

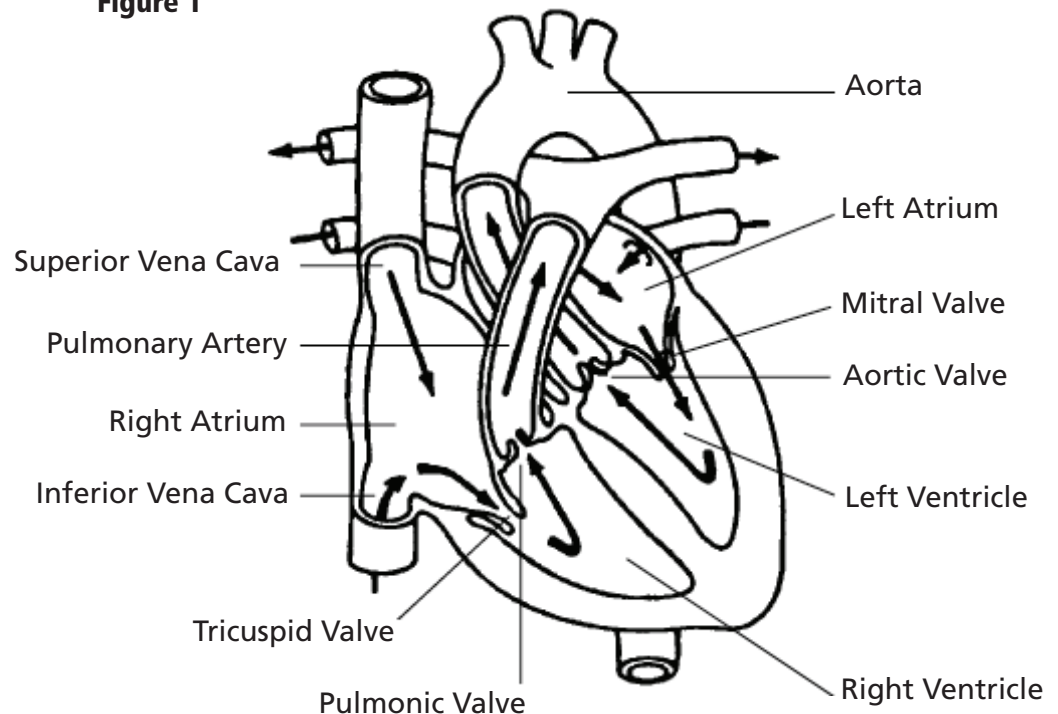
Your Heart and How It Works

The Heart

The heart needs oxygen to do its work well.

The heart is a muscular organ about the size of a closed fist. It pumps blood to the lungs and to all the body tissues. The heart has 4 chambers. The 2 upper, thin-walled chambers are the right atrium and left atrium. The 2 larger, more powerful chambers are the right ventricle and left ventricle. The right heart chambers receive blood from the body and pump it to the lungs. There, the blood picks up oxygen and gives up carbon dioxide. The left heart chambers receive this oxygen-rich blood from the lungs and pump it to all parts of the body. Four “one-way” valves control the flow of blood through the heart. The mitral valve is located between the left atrium and left ventricle. The tricuspid valve is between the right atrium and right ventricle. Two other valves are found just before the aorta and pulmonary artery. These are called the aortic and pulmonic valves (See Figure 1).

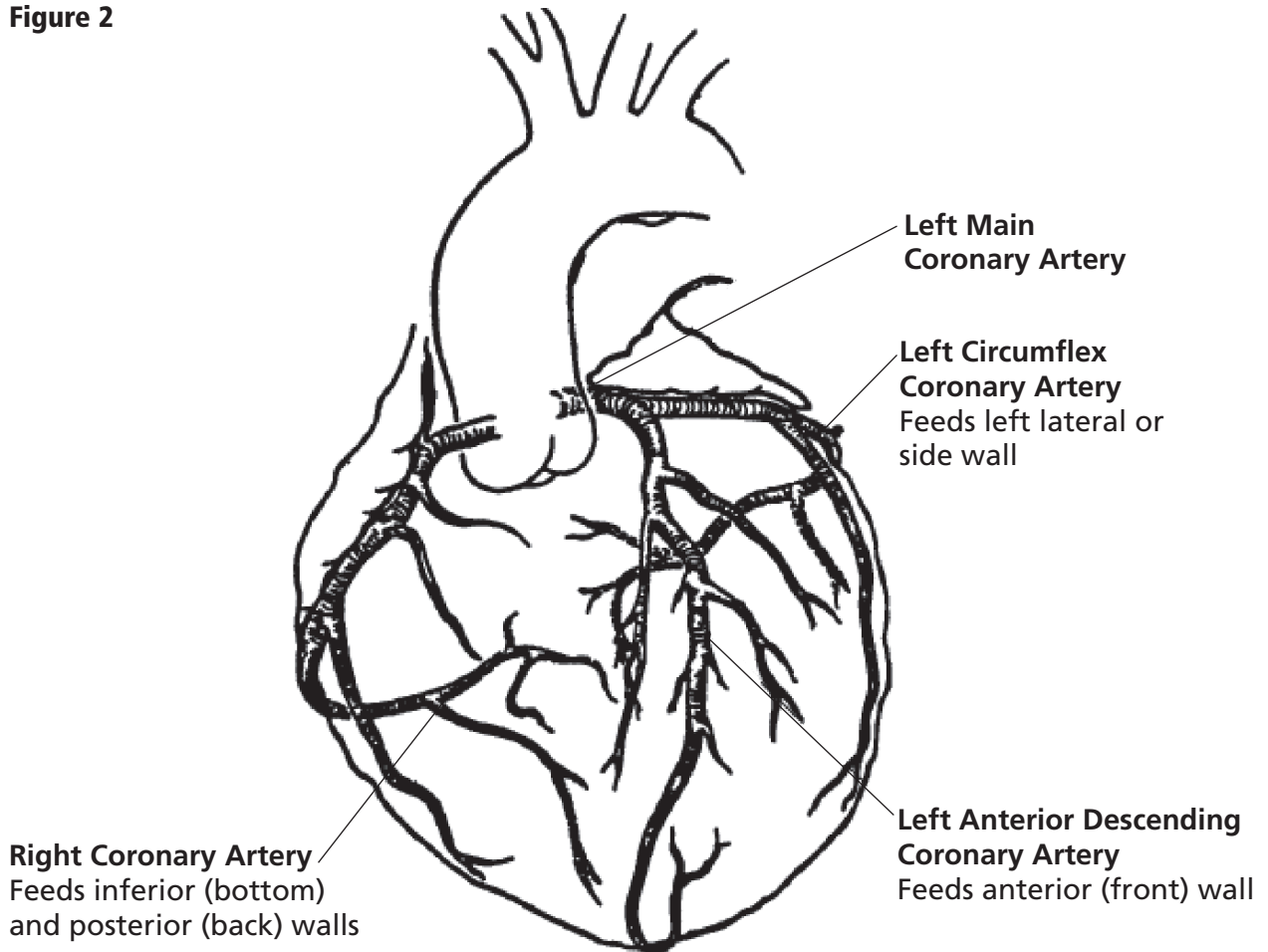
Figure 1



Coronary Arteries

The heart, like any other muscle, needs oxygen to do its work well. Oxygen is delivered to the heart via coronary arteries that lie on the surface of the heart (See Figure 2).

Figure 2



Coronary Artery Disease (CAD)

Atherosclerosis (“hardening of the arteries”) is a slow process in which deposits of fat, cholesterol and calcium build up inside the artery. These deposits are called “plaque.” Like the inside of a rusty water pipe, the artery wall becomes rough, hard and more narrow. When the heart vessels are affected, as in CAD, blood flow and oxygen to the heart are decreased. Over time, the plaque can rupture and cause a blood clot to form. With the plaque, this clot can further block the blood and oxygen supply to the heart muscle.

CAD disease can cause:

- *Stable Angina*—chest pain or discomfort due to a decrease in blood flow.
- *Acute Coronary Syndrome (ACS)*—a condition that often occurs when plaque ruptures. This can cause unstable angina or a heart attack (myocardial infarction).
- *Heart Failure*—a condition in which the heart muscle may become weak, stiff or thickened, limiting how well it can pump blood to the body. Heart failure can result from damage to the heart muscle from CAD as after a heart attack. It also can be caused by high blood pressure (hypertension), heart valve disease, infection of the heart muscle or other heart defects.

Ask your doctor or nurse for more information on how to improve and maintain your health.

Health Information Resources

For more information, visit one of Northwestern Memorial Hospital's Health Learning Centers. These state-of-the-art health libraries are located on the third floor of the Galter Pavilion and on the first floor of the Prentice Women's Hospital. Health information professionals are available to help you find the information you need and provide you with personalized support at no charge. You may contact the Health Learning Centers by calling 312-926-LINK (5465) or by sending an e-mail to hlc@nmh.org.

For additional information about Northwestern Memorial Hospital, please visit our Web site at www.nmh.org.

Para asistencia en español, por favor llamar a el departamento de representantes para pacientes al 312-926-3112.

Northwestern Memorial is an equal opportunity employer that welcomes, respects and serves with dignity all people and does not discriminate, including in hiring, or employment, or admission, or access to, or treatment in its programs or activities on the basis of race, color, gender, national origin, religion, disability, handicap, age, Vietnam or other veteran status, sexual orientation or any other status protected by relevant law. To arrange for TDD/TTY, auxiliary aids and foreign language interpretation services, call the Patient Representative department at 312-926-3112, TDD number 312-926-6363. Issues related to the Rehabilitation Act of 1973 should be directed to the director of Employee Relations or designee at 312-926-7297.

Developed by: Cardiac Nursing

© July 2010 Northwestern Memorial Hospital

For more information about Northwestern Memorial Hospital, please visit www.nmh.org.

1100-07

900626 (07/10)