

**OBJECTIVES:**

- *Review of heart anatomy
- *Review of heart disease
- *Review ways to assist clients with heart disease

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References:

<https://www.nia.nih.gov/health/heart-health/heart-health-and-aging#:~:text=Changes%20in%20the%20heart%20and%20blood%20vessels%20that%20happen%20with,cognitive%20health%20in%20older%20adults>.

<https://www.cdc.gov/heart-disease/about/index.html#:~:text=is%20heart%20disease%20term%20%22heart%20disease%22%20refers%20to%20several%20types%20of%20heart,Excessive%20alcohol%20use>

MedlinePlus, National Library of Medicine

Heart Disease

The heart is a strong muscle that pumps blood to your body. A normal, healthy adult heart is about the size of your clenched fist. Different parts of the heart have different functions. The right-side pumps blood to the lungs to pick up oxygen. The left side receives oxygen-rich blood from the lungs and pumps it through arteries throughout the body. An electrical system in the heart controls the heart rate (heartbeat or pulse) and coordinates the contraction of the heart's top and bottom chambers. This is a link to a video animation to learn how your heart works to circulate blood throughout the body- How a Healthy Heart Pumps Blood from the American Heart Association

<https://www.youtube.com/watch?v=zHo-oVOqu1I>

Changes in the heart and blood vessels that happen with age may increase a person's risk of heart disease and related health problems. Heart disease is a major cause of disability that can limit activity and erode quality of life for older people and heart disease is the number one cause of death in the United States. A person should talk with their doctor or other healthcare provider if they have any concerns about their heart as they age. Some risk factors for heart disease may also be linked to cognitive (e.g. thinking, reasoning, or remembering) health, including a person's risk of dementia later in life. The good news is there are things a person can do, such as controlling their blood pressure that may help delay or lower their risk. Taking better care of your overall cardiovascular health can help protect both your brain and your heart.

As a person gets older, it's important for them to have their blood pressure and cholesterol levels checked regularly, even if they are healthy. High blood pressure could lead to stroke and problems with a person's heart, eyes, brain, and kidneys. High cholesterol can also lead to serious health problems, such as a heart attack, cardiac arrest, or stroke. A person should talk to their doctor or other health care provider about exercise, dietary changes, and medications that can help manage their blood pressure and cholesterol levels. Heart disease, also called cardiovascular disease, is a general term used to describe a variety of conditions that affect the heart's structure and how the heart works. Heart disease includes:

- Arteriosclerosis sometimes called "hardening of the arteries," refers to increased stiffness of the large arteries. This can cause high blood pressure (hypertension), which becomes more common with age.
- Atherosclerosis is the slow buildup of fatty deposits, called plaques, in the walls of the coronary arteries. It is common, but it is not a normal part of aging. The buildup can also occur in arteries of the brain and legs, increasing the risk of stroke, and leg muscles not getting enough blood.
- Angina is pain or discomfort that usually occurs in the chest but can also be felt in the neck or left arm. Angina is caused by decreased blood flow to the heart due to plaque buildup or a plaque that breaks off and restricts blood flow in a coronary artery, which supplies the heart muscle with oxygen and nutrients.
- A heart attack occurs when blood flow to the heart is blocked, and the heart muscle does not get enough oxygen and nutrients.

Heart Disease

The most common type of heart disease in the United States is coronary artery disease (CAD). CAD is caused by plaque buildup in the walls of the arteries that supply blood to the heart. CAD affects the blood flow to the heart. Angina is chest pain from lack of blood flow. Decreased blood flow can cause a heart attack.

Heart failure occurs when one or both sides of the heart cannot pump enough blood to meet the body's needs. It develops over time as the pumping action of the heart gets weaker, or if it becomes difficult for the heart to adequately fill with blood between heartbeats. Heart failure does not mean that the heart has stopped or is about to stop working. When heart failure affects the left side of the heart, the heart cannot pump enough oxygen-rich blood to the rest of the body. When it affects the right side of the heart, the heart cannot pump enough blood to the lungs to pick up oxygen. When the heart is weakened by heart failure, resulting symptoms can include shortness of breath and swelling in the feet, ankles, abdomen, and legs. Older adults with long-term high blood pressure and obesity are at greater risk of developing heart failure. In these people, heart failure results from thickened and stiff heart muscle that relaxes too slowly. Although the heart muscle is not damaged or weak in this type of heart failure, if left untreated, the condition can be debilitating and make it difficult to do even basic activities. Heart failure can be caused by other diseases or conditions that damage the heart muscle, such as coronary artery disease, cardiomyopathy (disease of the heart muscle), heart inflammation, heart attacks, diabetes, viral illnesses, long-term use of alcohol, and high blood pressure. Treating these problems before the heart muscle is damaged can help prevent heart failure. Buildup of a protein called amyloid within the heart muscle can be another cause of heart failure, especially in older adults of African, Hispanic, or Caribbean descent. If the condition is found early in these individuals, treatment for the buildup may be available to help prevent heart failure.

An arrhythmia is a problem with the rate or rhythm of a person's heartbeat. It means that their heart beats too quickly, too slowly, or with an irregular pattern. When the heart beats faster than normal, it is called tachycardia. When the heart beats too slowly, it is called bradycardia. The most common type of arrhythmia is atrial fibrillation also called A-fib, which causes an irregular and fast heart beat and can lead to blood clots and stroke.

Hypertension (high blood pressure) - With every heartbeat, blood is pumped into arteries. Blood pressure is the force of blood pressing against artery walls. Pressure is higher when the heart beats and pressure is lower when the heart rests. A person with high blood pressure may not have symptoms or realize their blood pressure is high. Over time, high blood pressure causes the heart to work harder leading to other disorders (i.e. heart attack, heart failure, stroke, kidney failure).

Treatment plans for heart disease depend on the type of heart disease a person has, how serious their symptoms are, and what other health conditions they have. Possible treatments may include:

- Heart-healthy lifestyle changes such as a diet low in fat and salt, maintaining a healthy weight, no smoking, regular exercise, limiting caffeine and alcohol, managing stress, and sleeping well.
- Medicines- there are medicines to lower blood pressure, and to manage different heart diseases. There are medications that can strengthen the heart muscle, decrease strain on the heart, and reduce fluid buildup.
- Procedures or surgeries such as coronary artery bypass grafting (CABG), also called heart bypass surgery or angioplasty also known as balloon angioplasty.
- Oxygen therapy- a client may be prescribed oxygen therapy. Use oxygen safety precautions when working with a client who uses oxygen. The client may use oxygen only when needed or continually.
- Cardiac rehabilitation (rehab) is a medically supervised program designed to improve a person's cardiovascular health if they have experienced a heart attack, heart failure, angioplasty or heart surgery. It includes exercise counseling and training, education for heart healthy living, and counseling to reduce stress.

Heart Disease

- Nutrition- Assist with special diet needs (low fat, low sodium), encourage healthy eating. Assist clients with any dietary needs with meal preparation and help clients to follow their diet and fluid needs. Too much salt (sodium) in a person's diet can cause fluid retention, which can increase blood pressure. High blood pressure is a major risk factor for heart attack, stroke and heart failure. A person can take in sodium not just from adding salt to meals but also from prepared and packaged foods. If a person is on a fluid limitation, help the client to keep up with how much they are drinking and urinating.
- Activity- The activities of a person with heart disease may be limited depending on the severity of the condition. Promote and assist with a client's activity level according to the plan of care, provide rest breaks as needed for client's shortness of breath, and follow safety precautions related to falls.
- Post surgical care- a person who had surgery may have a surgical wound. Report any issues you notice or that your client reports regarding their wound site such as redness, swelling, pain, white, yellow, or brown fluid that might be slightly thick in texture.
- Safety- a client with heart disease may be weak after a surgical procedure or due to their condition. Help the person to move and get around as assigned and follow safety precautions to prevent falls. Report to your supervisor according to the plan of care if the client has a change in their ability to walk or move around.
- Observe, record, and report according to the plan of care if the client does not understand how to take their prescribed medications, or if you notice the client is not taking their medication. Report changes in the client's condition such as increased swelling in the legs, ankles or other parts of the body or a change in their breathing such as increased shortness of breath. Report if the client has a decrease in activity level and is more tired than usual and or is dizzy. A client who can get early medical treatment for a change in condition may be able to avoid a hospital stay and a worsening condition.
- ADL and IADL's- Providing assistance with activities of daily is an important role for an In-home aide. A person may need varying levels of assistance according to their disease progression and condition. The ADL's such as mobility, eating, bathing, dressing, and toileting that the client will need assistance with will be on a plan of care. Providing assistance with meal preparation, housekeeping, medication reminders, shopping, errands, transportation, money management, and other instrumental activities of daily living are another important role for an In-home aide that will be on a plan of care.

A heart attack happens when blood flow to the heart suddenly becomes blocked. Without the blood coming in, the heart can't get oxygen. If not treated quickly, the heart muscle begins to die. But if you do get quick treatment, you may be able to prevent or limit damage to the heart muscle. That's why it's important to know the symptoms of a heart attack and call 911 if you or someone else is having them. You should call, even if you are not sure that it is a heart attack.

The most common symptoms in men and women are:

- **Chest discomfort.** It is often in center or left side of the chest. It usually lasts more than a few minutes. It may go away and come back. It can feel like pressure, squeezing, fullness, or pain. It also can feel like heartburn or indigestion.
- **Shortness of breath.** Sometimes this is your only symptom. You may get it before or during the chest discomfort. It can happen when you are resting or doing a little bit of physical activity.
- **Discomfort in the upper body.** You may feel pain or discomfort in one or both arms, the back, shoulders, neck, jaw, or upper part of the stomach.

You may also have other symptoms, such as nausea, vomiting, dizziness, and lightheadedness. You may break out in a cold sweat. Sometimes women will have different symptoms than men. For example, they are more likely to feel tired for no reason.