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GLOSSARY

ablation: Removal or elimination of tissue, usually because it is harmful.

ACE inhibitors (angiotensin-converting enzyme inhibitors): Drugs that dilate blood vessels and improve blood flow. By dilating the blood vessels, these chemicals cause resistance in the circulatory system to be less so the heart does not have to work as hard. They are used to treat patients with heart failure and/or coronary artery disease and can also be used for other purposes.

adventitia: The outermost layer of the artery's wall.

aerobic capacity: When someone is exercising, this is the maximal amount of oxygen that can be taken up by the body.

allograft: See homograft.

alveoli: Small air sacs in the lung that collect oxygen, which is then absorbed by the blood vessels. When the blood vessels release carbon dioxide, it passes

back through the alveoli and is exhaled during respiration.

anasarca: A generalized swelling of the body tissues due to excessive fluid, usually from failure of an organ like the heart, kidney, or liver.

anastomosis: When two blood vessels are connected. Usually done with stitching but can be done with stapling or other methods. Could also be the joining of an artificial blood vessel graft to a native blood vessel, the joining of two pieces of intestine together, or the joining of other hollow lumen-type tissues.

aneurysm: An abnormal dilatation, or ballooning, of a blood vessel. Also, if the heart muscle is damaged and a wall of the heart itself dilates, it is referred to as an aneurysm of the ventricle or a ventricular aneurysm.

angina pectoris: Chest pain that occurs when the heart is not getting enough

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blood. Often described as pressure, like a band tightening around the chest, or a dull, aching pain over the front left side of the chest. Can also be a pain radiating down the left arm or, occasionally, it can radiate into the neck or jaw. It can be associated with shortness of breath.

angiography: The process of making a blood vessel visible by injecting a substance that can be seen under x-ray.

angioplasty: Repair of a blood vessel, usually done with some form of surgery. Also refers to the widening of a narrowed blood vessel with a balloon catheter.

anticoagulant: A drug that prevents or slows the blood clotting process. Also referred to as a blood thinner. Common examples include heparin and coumadin-type drugs.

antiplatelet drug: A drug that prevents blood platelets from clumping together, thereby slowing the blood clotting process. Aspirin is the most common example.

aorta: The main artery that supplies the body with oxygenated blood. It originates at the top of the heart and begins with the aortic valve. It gives off branches that divide into smaller arterial branches.

aortic arch: The portion of the aorta at the top of the heart where it makes a U-turn. It gives off three important blood vessels: the innominate artery, the left carotid artery, and the left subclavian artery.

aortic insufficiency: Also called aortic valve regurgitation or aortic valve incompetence. Occurs when the three leaflets, or flaps, of the aortic valve do not come together when the valve is closed and blood leaks backwards into the left ventricle.

aortic stenosis: An abnormal narrowing of the aortic valve. This can be a condition a person is born with, or it can be related to scarring of the aortic valve leaflets, or flaps, due to rheumatic fever or other causes.

aortic valve: One of the four heart valves. The aortic valve is a one-way valve located between the left ventricle and the aorta. It typically has three leaflets, or flaps. It allows for blood to pass from the left ventricle into the aorta.

aortography: The process of making the aorta visible through x-ray using a radiopaque dye.

arrhythmia: Any abnormal heart rhythm. Also called dysrhythmia.

arteriogram: X-ray picture of an artery.

arteriography: Technique used for taking a picture of an artery.

arterioles: Very small arteries.

arteriosclerosis: Literally means “hardening of the arteries.” It is usually caused by deposits of cholesterol and other fatty substances on and in the artery lining, resulting in narrowing, blockages, scarring, and eventually hardening of the arteries.

artery: A blood vessel that carries blood from the heart to the body or from the heart to the lungs.

ascending aorta: The portion of the aorta between the heart and the aortic arch.

ascites: An abnormal accumulation of serum-like fluid in the abdomen.

assist device: A mechanical device used to aid the failing heart's left or right ventricle.

atelectasis: Collapse of the tiny air sacs in the lung, common after major operations. Atelectasis can lead to pneumonia.

atheromatous plaque: Similar to atherosclerosis but referring to a specific area of plaque.

atherosclerosis: The most common form of arteriosclerosis. Lipids, cholesterol, and other fatty deposits are located on the inner surface and wall of the artery. It can cause coronary blockages and heart attack.

atresia: Absence of a normal opening.

atria: Plural of atrium.

atrial fibrillation: When the atria contract in an irregular rhythm and no longer help pump blood into the ventricles. This condition allows an uncontrolled amount of blood to flow through the tricuspid valve into the right ventricle and through the mitral valve into the left ventricle.

atrial septal defect: An abnormal hole in the common wall between the right and left atria, usually a congenital heart defect.

atrioventricular node (also A-V node): A specialized nerve-type tissue located in the wall of the right ventricle. It receives electrical impulses from the sinoatrial node.

atrium: A filling chamber of the heart. The right atrium furnishes blood for the right ventricle, and the left atrium furnishes blood for the left ventricle.

atrophy: A wasting away of tissue.

auricle: Synonymous with atrium.

auscultation: Listening to the heart or lungs, usually with a stethoscope. Auscultation can also be done over arteries or the abdomen.

autograft: Using tissue from one's own body as a graft.

bacterial endocarditis: An infection involving the heart, caused by bacteria.

beta-blockers: Drugs used to slow the heart rate and the force of contraction, thereby reducing workload and oxygen requirements of the heart. Most commonly used for treatment of coronary artery disease.

bicuspid valve: A valve with two leaflets. The mitral valve is naturally bicuspid, while the pulmonary valve, the aortic valve, and the tricuspid valve normally have three leaflets.

bifurcation: When an artery or vein separates into two branches.

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biopsy: Either the process of removing tissue from a patient for examination or the specimen obtained from such a procedure.

blue baby: A baby born with congenital heart defects that cause the unoxygenated blood returning to the heart to be pumped out through the aorta. This abnormality gives the child a bluish skin color from unoxygenated blood.

board certified physician: After physicians finish their training in a specialty in the United States, they take a series of tests. These tests are administered by the American board of each specialty, for example, the American Board of Internal Medicine, the American Board of Surgery, etc. The physicians that pass these tests receive a certificate stating that they are board certified in that specialty. Most board certified physicians must periodically take recertification tests. For example, cardiac and thoracic surgeons must retake their board examinations every ten years.

bradycardia: An abnormally slow heart rate.

brain death: A condition in which the brain no longer functions while the body is still living. This is determined both by an electroencephalogram, which shows a “flat line” indicating no electrical activity in the brain, and by physical examination showing no brain response under any conditions.

bundle of His: A special nerve-type tissue extending from the atrioventricular

node (A-V node) along the ventricular septum. They help conduct electrical impulses from the A-V node into the ventricles.

calcification: A condition in which calcium abnormally builds up in the tissues, for instance in a heart valve or an artery.

cannula: A hollow tube that is inserted into a blood vessel, the heart, or another body cavity.

capillaries: The smallest blood vessels, connecting the smallest arteries or arterioles to the smallest veins, called venules. In the capillaries, oxygen is given off by the red blood cells to the tissues, and waste products are picked up.

carbon dioxide: A waste product of cell function. This gas is picked up by the capillaries and transported to the lungs, where it is exhaled.

cardiac: Referring to the heart.

cardiac arrest: When the heart either stops beating or goes into an abnormal heart rhythm, in which the ventricles can no longer effectively pump blood. This is a serious condition and often results in unconsciousness within seconds.

cardiac catheterization: When catheters are inserted into the heart. They can be used to measure pressures in the heart, inject radiopaque dyes, detect coronary artery blockages, or learn more about the heart and possible abnormalities.

cardiac output: The amount of blood the heart pumps per minute.

cardiac rehabilitation: A formal or informal program for patients who have had a heart attack or heart surgery. It often includes diet modification, exercise, and education on heart medications. The aim of a cardiac rehabilitation program is to get patients back to a relatively normal lifestyle.

cardiac surgeon: Also referred to as a heart surgeon, cardiothoracic surgeon, cardiovascular surgeon, chest surgeon, or thoracic surgeon. A surgeon who, in the United States, has spent five or six years in a training program (residency) in general surgery, followed frequently by a year or two in the research laboratory, and then spends two to three years in a training program in surgery of the chest, including surgery of the heart and lungs.

cardiac tamponade: A process in which fluid or blood clots build up between the heart and the pericardium. It can interfere with heart function and may eventually cause the heart to fail and may possibly even cause death.

cardiac transplantation: Replacement of a heart with a donor heart.

cardiogenic shock: A very serious condition in which the heart is unable to pump enough oxygenated blood to supply the body's tissues and organs. It is usually related to the heart muscle failing as a result of a heart attack and must be treated immediately.

cardiologist: A physician who has completed training in internal medicine and then typically spends another three or four years specializing in heart disease. A cardiologist is an internist who has specialized in heart disease, whereas a cardiac surgeon is a surgeon who specializes in operations on the heart and other structures in the chest. Some cardiologists, called interventional cardiologists, perform cardiac catheterizations.

cardiology: The study of the heart and related structures.

cardiomyopathy: A condition in which the heart muscle is not able to contract or function properly.

cardiomyoplasty: A surgical procedure using a muscle, usually the latissimus dorsi muscle in the back, to wrap around a failing heart. The muscle is then electrically stimulated so it will contract in synchrony with the failing heart and hopefully improve the signs and symptoms of heart failure.

cardioplegia solution: A solution that stops the heart from beating and reduces its oxygen consumption, thus allowing surgery to take place.

cardiopulmonary bypass: Using the heart-lung machine to temporarily bypass the heart and lungs, usually during open heart surgery. While on cardiopulmonary bypass, the patient's body is supported by the heart-lung machine.

cardiopulmonary resuscitation (CPR):

The act of attempting to revive a patient, usually unconscious and no longer breathing, after the heart has stopped or gone into a serious, fatal rhythm. It involves mouth-to-mouth breathing and external massage or pressing on the chest to help the heart pump blood. If this is done in a hospital or by emergency medical technicians, electrode paddles are often used to shock the heart back into a more normal rhythm.

cardiothoracic surgeon: *See* cardiac surgeon.

cardiovascular: Referring to the heart and blood vessels.

cardiovascular surgeon: *See* cardiac surgeon.

cardioversion: Changing the heart rhythm. This can be done with an electric shock or drugs.

cardioverter/defibrillator: A cardioverter or defibrillator is usually used with electrode paddles to electrically shock the heart into a more normal or normal rhythm. There are also implantable versions of this device.

carotid arteries: Two arteries that supply the head and brain with oxygenated blood.

CAT scan: *See* computed tomography.

catheter: A long, thin, hollow tube that is inserted into the body.

catheterization: The process of inserting the catheter into the body.

CCU: Cardiac care unit or, in some cases coronary care unit, where patients with conditions such as heart attacks and other types of heart conditions are placed for close monitoring.

cholesterol: A fat-like substance, both produced in the body and present in certain types of foods that are made from animals.

cholesterol ratio: Ratio of the total cholesterol measured in the blood to the amount of high-density lipoproteins (HDL). A high ratio of total cholesterol to HDL-cholesterol usually indicates greater risk for having coronary disease or a more rapid progression of existing coronary artery disease.

chordae tendineae: Stringlike attachments that are part of a mitral and tricuspid valve apparatus which connect the valve leaflets, or flaps, to the papillary muscles on the ventricular wall.

cineangiography: Similar to an arteriography or an angiography. It is the process of making a “movie” of the blood vessel as radiopaque dye moves through the vessel and helps to identify blockages. This is commonly done in the coronary arteries and referred to as a coronary cineangiogram.

circulation: The circulation of blood through the heart, lungs, and blood vessels.

circumflex coronary artery: A branch of the left main coronary artery.

claudication: Pain, numbness, or tiredness in the leg caused when the muscles are not getting enough oxygenated blood. It is usually due to a blockage in one of the arteries supplying the leg muscles with blood.

coarctation of the aorta: A birth defect in which there is a segment of the aorta that is abnormally narrowed. Typically, this coarcted area is in the descending aorta just after the aortic arch.

collateral circulation: Referring to tiny blood vessels that are used to carry blood around blockages in arteries or veins.

commissurotomy: A procedure to open a heart valve after its leaflets, or flaps, have become stuck together, usually because of rheumatic fever. This procedure is also called valvulotomy. It can be done during a heart operation or with balloon-tipped catheters.

computed tomography: Also referred to as CT scans or CAT scans. A special type of three-dimensional x-ray picture that yields more information than can be obtained with a regular x-ray.

conduit: In heart surgery, this usually refers to any tube used to channel blood. It can be the patient's own artery or vein, taken from one area of the body and moved to another. It can also be made from synthetic material, taken from another human, or in some cases, taken from an animal.

congenital cardiac anomaly: Also referred to as a congenital heart defect. This is an

abnormality of the heart or the blood vessels surrounding the heart. A person is born with it.

congestive heart failure: When the heart does not pump an adequate amount of blood, the blood backs up into the veins so that they become engorged and swollen with fluid.

coronary arteries: Arteries that supply the heart muscle with oxygenated blood.

coronary arteriography: Same as coronary cineangiography. The process of obtaining a coronary arteriogram or an x-ray picture of the arteries of the heart. This is done by injecting a radiopaque dye that shows up on x-ray.

coronary artery bypass grafting (CABG): A surgical technique in which one's own veins or other arteries are used to move blood around a blocked area in a coronary artery.

coronary artery disease: Referring to atherosclerotic heart disease, or a buildup of fatty substances or cholesterol in the walls of the coronary artery causing blockages and possibly even a heart attack.

coronary insufficiency: Refers to coronary artery disease or a condition in which the coronary arteries do not supply a sufficient amount of blood.

coronary occlusion: A partial or total blockage of a coronary artery.

coronary thrombosis: A clot in one of the coronary arteries, typically an artery

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that is already partially blocked from cholesterol buildup or other fatty deposits.

CPR: *See* cardiopulmonary resuscitation.

cyanosis: A condition in which there is a lack of oxygenated blood, causing the blood to turn a dark bluish or purple color, which will make the skin appear bluish. In darker skinned people, the tissue under the fingernails will be bluish.

cyclosporine: A drug used to help prevent organ rejection in patients who have had transplants.

defibrillation: A process usually using an electric shock to the heart to stop the atria and/or ventricles from beating chaotically and convert the heart to a more normal rhythm.

descending aorta: The portion of the aorta between the aortic arch and the abdomen.

diastole: The portion of the cardiac cycle of beating and resting in which the heart is relaxed.

digitalis: A drug made from the foxglove plant. It is believed to help the heart contract more forcefully and efficiently and also help the failing heart contract more normally.

dissection: When tissues in the body are separated.

distal: Meaning beyond or the farther end. When referring to a blood vessel, it's the portion that's farthest from the heart.

diuretic: This is a drug or other substance used to stimulate the kidneys to produce more urine and remove excess fluid from the body.

Doppler ultrasonography: A technique using high frequency sound waves to detect blood flow through the heart and blood vessels. It is somewhat like the sonar used to detect submarines.

ductus arteriosus: A tube connecting the pulmonary artery to the aorta. After birth, when the lungs begin to function, this tube normally closes. If it stays open, it's known as patent ductus arteriosus. Over time, this can cause problems such as heart failure and may need to be surgically closed.

dyspnea: The sensation of being short of breath.

echocardiogram: A movie of your heart functioning using a technique whereby high frequency sound waves develop images of the beating heart.

edema: Swelling of tissues due to excessive fluid.

ejection fraction: Referring to the percentage of blood ejected out of the heart ventricles, usually the left ventricle, during a single contraction. With a single normal heartbeat, about 50 percent to 60 percent of the blood in the left ventricle is ejected. With some degree of heart damage due to a heart attack or other causes, the amount of blood ejected may be only 30 percent or 40 percent. When the left ventricle

is significantly damaged, only 20 percent or even less may be ejected.

electrocardiogram: Also called an ECG or EKG. A recording of the heart's electrical activity. EKG is a historical spelling used because much of the original work on the electrocardiogram was done in Holland.

electrophysiologic study: A mapping out of the heart's electrical conduction system, done with special catheters that are passed through the bloodstream to the heart.

embolectomy: A surgical procedure in which an embolus is removed from the bloodstream.

embolism: The complete blocking or partial blocking of a blood vessel by an embolus.

embolus: An object (usually a blood clot) traveling through the bloodstream that should not be in the bloodstream. It frequently blocks off a blood vessel.

endarterectomy: A surgical procedure in which atherosclerotic material in an artery is removed and the artery is either sewn back together or a patch is placed over the surgical incision.

endocardium: The inner lining of the heart.

endothelium: The inner lining of the blood vessel.

epicardium: The outer lining of the heart. It is in contact with the pericardium.

erectile dysfunction: Also referred to as impotence. It is the inability to achieve or maintain an erection for sexual intercourse.

erythrocyte: A red blood cell that contains hemoglobin. Its main function is to carry oxygen through the bloodstream.

etiology: The study of the cause or origin of a problem, usually a disease. Also the factor causing the problem.

excision: Surgical removal of a piece of tissue.

exercise stress test: A test during which a patient is connected to an electrocardiogram, or possibly other types of monitoring machines, and asked to walk on a treadmill or possibly pedal a stationary bicycle while being monitored.

extracorporeal circulation: Process in which the blood is routed outside of the body and then back into the body. It is usually done with a machine, such as a heart-lung machine.

femoral arteries: The main arteries in the upper portion of the leg.

fibrillation: A chaotic beating pattern of the heart.

fluoroscope: A type of x-ray device that enables a physician to see images, such as the heart beating, as they are actually happening as opposed to a one-time picture.

foramen ovale: A hole between the left and the right atrium in the atrial septum

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present in the fetus. If it remains open after birth, it is called a patent foramen ovale.

guanosine monophosphate (cyclic GMP): A chemical neuromediator that helps to transmit messages through the nervous system.

graft: Insertion of one thing into another, and making it an integral part of the latter. An example is grafting a living branch onto a tree until it becomes part of the host tree. In heart surgery, it refers to attaching vessel grafts onto arteries.

HDL, high-density lipoprotein. This is known as the good type of cholesterol. A higher HDL level is good and indicates one is less likely to suffer from a heart attack.

heart attack: When a portion of the heart muscle dies. Doctors refer to this as a myocardial infarction, infarction, or MI.

heart block: When the electrical impulse that originates in the S-A node is blocked from getting through the A-V node to pace the ventricles.

heart block, complete: When none of the S-A electrical activity is getting through the A-V node to the ventricles.

heart block, first-degree: When the S-A node's electrical activity arriving at the A-V node is slowed, causing an abnormality on the electrocardiogram.

heart block, second-degree: When only some of the beats from the S-A node are getting through to pace the ventricle.

heart block, third-degree: The same as complete heart block.

heart disease: A term used to indicate any type of abnormal heart condition, whether acquired or congenital.

heart failure: When the heart is weakened and cannot pump enough blood.

heart-lung machine: A machine used to bypass the function of the heart and lungs.

heart massage (*see also* CPR): A rhythmic compression on the chest to force blood through a heart that has stopped pumping. If the chest is already open, the heart surgeon may squeeze the heart in a rhythmic fashion so blood will be forced through the heart. This is called internal heart massage.

heart surgeon: *See* cardiac surgeon.

hemodynamics: The circulation and the function of the heart, blood, and blood vessels.

hemoglobin: A protein in the red blood cell that helps transport oxygen and carbon dioxide.

heparin: A powerful chemical that prevents blood from clotting, used as an anticoagulant.

heterograft: *See* xenograft.

heterotopic transplant: The transplant of an organ or tissue, usually from one person to another, when the organ or tissue is

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not put in the location where it normally resides.

homograft: A donor graft, or piece of tissue, taken from a donor and placed into a recipient of the same species.

hypertension: Abnormally high blood pressure.

hypertrophy: Abnormally enlarged organs or tissues.

hyperventilation: Breathing fast in such a manner that the carbon dioxide level in the blood falls to an abnormal level.

hypoplasia: Underdeveloped tissues or organs.

hypothermia: Lowering the body temperature. This technique is used in heart surgery, usually with the heart-lung machine, so the body's demand for oxygen will be less during certain types of surgical procedures.

hypoxia: Abnormally low oxygen levels in the blood and tissues of the body.

iatrogenic: Caused by the doctor.

idiopathic: Of unknown cause.

iliac arteries: The two main terminal branches of the aorta as it ends in the lower abdomen. They carry blood to the pelvis and the legs.

incompetent valve: A leaking heart valve.

infarction: Death of tissue.

inferior vena cava: The large vein that brings blood from the lower body back to the heart.

innominate artery: The first main branch off the aortic arch, which in turn divides into the right carotid artery, supplying blood to the head and neck, and the right subclavian, supplying blood to the right arm.

innominate vein: A large vein in the upper portion of the chest near the neck that channels venous blood back into the superior vena cava.

insulin: A hormone produced in the pancreas that promotes use of glucose by the cells and protein formation. Insulin is also responsible for the formation and storage of fats (lipids).

intima: The inner lining of a blood vessel that is in contact with the blood. It includes the endothelial cell layer.

intra-aortic balloon pump: A pump that is threaded into the aorta, usually through an artery in the groin, and connected to an external power source. There is a balloon on the tip of a catheter that inflates and deflates in synchrony with the heart, helping the heart to pump blood through the early postoperative period.

ischemia: When a portion of the body, an organ, or a tissue is not getting enough oxygenated blood. It is usually related to a blockage in one of the arteries delivering blood to that area.

jugular vein: Large vein in the neck that returns blood from the head and neck.

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LDL-cholesterol: Low-density lipoprotein cholesterol. Although it is necessary for the body to function, it is considered the bad type of cholesterol. An excess amount may make a person more prone to develop coronary artery and other types of atherosclerotic diseases.

left anterior descending coronary artery: One of the two major branches of the left main coronary artery that supply blood to the left ventricle. The other major branch is the circumflex coronary artery.

Leriche's syndrome: A condition involving blockages of the arteries coming off the lower aorta, including the iliac arteries, that is characterized by claudication. It is associated with erectile dysfunction.

lesion: An abnormality of any body tissue or part.

leukocyte: White blood cell. They are part of the blood and are primarily involved in protecting the body against infections.

licensed physician: A physician who has been granted a license by a state to practice medicine in that state. All practicing physicians in the United States must be licensed, but they need not all be board certified (*see* board certified physician).

lipid: The fats circulating in the bloodstream, including cholesterol, triglycerides, and phospholipids.

lipid profile: The percentage of the different types of lipids in the bloodstream.

lipoprotein: Identical to LDL except for the addition of certain other proteins.

low-density lipoprotein cholesterol: *See* LDL cholesterol.

lumen: Inner open area of the blood vessel through which blood flows.

magnetic resonance imaging: Also called MRI. Radio waves and magnetic fields are used to form images of the internal portions of the body. The MRI is particularly good for studying blood vessels and blood flow through the heart.

media: Middle layer of the wall of an artery. It includes elastic tissue, collagen, and muscle.

MI: Myocardial infarction, or heart attack.

mitral valve: A one-way valve located between the left atrium and the left ventricle. The mitral valve has two leaflets, or flaps.

mitral valve prolapse: A common condition characterized by the two leaflets, or flaps, of the mitral valve not coming together completely when the mitral valve closes. There is usually some leakage of blood back into the atrium. This has also been called the "click murmur syndrome."

mitral valve regurgitation (or incompetence): Leakage of blood backwards through the mitral valve when it should be closed while the left ventricle is contracting.

mitral valve stenosis: Abnormal narrowing of the mitral valve, causing difficulty in blood flow through the valve.

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murmur: A noise produced from blood flowing through the heart, other blood vessels, or lungs.

myocardial infarction: *See* heart attack or MI.

myocarditis: An inflammation of the heart muscle.

myocardium: The heart muscle.

myxoid degeneration: Degeneration of the middle layer of tissue in blood vessels and heart valves.

necrosis: Death of tissue.

neonate: A newborn child within the first few weeks of life.

nitroglycerin: A drug used to dilate coronary arteries so more oxygenated blood can reach the heart muscle. This drug is generally used by patients with atherosclerotic coronary artery disease.

occlusion: Narrowing or blockage of a blood vessel.

open heart surgery: Heart operations in which the heart-lung machine is used and the heart is opened so various structures can be repaired or replaced. However, many people also use the term to refer to any heart operation in which the heart-lung machine is used, including coronary bypass surgery, in which only the surface of the heart is worked on.

pacemaker: A small, battery-powered device implanted in the chest to send electrical

impulses to the heart, causing it to contract in a rhythmic fashion. Electrical pacemakers are used when the body's natural pacemaker, the sinoatrial node, is not functioning properly.

palliative: A treatment that improves a condition but does not cure it. A palliative heart procedure would be one that would improve the patient's condition but not cure the heart disease.

papillary muscles: Tiny muscles located in the left and right ventricles that are attached with stringlike structures called chordae tendineae to the mitral and tricuspid valves. These muscle structures help control the valve function.

patent: Patent means open. Usually it means that a blood vessel is open.

patent ductus arteriosus: *See* ductus arteriosus.

pediatric cardiologist: A physician who specializes in heart diseases of children.

pediatric heart surgeon: A heart surgeon who specializes in heart surgery in children.

percutaneous transluminal coronary angioplasty (PTCA): A procedure using a balloon-tipped catheter that is inflated and crushes atherosclerotic plaque or other material against the inside wall of the coronary artery, opening the blockage and allowing more blood flow to the heart muscle. This is done by introducing a catheter through a needle stick in the

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skin (percutaneous). The catheter is threaded up through the arteries and into the coronary lumen across the area of the blockage (transluminal coronary), and the balloon is inflated (angioplasty).

pericardial tamponade: See cardiac tamponade.

pericarditis: Inflammation of the pericardium.

pericardium: The fibrous sac that surrounds the heart.

phlebitis: An inflammation of a vein, usually associated with a blood clot forming in the vein.

phospholipid: One of the types of lipids present in the bloodstream. Phospholipids are a necessary part of a cell membrane. They are also thought to be important in keeping cholesterol and triglycerides in solution in our circulation.

physicians in training: Physicians training in a specialty used to be known as interns during the first year after medical school, and residents while training after that. In recent years, however, the term intern is used less commonly in the United States. Most physicians are known as residents from the day they start a training program after medical school. In some cases, if they obtain additional training in a subspecialty, they are known as a fellow during that period of training.

plaque: A raised, abnormal area. In the bloodstream, these are typically referred to as atheromatous plaques, and they're

composed of cholesterol and other lipid material. As the plaque enlarges, it obstructs blood flow in various arteries including the coronary arteries to the heart.

platelets: Tiny disc-shaped structures in the bloodstream that help the blood to clot.

pleural effusion: A condition in which a serum-like fluid floods into the space between the inner lining of the chest cavity and the outer lining of the lung (pleura). It can be treated by drawing the fluid off with a needle that is inserted through the chest wall. If it is caused by heart failure, it can be treated by treating the underlying cause of the heart failure. In some cases, a small plastic tube has to be inserted through the chest wall and left in place for a few days or longer to treat this condition.

pleurocentesis: Also referred to as a "chest tap." A procedure in which a hollow tube is inserted through the skin into the chest cavity. This is usually done by attaching a needle to a syringe so that fluid abnormally present in the space between the inner chest wall and lung can be removed.

pneumothorax: Collapse of the lung.

prosthesis: Artificial material or an artificial device used to replace a body part.

proximal: A point closer to the point of reference. When referring to a blood vessel, it's the portion that's closest to the heart.

pulmonary artery: Artery that carries blood from the right ventricle to the lungs.

pulmonary circulation: The portion of circulation in which blood is pumped from the right ventricle to the lungs, where it is oxygenated and returned through the pulmonary veins to the left atrium.

pulmonary edema: A condition in which the lungs become congested with fluid, usually related to a back-up of blood due to either mitral or aortic heart valve malfunction or to heart failure.

pulmonary embolism: This happens when an abnormal piece of material, such as a blood clot, lodges in one of the blood vessels in the lungs, usually causing damage and possible shortness of breath. A large lung embolism can cause sudden death.

pulmonary hypertension: A condition in which blood pressure in the vessels of the lung is abnormally elevated.

pulmonary insufficiency: A leaking pulmonary valve, or can mean the lungs are not functioning properly.

pulmonary valve: One-way heart valve at the junction of the right ventricle and the pulmonary artery.

pulse: With each contraction of the left ventricle, the arteries throughout the body expand. This can be felt by placing the fingers on the wrist next to an artery and is known as the pulse.

pulse pressure: The difference between the pressure in the arteries when the heart is contracting and the pressure when the left ventricle is relaxing. For example, blood pressure may increase to a peak of 120 millimeters of mercury when the left ventricle is contracting and be as low as 80 millimeters of mercury while the heart is relaxing. That blood pressure would be written as 120/80.

radionuclide: A small amount of a nuclear substance that is used during some diagnostic tests to help physicians better see the heart and blood vessels.

red blood cell: See erythrocyte.

rejection: When the body's immune system recognizes a tissue as foreign, such as a transplant from one person to another, and mounts a defense against that tissue. If appropriate measures, such as antirejection drugs, are not administered, the body will probably reject the foreign tissue.

retrograde coronary perfusion catheter: A catheter that is inserted through the right atrium into the coronary sinus, a vein that drains the heart itself. This catheter is usually used to administer cardioplegia solution.

rheumatic fever: Usually associated with streptococcus infections, although not actually an infection itself. It usually comes on weeks after the infection and may be an allergic reaction to the infection. It can affect the heart,

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the heart valves, the joints, and the nervous system.

rheumatic heart disease: Specifically referring to the heart's involvement with rheumatic fever.

rubella: Commonly known as the German measles.

saphenous vein: A greater saphenous vein runs from the groin down to about the ankle. A lesser saphenous vein runs behind the leg in the calf area. These veins generally run right under the skin and are not critical veins. They are frequently used for coronary bypass operations and for various other types of blood vessel grafts in the legs and other areas in the body.

sclerosis: Hardening or scarring of arteries. Arteriosclerosis is usually associated with coronary artery disease due to buildup of lipids in the arteries.

septicemia: An infection in the bloodstream.

septum: A wall that separates two chambers, such as two chambers of the heart. The atrial septum separates the right atrium and the left atrium, and the ventricular septum separates the right and the left ventricles.

shock: Refers to a sudden or relatively sudden collapse of the cardiovascular system. Cardiogenic shock refers to a type of shock in which the heart is failing significantly and the blood pressure is usually very low, causing the skin to be

cool and clammy. Urine output is low, and the patient may be barely responsive.

shunt: Usually an abnormal communication between two blood vessels or portions of the heart itself so blood is not routed through its normal path. Shunts are sometimes created by surgeons for the treatment of various heart conditions.

sinoatrial node: Also sinus node and S-A node. This is the true pacemaker of the heart, located at the junction of the right atrium and superior vena cava. These cells rhythmically discharge electrical impulses that cause the heart to contract. This impulse also travels to the A-V node, causing the ventricles to contract.

sinus rhythm: The normal rhythm of the heart that is stimulated by the sinoatrial node.

sphygmomanometer: Also called the blood pressure cuff because it is used to measure blood pressure. The cuff portion of this device is wrapped around the arm and tightened by squeezing a bulb. A column of mercury rises as the pressure increases, and as it slowly falls, the blood pressure is measured through the pulse in the wrist and by listening to the sounds just below the blood pressure cuff in the arm.

stenosis: An abnormal narrowing of a blood vessel, heart valve, or any other orifice or tube-like structure in the body.

stent: A device usually made from metal or other material that is placed in a blood vessel to help keep it open.

sternotomy: An incision usually made from near the neck to the lower portion of the chest through the middle of the sternum (breastbone). The sternum is then opened so the heart is exposed.

stethoscope: A device used for listening to the inner workings of the body, including the chest, intestines, abdomen, and blood vessels.

stress test: See exercise stress test.

stroke: Also referred to as a cerebral vascular accident, or CVA. It can be caused by a blood vessel in the brain becoming blocked or rupturing, a blood clot or other material traveling to the brain and lodging in a blood vessel, or a tumor causing an expansion or pressure in the brain. This will often result in some type of a neurological deficit such as impaired speech, reduced function of an arm or leg, or possible loss of vision, coma, or even death.

subclavian artery: An artery that arises from the aortic arch and supplies the upper chest and left arm with blood. The right subclavian artery arises from the innominate artery and supplies the upper chest and right arm with blood.

superior vena cava: The main vein that drains the unoxygenated blood from the upper portion of the body, head, and

neck, and channels blood back into the right atrium.

Swan-Ganz catheter: A catheter that is usually guided through the heart into the pulmonary artery, where it can be used to measure pressures in the heart and pulmonary artery, as well as take blood samples, administer intravenous drugs, and measure cardiac output.

syncope: Temporary loss of consciousness. Also referred to as fainting, blacking out or passing out.

syndrome: A group of signs and symptoms that collectively indicate a certain type of abnormality or disease process.

systemic circulation: The portion of the blood circulating throughout the body except for the blood that's being pumped to the lungs and is returning. This is called the pulmonary circulation.

systole: Means the heart is contracting. It usually means the ventricles are contracting, but it can also refer to atrial contraction.

tachycardia: An abnormally fast heart rate, usually referring to a heart rate of more than one hundred beats per minute.

tachycardia, ventricular: A rapid heart rate originating in the ventricles. It is a regular, fast rhythm that can be life threatening.

tachypnea: Abnormal rapid breathing.

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tetralogy of Fallot: A congenital heart defect that consists of four different abnormalities. The four defects are: 1. Abnormal opening between the right and left ventricles, or ventricular septal defect; 2. Abnormal position of the aorta, which partially overrides the right and left ventricular hole or defect; 3. Obstruction of blood flow to the lungs. Sometimes this is a buildup of muscle tissue in the right ventricle, or it can be an obstruction of the pulmonary valve; 4. Abnormal thickening of the right ventricle.

thallium scanning: A type of a nuclear perfusion test using a tiny number of radioactive particles that is injected into the bloodstream. This test is used to determine blood flow to various portions of the heart muscle. It is frequently done with some type of an exercise test so physicians can better determine which areas of the heart muscle are getting adequate amounts of blood.

thoracic: Pertaining to the chest.

thoracic surgeon: *See* cardiac surgeon.

thromboembolism: A blood clot that has broken loose from one area of the blood vessels or heart and traveled to another area.

thrombolytic agents: Drugs used to dissolve blood clots.

thrombolytic therapy: The procedure by which drugs are administered to help dissolve blood clots.

thrombosis: The development of a blood clot in the blood vessels or heart.

thrombus: A blood clot, usually in an artery or the heart.

transesophageal echocardiogram: A form of echocardiogram, or diagnostic test, using a special small tube that is passed through the mouth into the throat and down into the esophagus. This differs from the transthoracic echocardiogram, in which the echo probe is placed on the chest over the heart and moved around so that pictures can be obtained from various angles. With the transesophageal echocardiogram, the probe is very close to the heart, and certain structures can be better seen.

transient ischemic attack: Also referred to as a TIA. A condition in which a portion of the brain temporarily does not get enough oxygenated blood. It may result in temporary conditions such as slurred speech, partial loss of vision, weakness of an arm or a leg, or other neurologic conditions.

transposition of the great arteries: A severe form of congenital heart defect in which the aorta, which normally comes off the left ventricle, instead originates from the right ventricle, and the pulmonary artery, which normally originates from the right ventricle, originates from the left ventricle. As a result of this condition, children are usually cyanotic or bluish in color. This condition requires heart surgery to correct it.

transvenous: Through a vein.

tricuspid valve: The one-way heart valve located between the right atrium and the

right ventricle. Tricuspid can also refer to the aortic valve and the pulmonary valve, which each have three cusps, or flaps.

triglyceride: A form of lipid that is obtained in the diet through animal fat and certain vegetables. Triglycerides can also be produced by the body. If triglyceride levels are abnormally elevated, there may be an increased risk of developing coronary artery disease.

truncus arteriosus: A congenital heart defect in which the aorta and pulmonary artery are one artery instead of two. There are various forms of this defect.

ultrasonography: An imaging test using sound waves to outline various internal structures and organs, used to determine potential abnormal conditions.

vagus nerve: A nerve running from the base of the skull into the abdomen. It gives off branches to various structures, and its main effect on the heart is to slow heart rate.

valves: Structures in the heart and blood vessels that control blood flow. When working properly, they direct the blood flow so it can only go in one direction.

valvular insufficiency: When a heart valve allows blood to leak backwards.

valvuloplasty: *See* commissurotomy.

valvulotomy: *See* commissurotomy.

varicose veins: Veins that are abnormally dilated and engorged. Often these veins are visible under the skin in the legs.

vascular: Referring to blood vessels.

vascular ring: A birth defect of the aortic arch and its branches whereby these branches form a ring around the esophagus and the trachea (windpipe) and compress them. These abnormalities can be so severe as to cause the death of an infant. Fortunately, if necessary vascular ring abnormalities can be corrected with surgical procedures.

vascular surgeon: Also peripheral vascular surgeon. A physician who specializes in surgery of the blood vessels, usually those in the head and neck, the abdomen, the arms, and the legs, and to some extent of the chest. There is some overlap between the areas of expertise of cardiovascular surgeons and peripheral vascular surgeons.

vascular tree: Refers to the blood vessels with their various branches. The arterial branches become smaller arterioles and eventually tiny capillaries. From there, unoxygenated blood is transferred into small venules, then to the larger veins as they return to the heart.

vein: Vessels that channel unoxygenated blood from the capillaries back to the heart.

ventricles: The two main pumping chambers of the heart. There are right and left ventricles.

ventricular fibrillation: A fatal heart rhythm in which the ventricles contract in a chaotic manner, and the heart cannot pump

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blood. It is a very dangerous condition that results in death if not treated immediately.

ventricular septal defect: A hole in the wall between the right and left ventricles. It can be a congenital heart defect or it can occur as a result of either a heart attack or possible trauma to the heart.

vertebral arteries: Two arteries that supply blood to the brain. They originate at the right and left subclavian arteries.

white blood cell: *See* leukocyte.

xenograft: Same as heterograft. Graft tissue taken from an animal of one species and used in another species. Pig heart valves, which are commonly used to replace heart valves in humans, are one form of xenograft. If a pig valve is put back in another pig, it is called an allograft. If the pig valve is put back in the same pig (usually to replace one of the heart valves), it is called an autograft.