12.1: The Cardiovascular System

The cardiovascular system includes the heart and blood vessels. The blood vessels include arteries, veins, and capillaries. In pictures of the circulatory system, arteries are typically represented by red blood vessels and veins are typically represented as blue blood vessels. Red is used for arteries because most arteries carry oxygenated blood or red blood. Veins typically carry deoxygenated blood, or blue blood.

Arteries take oxygenated blood to the organs and tissues. Our organs and tissues use the oxygen and then the deoxygenated blood is returned to the heart through our veins. Most of the oxygenated blood is used by our kidneys, gastrointestinal system, and skeletal muscle.

The heart is the power, the pumping force, behind the circulation of blood through the arteries and veins. The faster the heart beats the more oxygen is transported throughout the body. The heart has four chambers: the right atrium, right ventricle, left atrium, and left ventricle. The heart is divided into two halves, each half has a very important function.
Deoxygenated blood enters the heart on the right side through the right atrium. The blood moves from the right atrium to the right ventricle and then leaves the heart through the pulmonary artery to go to the lungs. The lungs re-oxygenate the blood. The oxygenated blood then goes back to the heart through the pulmonary vein. The blood enters the left atrium, travels down to the left ventricle, and then leaves the heart through the aorta.

Heart Disease and Stroke Facts

Heart Disease Facts

- Heart disease is the leading cause of death for both men and women.
- About 610,000 Americans die from heart disease each year—that’s 1 in every 4 deaths.
- Coronary heart disease is the most common type of heart disease, killing about 365,000 people in 2014.
- In the United States, someone has a heart attack every 42 seconds. Each minute, someone in the United States dies from a heart disease-related event.
- Heart disease is the leading cause of death for people of most racial/ethnic groups in the United States, including African Americans, Hispanics, and whites. For Asian Americans or Pacific Islanders and American Indians or Alaska Natives, heart disease is second only to cancer.
- Heart disease costs the United States about $207 billion each year. This total includes the cost of health care services, medications, and lost productivity.
Risk Factors

High blood pressure, high LDL cholesterol, and smoking are key risk factors for heart disease. About half of Americans (49%) have at least one of these three risk factors.

Several other medical conditions and lifestyle choices can also put people at a higher risk for heart disease, including:

- Diabetes
- Overweight and obesity
- Poor diet
- Physical inactivity
- Excessive alcohol use

Stroke Facts

- Stroke is the fifth leading cause of death in the United States, killing more than 130,000 Americans each year—that’s 1 of every 20 deaths.

- A stroke, sometimes called a brain attack, occurs when a clot blocks the blood supply to the brain or when a blood vessel in the brain bursts.

- Someone in the United States has a stroke every 40 seconds. Every four minutes, someone dies of stroke.

- Every year, about 795,000 people in the United States have a stroke. About 610,000 of these are first or new strokes; 185,000 are recurrent strokes.

- Stroke is an important cause of disability. Stroke reduces mobility in more than half of stroke survivors age 65 and over.
• Stroke costs the nation $33 billion annually, including the cost of health care services, medications, and lost productivity.

• You can’t control some stroke risk factors, like heredity, age, gender, and ethnicity. Some medical conditions—including high blood pressure, high cholesterol, heart disease, diabetes, overweight or obesity, and previous stroke or transient ischemic attack (TIA)—can also raise your stroke risk. Avoiding smoking and drinking too much alcohol, eating a balanced diet, and getting exercise are all choices you can make to reduce your risk.

Common Stroke Warning Signs and Symptoms

• Sudden numbness or weakness of the face, arm, or leg—especially on one side of the body.

• Sudden confusion, trouble speaking or understanding.

• Sudden trouble seeing in one or both eyes.

• Sudden trouble walking, dizziness, loss of balance or coordination.

• Sudden severe headache with no known cause.