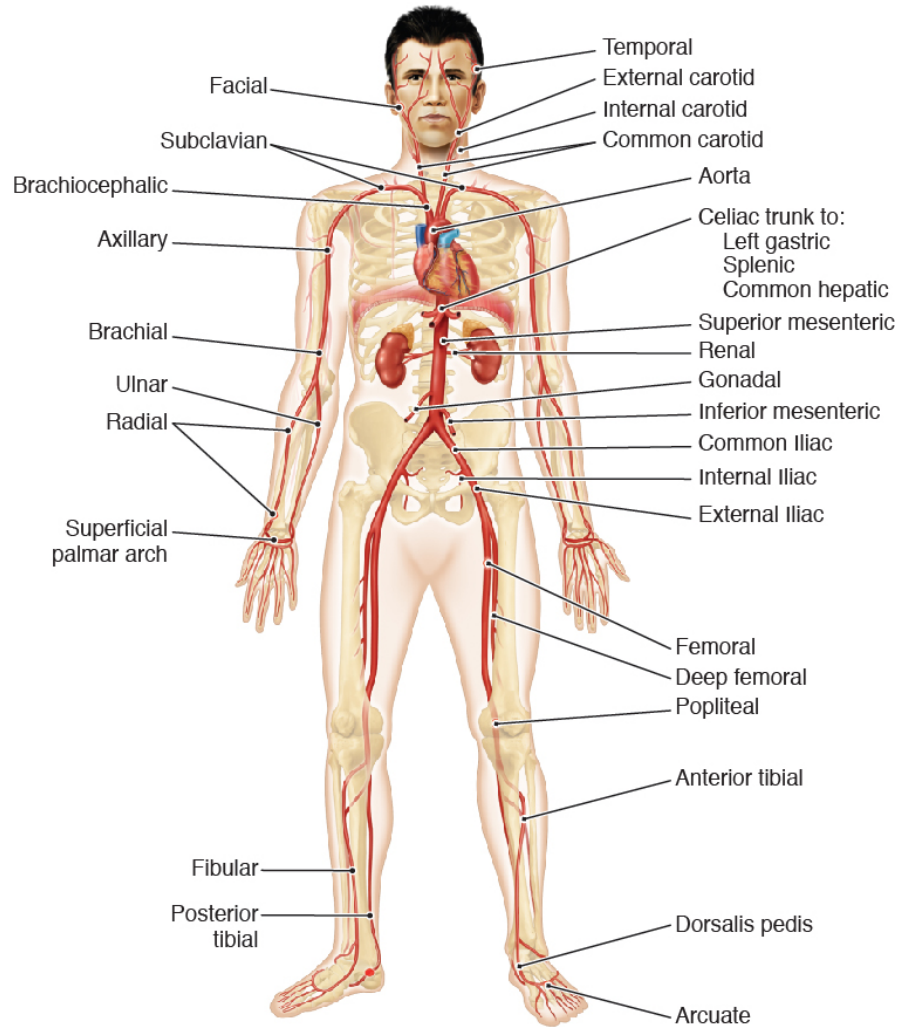


B

Electrocardiography (ECG). A. ECG tracing showing a normal sinus rhythm. B. Components of a normal ECG tracing. Shown are the P, QRS, T, and U waves, which represent electrical activity in different parts of the heart. Intervals measure from one wave to the next; segments are smaller components of the tracing.

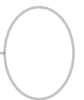
Smeltzer SC, et al. Medical-Surgical Nursing. 12th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2010.

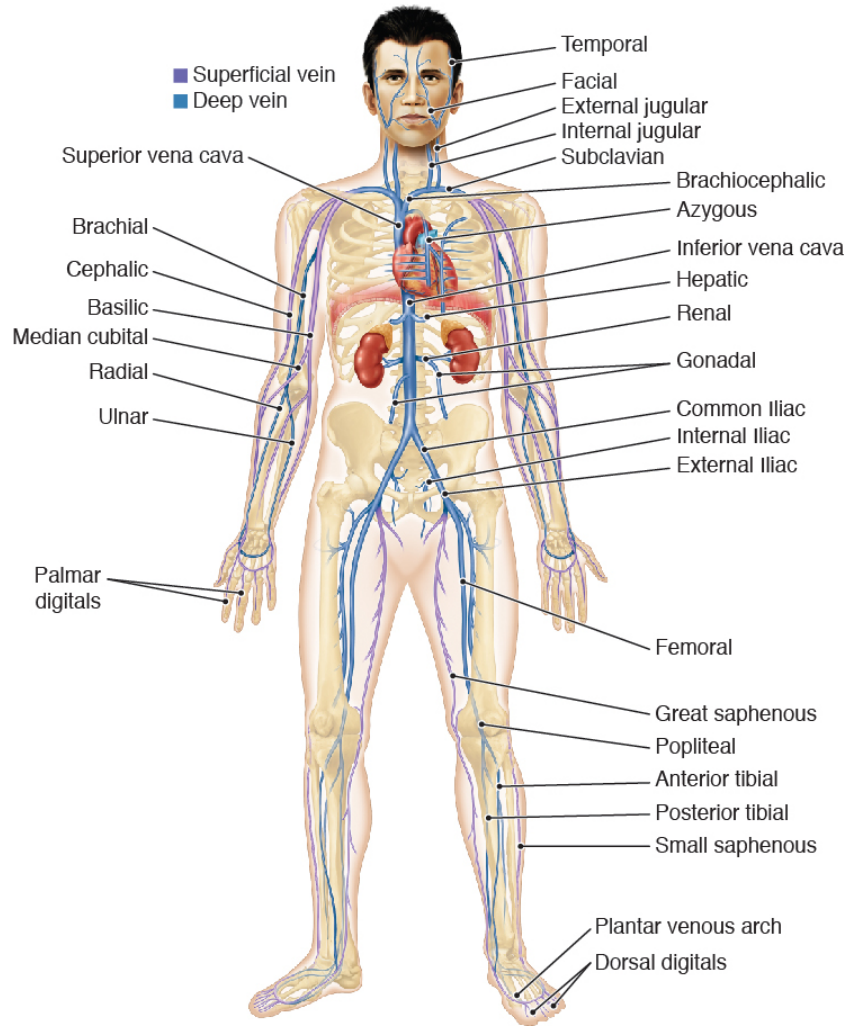




Principal systemic arteries.

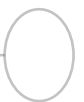
McConnell T, Hull K. Human Form, Human Function. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.

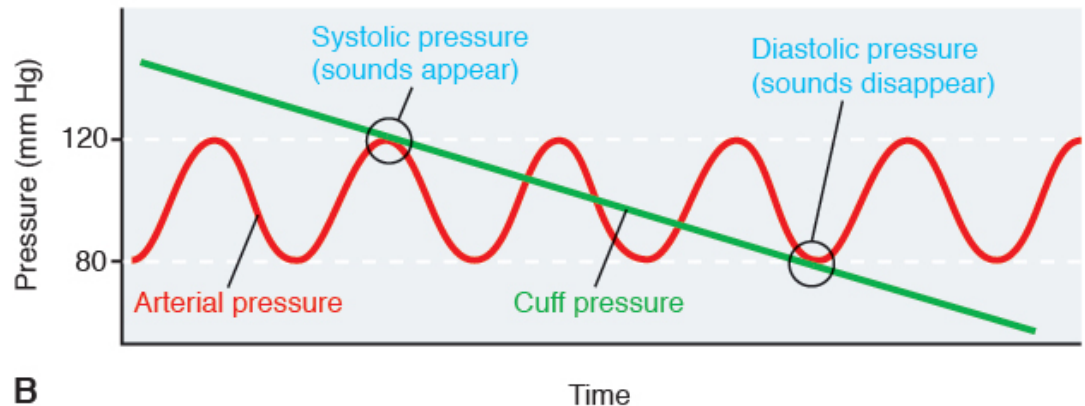
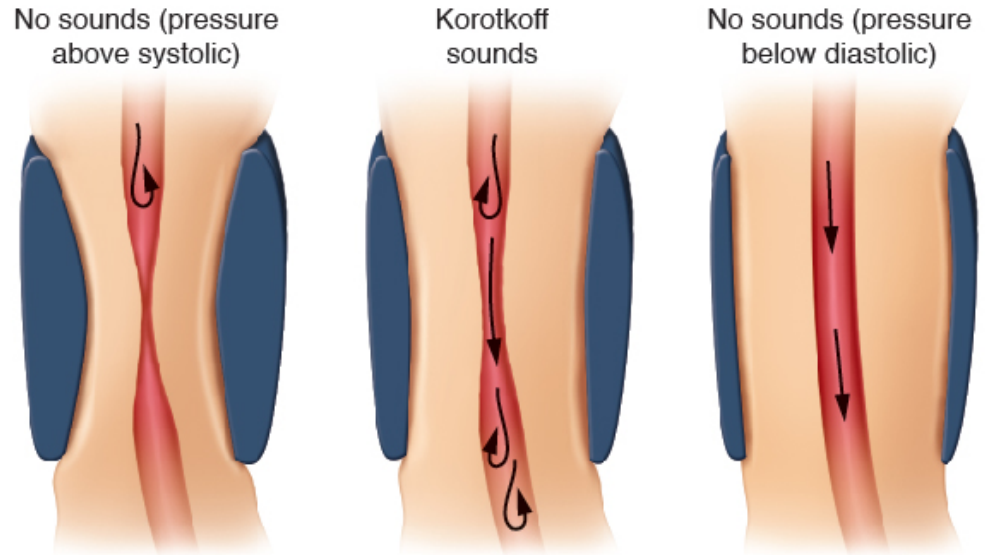
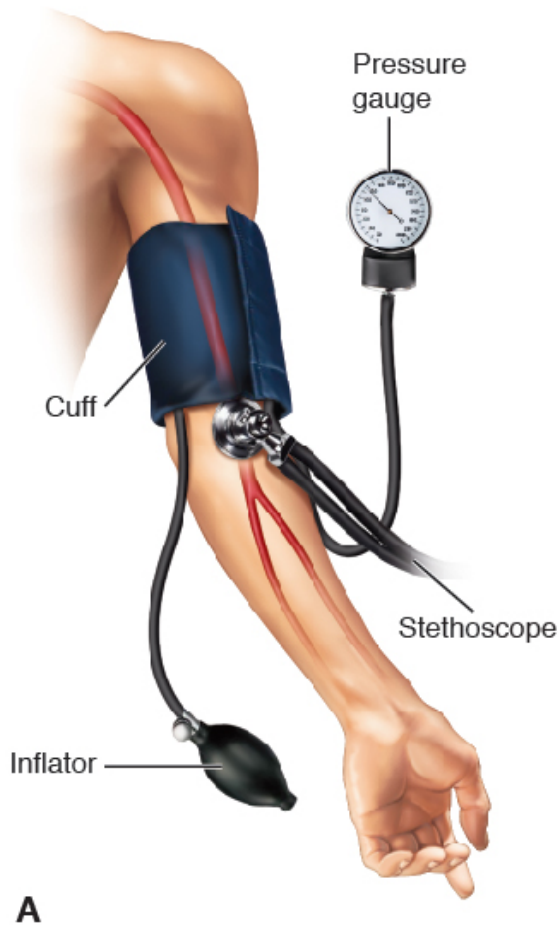




Principal systemic veins.

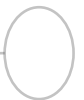
McConnell T, Hull K. Human Form, Human Function. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.





Measurement of blood pressure. A. A sphygmomanometer, or blood pressure cuff set to measure pressure in the left brachial artery. B. As the clinician lowers the cuff pressure, Korotkoff sounds begin at the systolic pressure and disappear at the diastolic pressure.

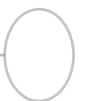
McConnell T, Hull K. Human Foundations. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.



Roots for the Heart

Root	Meaning	Example	Definition of Example
cardi/o	heart	cardiomyopathy* <i>kar-de-o-mi-OP-ah-the</i>	any disease of the heart muscle
atri/o	atrium	atriotomy <i>a-tre-OT-o-me</i>	surgical incision of an atrium
ventricul/o	cavity, ventricle	supraventricular <i>su-prah-ven-TRIK-u-lar</i>	above a ventricle
valv/o, valvul/o	valve	valvulotome <i>VAL-vu-lo-tome</i>	instrument for incising a valve

*Preferred over myocardopathy.

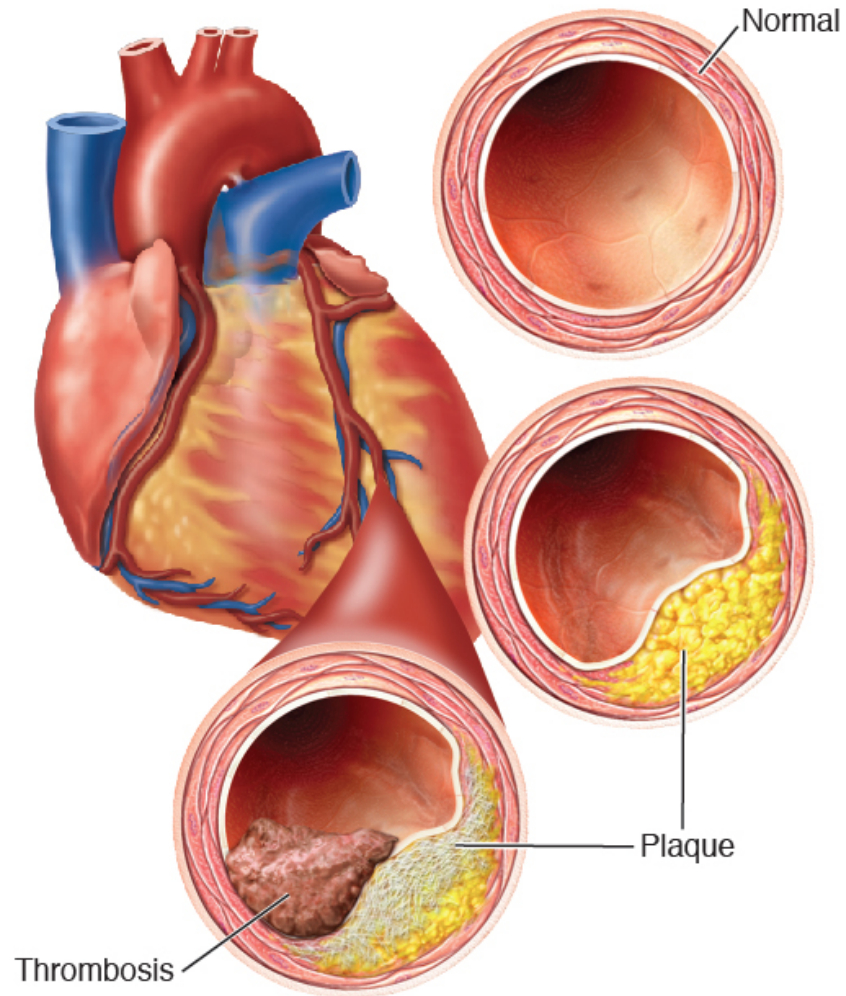


Roots for the Blood Vessels

Root	Meaning	Example	Definition of Example
angi/o*	vessel	angiography <i>an-je-OG-rah-fe</i>	x-ray imaging of a vessel
vas/o, vascul/o	vessel, duct	vasospasm <i>VA-so-spazm</i>	sudden contraction of a vessel
arter/o, arteri/o	artery	endarterial <i>end-ar-TE-re-al</i>	within an artery
arteriol/o	arteriole	arteriolar <i>ar-te-re-O-lar</i>	pertaining to an arteriole
aort/o	aorta	aortoptosis <i>a-or-top-TO-sis</i>	downward displacement of the aorta
ven/o, ven/i	vein	venous <i>VE-nus</i>	pertaining to a vein
phleb/o	vein	phlebotomy <i>fleh-BOT-o-me</i>	incision of a vein to withdraw blood

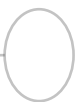
*The root angi/o usually refers to a blood vessel but is used for other types of vessels as well. Hemangi/o refers specifically to a blood vessel.

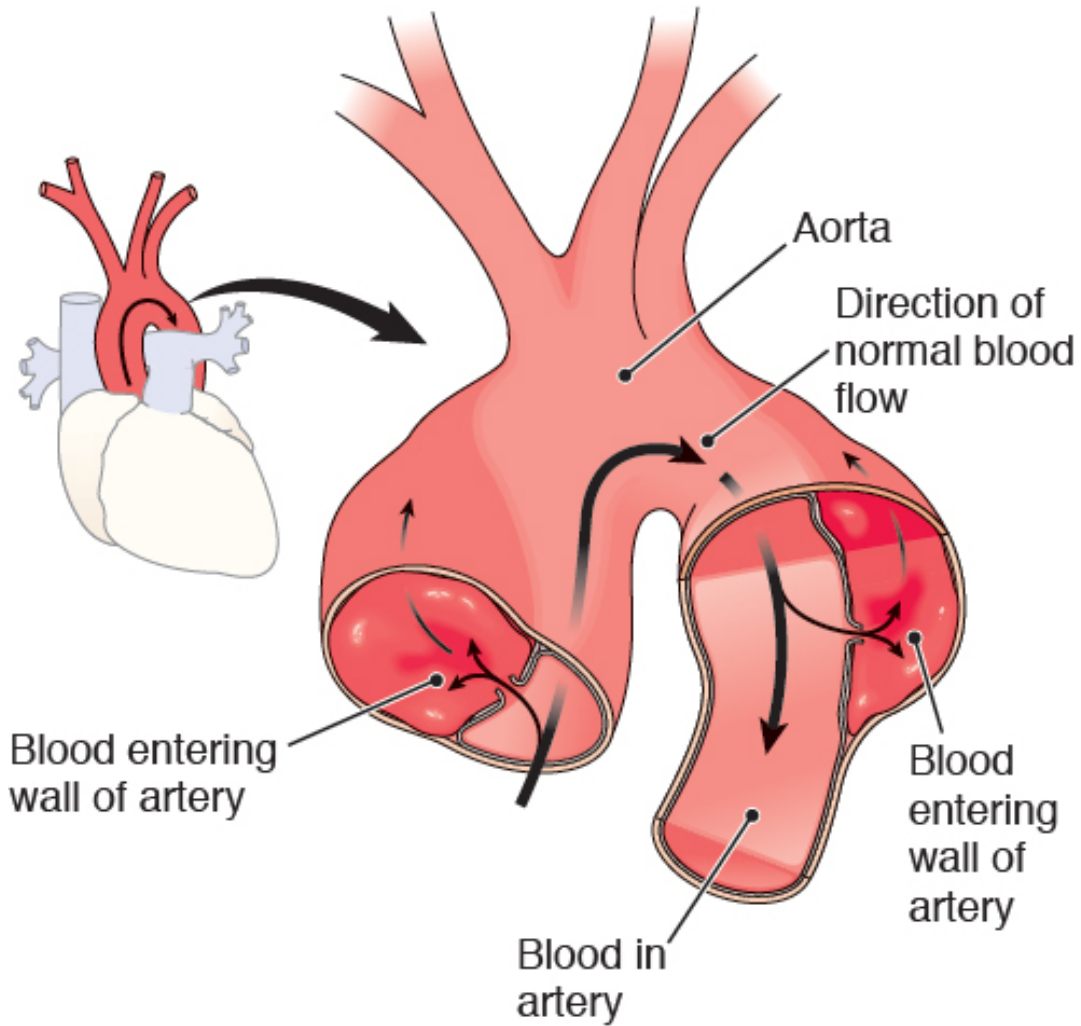




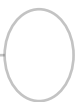
Coronary atherosclerosis. In this example, a branch of the left coronary artery is shown in cross-section during three stages of atherosclerosis: no plaque present (top), a well-formed plaque blocking 30% of the vessel lumen (middle), and formation of a thrombus (blood clot) (bottom).

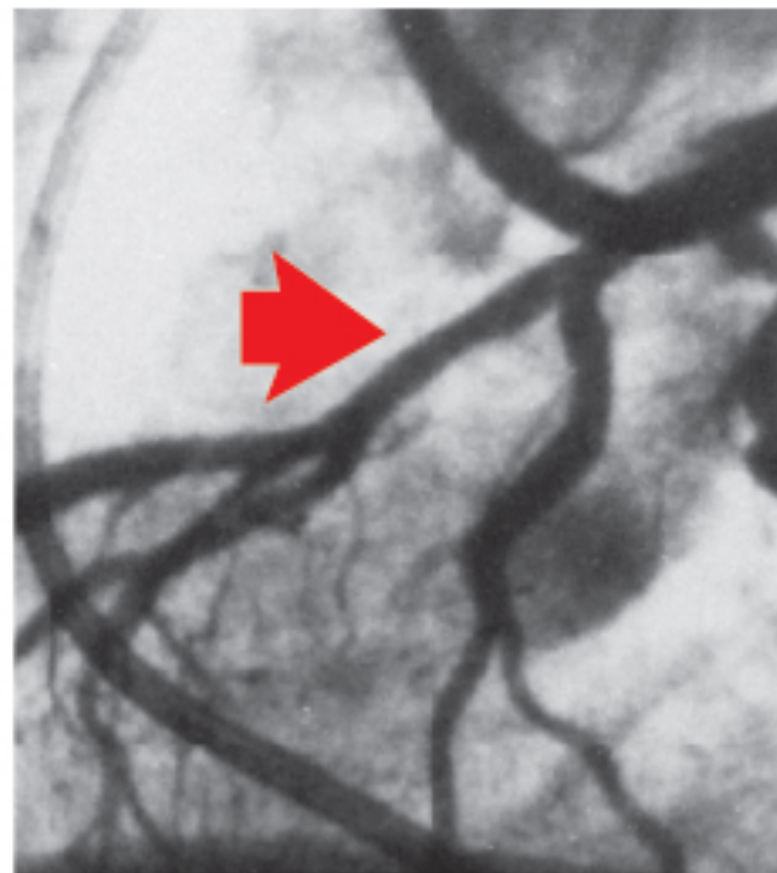
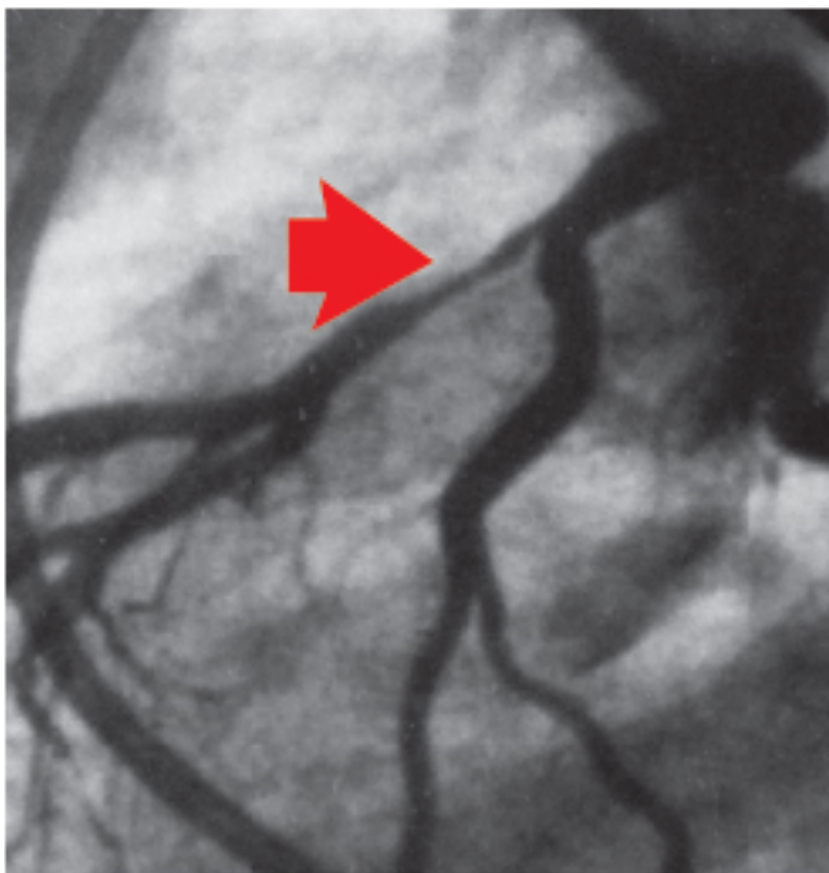
Wingard B. Human Body. 3rd ed. Philadelphia, PA: Wolters Kluwer Health; 2013.





Dissecting aortic aneurysm. Blood separates the layers of the arterial wall.





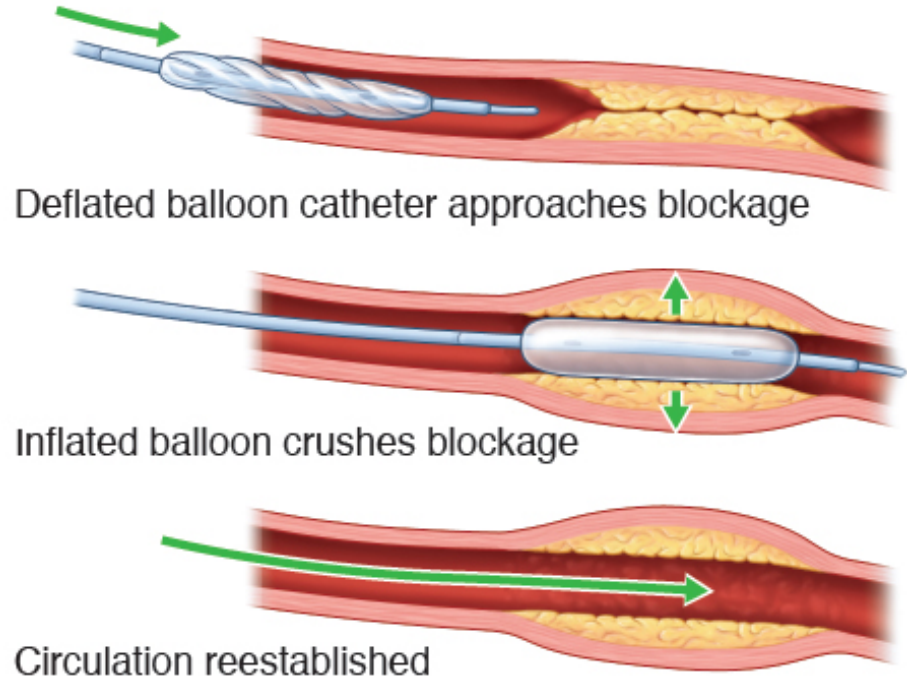
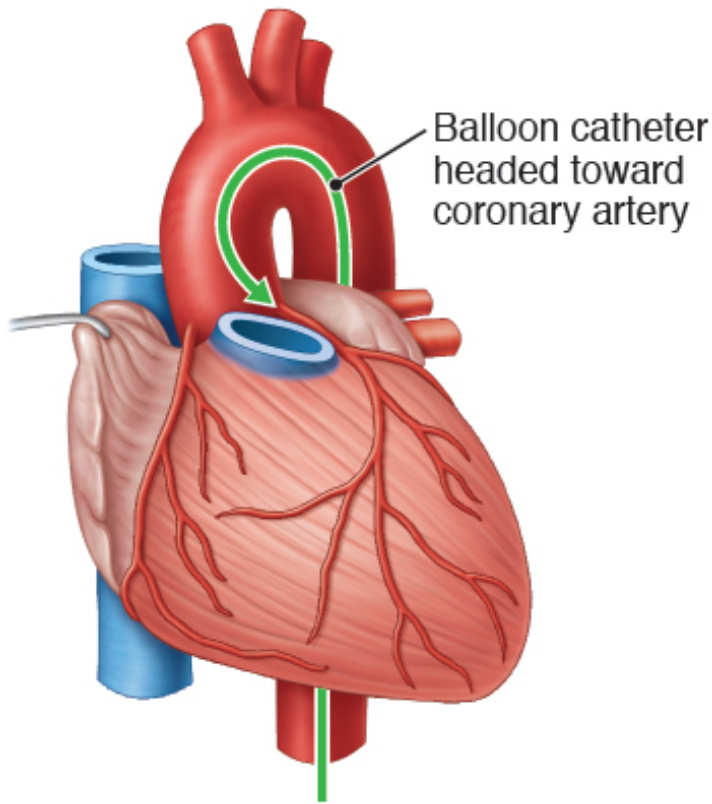
A

B

Coronary angiography. Coronary vessels are imaged after administration of a dye during cardiac catheterization. A. Angiography shows narrowing in the mid-left anterior descending (LAD) artery (arrow). B. The same vessel after angioplasty, a procedure to distend narrowed vessels. Note the improved blood flow through the artery distal to the repair.

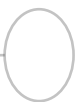
Baim DS. Grossman's Cardiac Catheterization, Angiography and Intervention. 7th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2006.

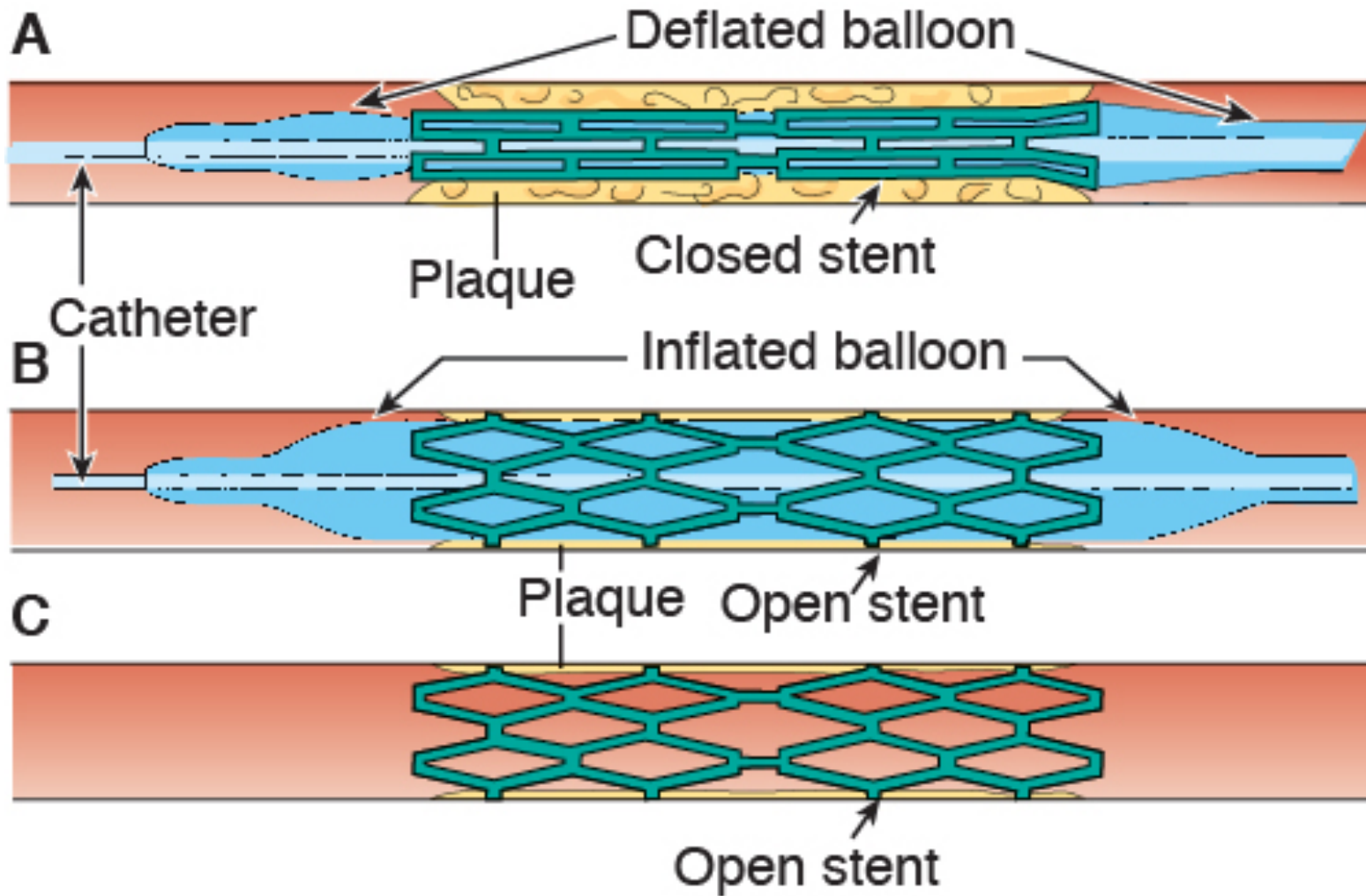




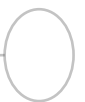
Coronary angioplasty (PTCA).

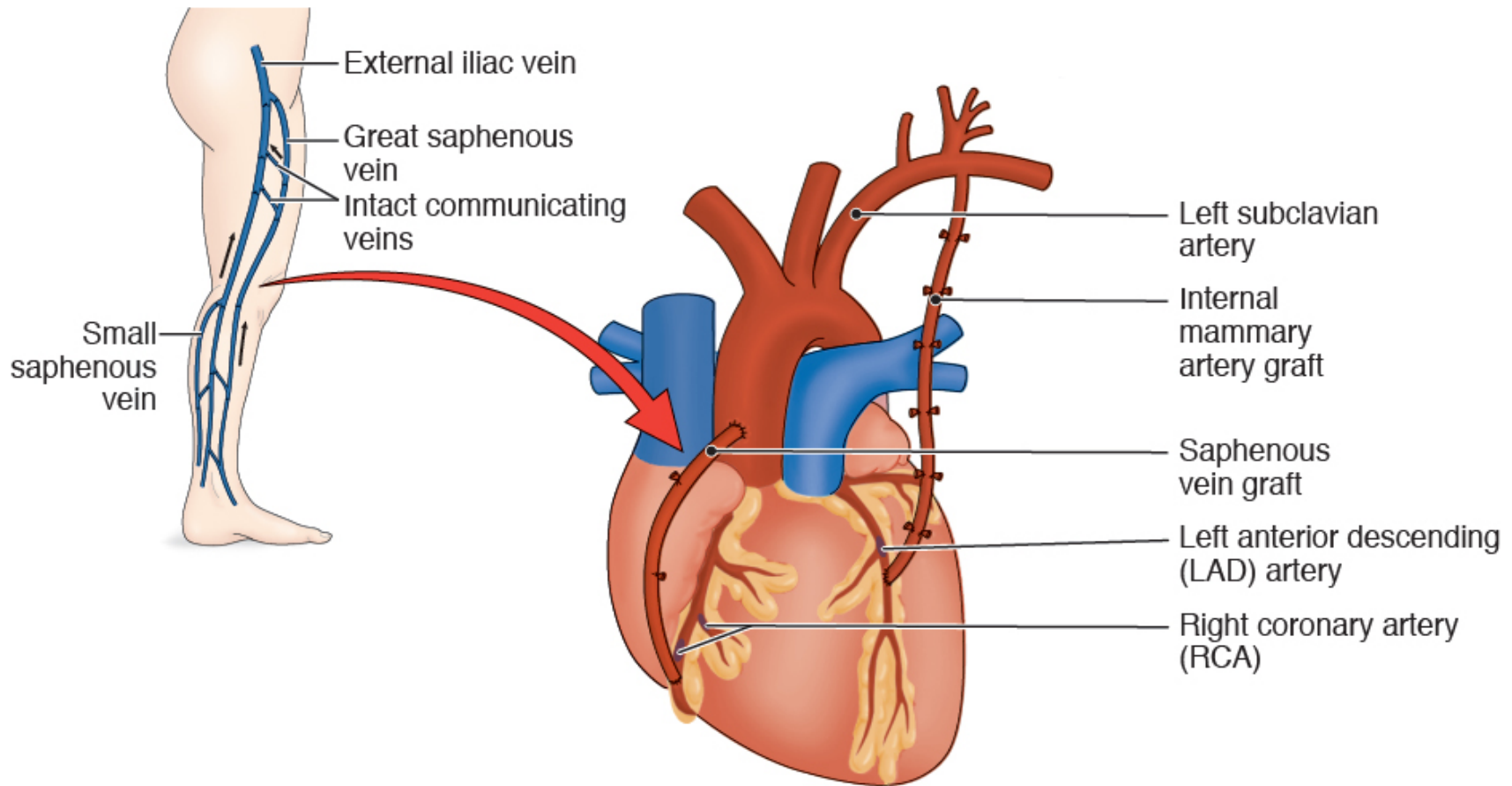
McArdle WD, et al. Exercise Physiology. 8th ed. Philadelphia, PA: Wolters Kluwer Health; 2013.





Arterial stent. A. Stent closed, before balloon inflation. B. Stent open, balloon inflated; stent will remain expanded after balloon is deflated and removed. C. Stent open, balloon removed.

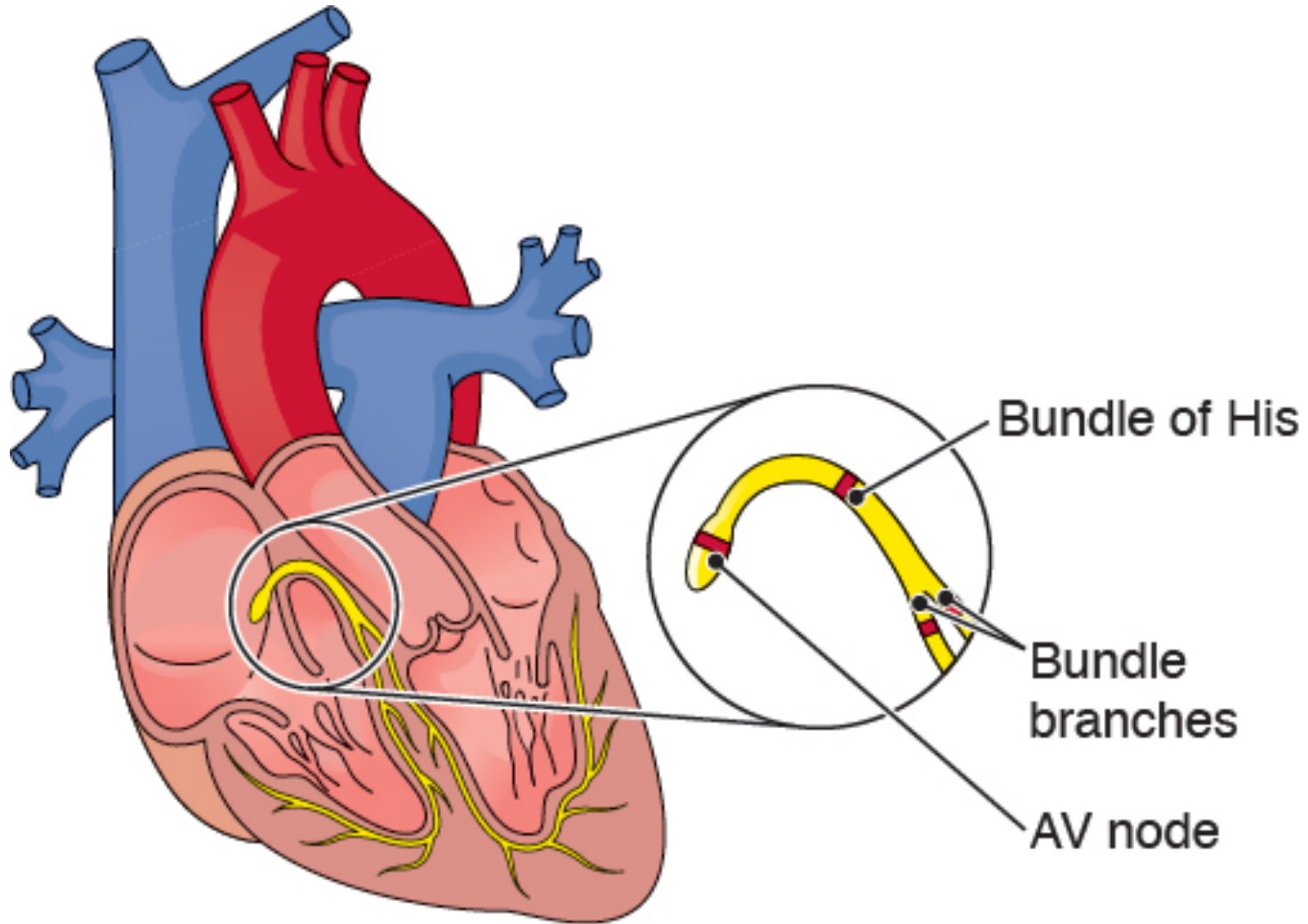




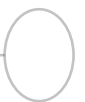
Coronary artery bypass graft (CABG). In a bypass graft, a healthy vessel segment is used to carry blood around an arterial blockage. This figure shows two CABGs. On the left, a segment of the saphenous vein is used to carry blood from the aorta to a part of the right coronary artery that is distal to the occlusion. On the right, the mammary artery is grafted to bypass an obstruction in the LAD artery.

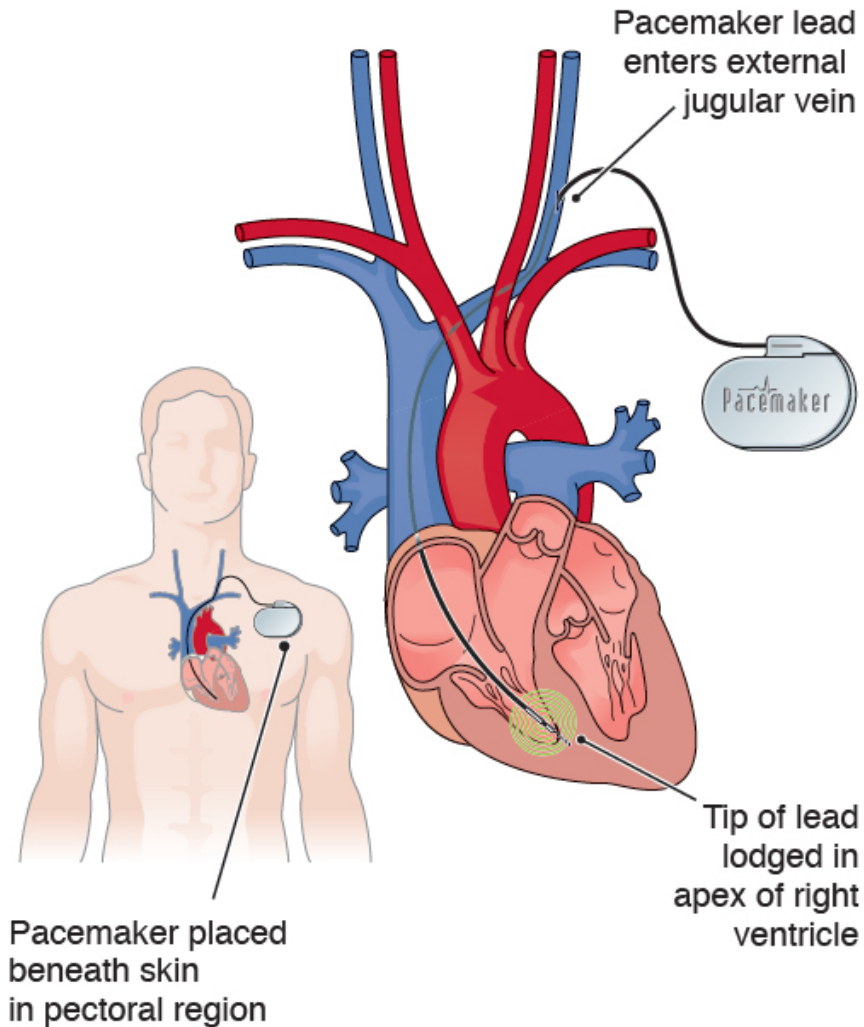
Smeltzer SC, et al. Brunner and Suddarth's Textbook of Medical Surgical Nursing. 12th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2009.



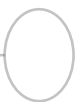


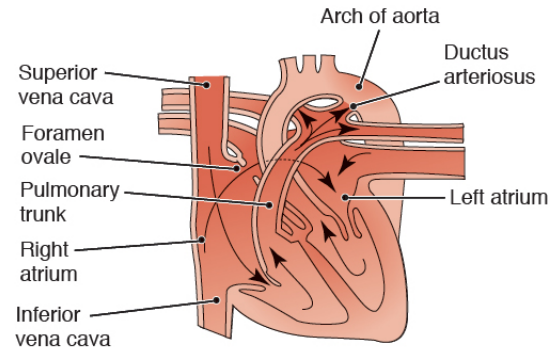
Potential sites for heart block in the atrioventricular (AV) portion of the heart's conduction system.



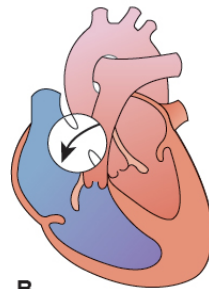


Placement of a pacemaker. The lead is placed in an atrium or ventricle, usually on the right side. A dual-chamber pacemaker has leads in both chambers.

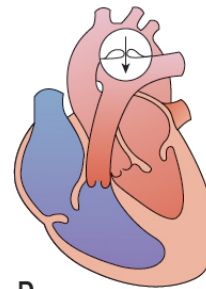




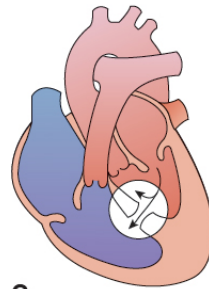
A



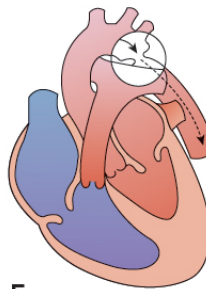
B



D



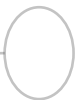
C



E

Congenital heart defects. A. Normal fetal heart showing the foramen ovale and ductus arteriosus. B. Persistence of the foramen ovale results in an atrial septal defect. C. A ventricular septal defect. D. Persistence of the ductus arteriosus (patent ductus arteriosus) forces blood back into the pulmonary artery. E. Coarctation of the aorta restricts outward blood flow in the aorta.

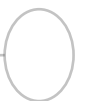
Porth CM, Matfin G. Pathophysiology. 8th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2009.

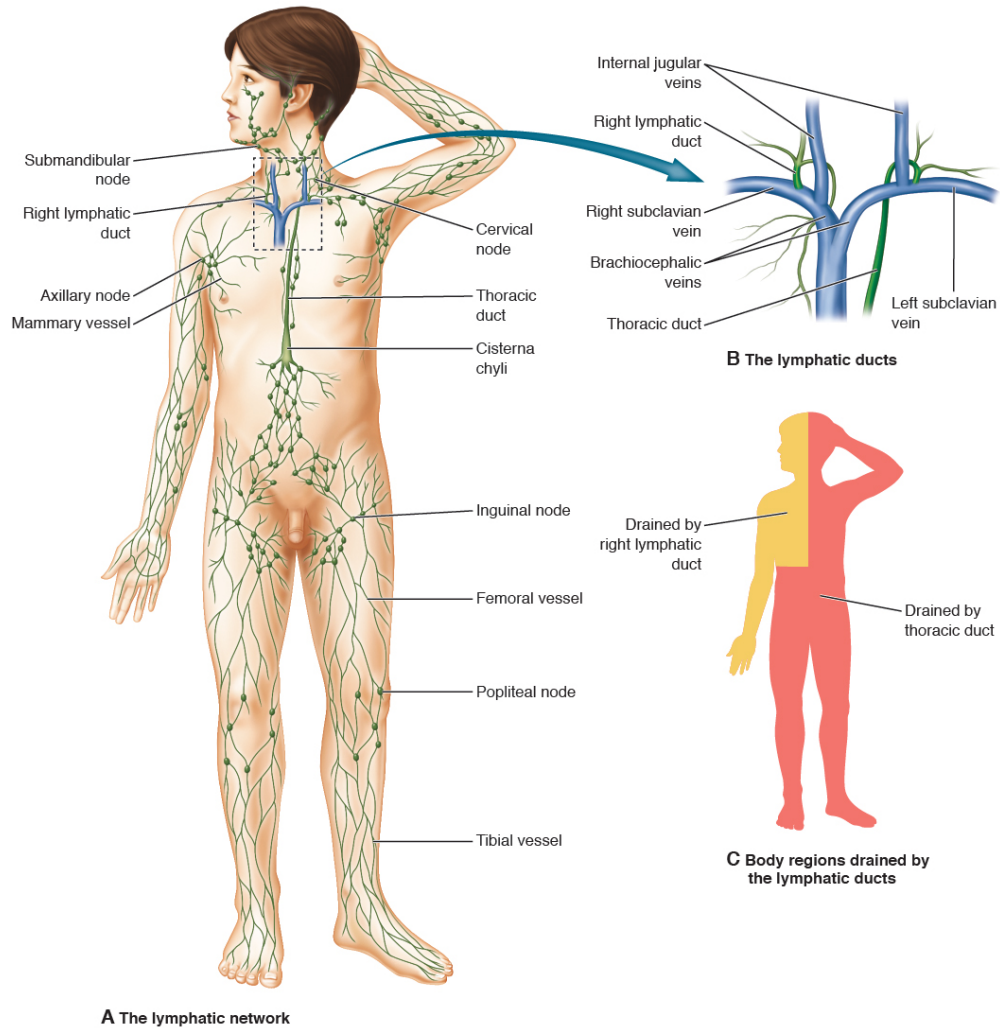




Varicose veins.

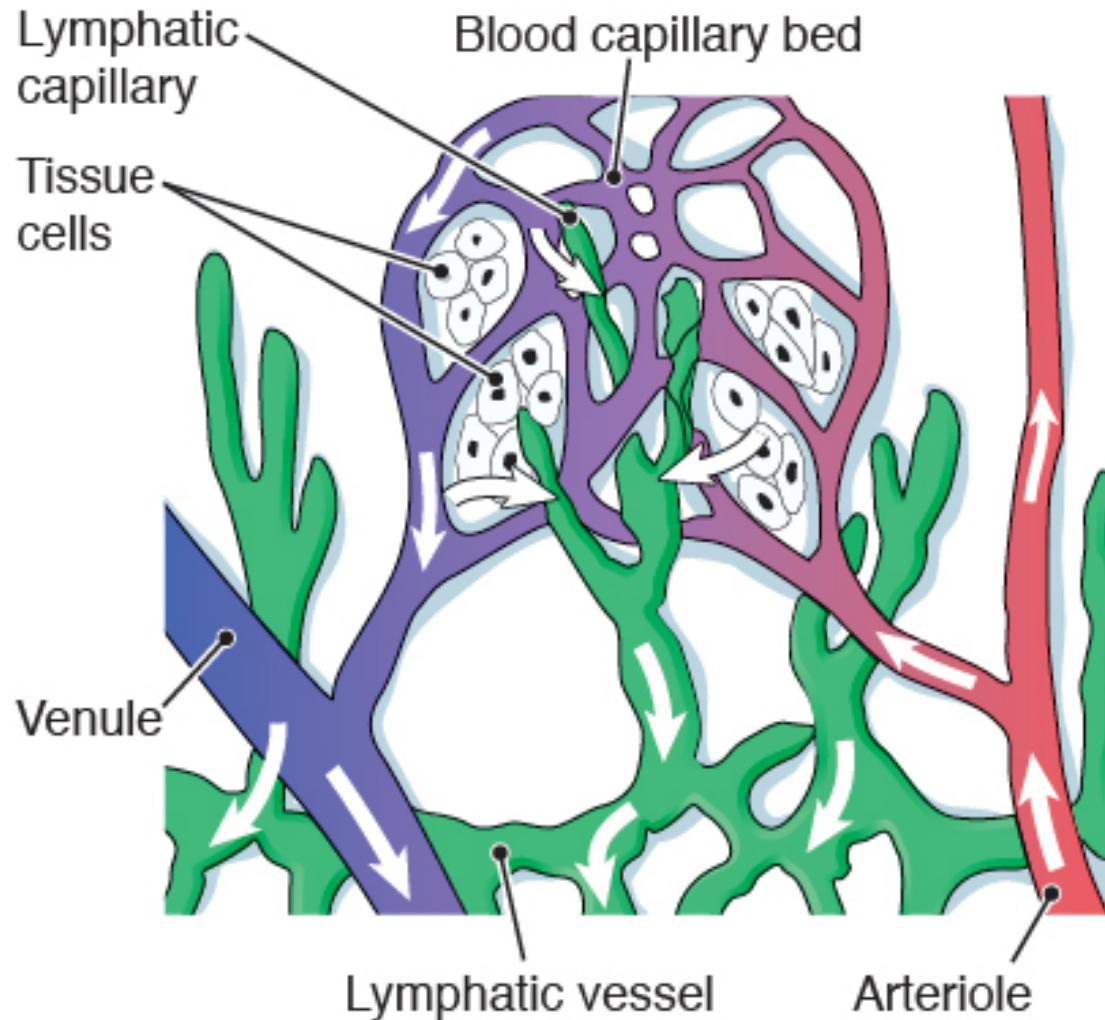
Bickley LS. Bates' Guide to Physical Examination and History Taking. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2009.



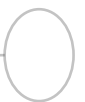


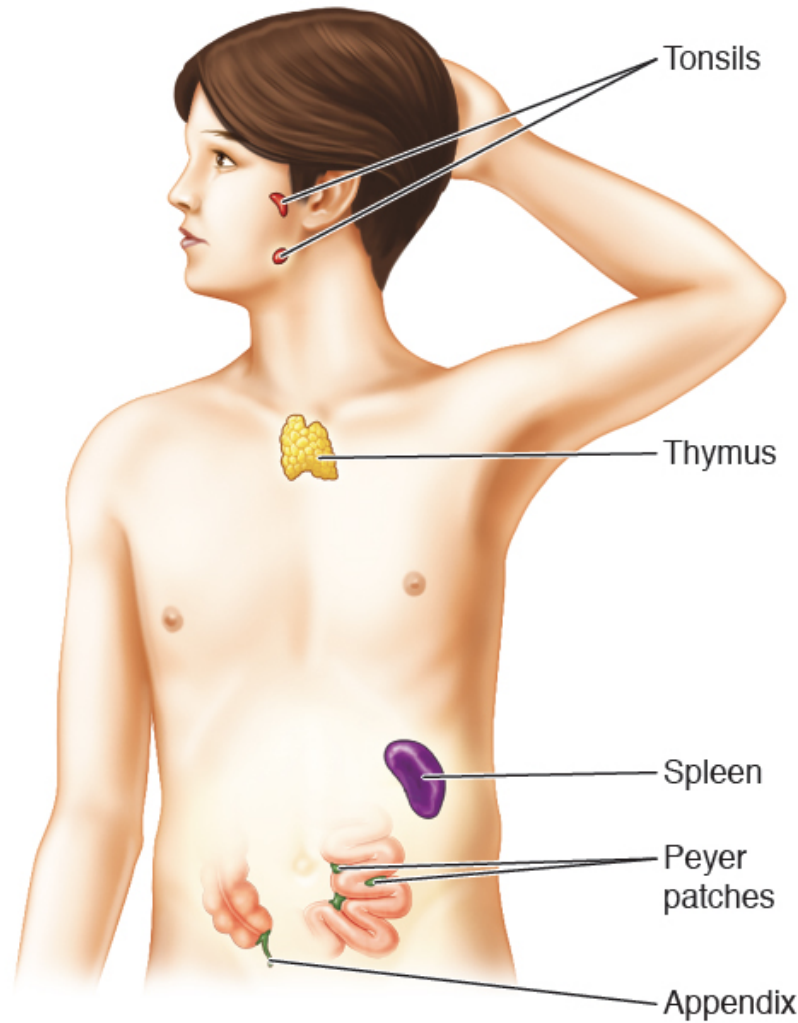
Vessels and nodes of the lymphatic system. Lymphatic vessels serve almost every area in the body. Lymph nodes are distributed along the path of the vessels. A. Lymph nodes and vessels. B. The thoracic and right lymphatic ducts drain into the subclavian veins. C. Body regions drained by the two lymphatic ducts.

McConnell T, Hull K. Human Form, Human Function. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.



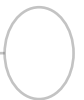
Lymphatic drainage in the tissues. Lymphatic capillaries pick up fluid and proteins left in the tissues and carry them back to the bloodstream.





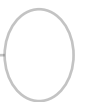
Location of lymphoid organs and tissue.

McConnell T, Hull K. Human Form, Human Function. Philadelphia, PA: Lippincott Williams & Wilkins; 2011.



Roots for the Lymphatic System

Root	Meaning	Example	Definition of Example
lymph/o	lymph, lymphatic system	lymphoid <i>LIM-foyd</i>	resembling lymph or lymphatic tissue
lymphaden/o	lymph node	lymphadenitis <i>lim-fad-eh-NI-tis</i>	inflammation of a lymph node
lymphangi/o	lymphatic vessel	lymphangiogram <i>lim-FAN-je-o-gram</i>	x-ray image of lymphatic vessels
splen/o	spleen	splenalgia <i>sple-NAL-je-ah</i>	pain in the spleen
thym/o	thymus	athymia <i>ah-THI-me-ah</i>	absence of the thymus
tonsil/o	tonsil	tonsillar <i>TON-sil-ar</i>	pertaining to a tonsil





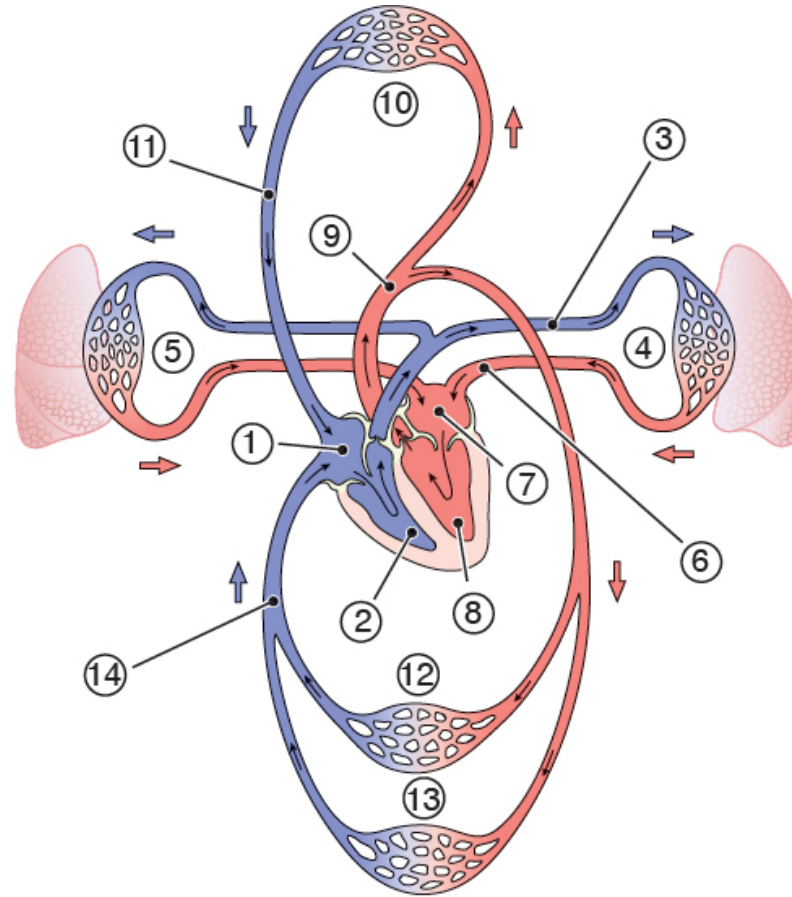
A



B

Pitting edema. When the skin is pressed firmly with the finger (A), a pit remains after the finger is removed (B).





■ Blood high in oxygen
■ Blood low in oxygen

