



# Lifestyle Diseases

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Chapter 31 Lesson 1

# What is Cardiovascular Disease

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- Cardiovascular disease is the number one killer in the US today.
  - **Cardiovascular diseases-** *medical disorders that affect the heart and blood vessels.*
  - According to the centers for disease control, CVDs account for over 45% of all deaths among people in the US age 45 and older.
  - The lifestyle choices and health habits you adopt now can have a direct influence on whether you will be a candidate for a CVD in the future.
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# Risk Factors for Cardiovascular Disease

- **Heredity-** a tendency toward heart disease runs in families. Children of parents with **hypertension**, or *high blood pressure*, are also more likely to develop this CVD.
- **Ethnicity-** Some ethnic groups are at a greater risk than others for developing a CVD. For example, for unknown reasons African Americans are twice as likely as whites to develop high blood pressure.
- **Gender-** Males have a greater risk of heart disease and stroke than females. At the same time, the latest studies show indicate that heart attacks are the number one killer of American women, and their chances of survival are lower than those of men.

# Risk Factors cont.

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- **Age-** Risk of CVDs increase with age. Heart attack death rates increase markedly after the age of 45, with 55% of all heart attack victims being 65 and older. Risk of stroke increases dramatically with age.
  - **Environment-** environmental factors such as smog are beyond your control, another form of air pollution- tobacco smoke from a cigar, pipe, or cigarette- is often avoidable. Stress, is also a controllable environmental risk factor.
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# Behavior

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- Behavior is the one aspect you have control over.
  - Making the right healthful choices now, while you are young, can reduce your risk of developing a CVD later in life. These choices include ample physical activity, electing not to smoke, and moderation and balance in your food selections.
  - Because of the link between lifestyle and CVDs, these diseases are often referred to as “lifestyle diseases”.
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# Types of Cardiovascular Diseases

- **Hypertension-** Blood pressure is the force of blood against the walls of blood vessels as it flows through the circulatory system. The force is created by the contraction of the heart muscle and the resistance of the vessel wall. Normal blood pressure varies with age, height, weight, and other factors. If a person's blood pressure stays above his or her normal pressure, the person is said to have hypertension. An estimated 60 million Americans suffer from hypertension. Hypertension is known as the “silent killer” because it shows very few symptoms in early stages and often goes untreated. Hypertension cannot be cured, but can be controlled through basic lifestyle changes such as eating well, losing weight, and exercising.

# Diseases of the Arteries

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- At birth, the lining of the blood vessels is smooth. Over the years, many deposits, called **plaque**, build up along the inner lining of the arteries. The build-up is due mainly to food choices. If this build-up continues, **arteriosclerosis**- *hardening of the arteries* occurs.
  - Arteriosclerosis is a condition in which the walls of arteries become thick and lose their elasticity.
  - As fatty deposits accumulate, blood vessels narrow. This condition is called **atherosclerosis**, and can result in blockage of the arteries. Foods high in fat and cholesterol are key contributors to atherosclerosis.
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# Diseases of the Heart

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- When atherosclerosis becomes severe enough, the blood vessels leading to the heart become blocked. Normal oxygen supply is cut off. This sends off a warning signal in the form of **angina pectoris**- *a pain and tightness in the chest caused by lack of oxygen to the heart*. Angina pain is like an SOS from the body warning the heart is in distress. Angina pain typically lasts a few minutes. Treatment includes medications that relax the blood vessels.
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# Heart Attack

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- If the distress of angina continues over time, eventually heart attack occurs. A heart attack is caused by insufficient oxygen and nutrients to the heart muscle cells.
  - A heart attack can occur at any time and usually happens without warning. Immediate response to early warning signs, which include discomfort in the middle of the chest, can mean the difference between life and death. Symptoms include: pressure, fullness, squeezing, aching, nausea, vomiting, sweating, and shortness of breath.
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# Heart Attack cont.

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- Depending on the amount of tissue death, a heart attack can cause death or a decrease in heart function. An immediate cause of death in many heart attacks is **fibrillation**- *the rapid ineffective beating of the heart in one of two chambers called ventricles.*
  - Ventricular fibrillation is also known as cardiac arrest. When this occurs CPR should be initiated as soon as possible.
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# Congestive Heart Failure

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- Heart attack is an immediate event in response to stress of the heart. Sometimes the result of years of arteriosclerosis, and hypertension result not in a heart attack but **congestive heart failure**- *a slow gradual weakening of the heart muscle from overwork.*
  - Congestive heart failure can be brought about by the use of certain illegal drugs.
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# Stroke

- Sometimes arterial blockage affects the blood supply to the brain. When blockage is severe, **stroke**- *an interruption of the flow of blood to any part of the brain*- may occur. Warning signs of a stroke are: sudden weakness or numbness of the face, arm and leg on one side of the body; loss of speech, or trouble speaking or understanding people; sudden dimness or loss of vision; unexplained dizziness, unsteadiness, or sudden falls.
- One of the most common causes of a stroke is the blocking of a cerebral artery by a blood clot or, *thrombus*. Sometimes a disease artery in the brain can burst and flood the brain with blood called a *cerebral hemorrhage*. This is more likely to occur when a person suffers from a combination of atherosclerosis and hypertension.

# Treating Cardiovascular Diseases

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- **Electrocardiogram-** produces a graph of the electrical activity of the heart's rhythm. An EKG can help detect the nature of the heart attack, and how the heart is behaving.
  - **Radionuclide Imaging-** This process includes several tests that involve the injection of substances called *radionuclides* in the blood. Following the progress of the radionuclides on a computer screen, technicians are able to determine how much blood is being supplied to the heart, how well its chambers are functioning, and whether there is any damage to the heart.
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# Treating CVDs cont.

- **Phonocardiography**- This process involves placing a microphone on a person's chest to record heart sounds and signals, which are transferred through photography to graph paper. A professional then examines the tracings for heartbeat irregularities.
- **Coronary Angiography**- This procedure is used to help evaluate the extent of coronary artery disease. This procedure uses a **catheter**- *a thin flexible tube*, that can be guided through blood vessels to the heart. When dye is injected into the catheter, motion x-rays can be taken, by which narrow or obstructed areas to the heart can be detected.

# Treating CVDs cont.

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- **Artificial pacemaker-** If the heart's natural pacemaker fails, an artificial one is implanted in the chest and wired to the heart. The pacemaker can be set to work on demand when the natural heartbeat is too slow, or at a fixed rate all the time.
  - **Magnetic resonance imaging-** This test uses powerful magnets to look inside the body. Images of the heart muscle are transferred to a computer, allowing technicians to identify damage from a heart attack and diagnose certain congenital heart defects.
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# Surgical Procedures

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- **Heart Transplant-** If a patient's heart is badly damaged by heart disease, doctors may remove the weak heart and replace it with a heart from a person who recently died.
  - **Coronary bypass surgery-** creates detours around obstructed or narrow coronary arteries so that more blood can reach the heart. In this operation, a large vein from the patient's leg is grafted onto the heart. This allows blood to flow to the area that was not getting enough blood.
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# Surgical Procedures cont.

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- **Balloon angioplasty-** Involves threading a balloon-tipped catheter through the body to the site of the blockage. As the balloon is inflated, it pushes the plaque against the artery wall, opening a path for blood to flow through.
  - **Heart valve surgery-** Valves control the proper flow of blood through the heart. Defective valves may be present at birth, or develop later in life. A valve may be too tight, which can restrict flow of blood, or not close tightly enough causing blood to flow backwards. A surgical procedure replaces a defective valve with an artificial one made of metal or plastic.
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# Prevention of CVD

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- Avoid the use of tobacco products, alcohol, and drugs.
  - Reduce your intake of cholesterol.
  - Maintain a healthy weight.
  - Limit your intake of salty foods, avoid adding salt.
  - Get plenty of exercise.
  - Manage stress in your life.
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