

question	answer	source	focus_area
What is (are) Heart Attack ?	Blood Flow to the Heart Is Blocked The heart works 24 hours a day, pumping oxygen and nutrient-rich blood to the body. Blood is supplied to the heart through its coronary arteries. If a blood clot suddenly blocks a coronary	NIHSeniorHealth	Heart Attack
What are the symptoms of Heart Attack ?	Symptoms Can Vary Not all heart attacks begin with the sudden, crushing chest pain that often is shown on TV or in the movies. The warning signs and symptoms of a heart attack aren't the same for everyone. Many heart a	NIHSeniorHealth	Heart Attack
What causes Heart Attack ?	Most heart attacks are caused by a blood clot that blocks one of the coronary arteries, the blood vessels that bring blood and oxygen to the heart muscle. When blood cannot reach part of your heart, that area starves for ox	NIHSeniorHealth	Heart Attack
Who is at risk for Heart Attack? ?	Lowering your risk factors for coronary heart disease (CHD) can help you prevent a heart attack. Even if you already have CHD or have already had a heart attack, you can still take steps to lower your risk. These steps involv	NIHSeniorHealth	Heart Attack
How to diagnose Heart Attack ?	If You Have Symptoms, Call 9-1-1 Diagnosis and treatment of a heart attack can begin when emergency personnel arrive after you call 9-1-1. Do not put off calling 9-1-1 because you are not sure that you are having a heart t	NIHSeniorHealth	Heart Attack
What are the treatments for Heart Attack ?	Heart attacks are a leading killer of both men and women in the United States. The good news is that excellent treatments are available for heart attacks. These treatments can save lives and prevent disabilities. Heart attack t	NIHSeniorHealth	Heart Attack
What is (are) Heart Attack ?	A heart attack occurs when the supply of blood and oxygen to an area of the heart muscle is blocked, usually by a blood clot in a coronary artery. If the blockage is not treated within a few hours, the heart muscle will be perm	NIHSeniorHealth	Heart Attack
What causes Heart Attack ?	Coronary heart disease, or CHD, is the most common underlying cause of a heart attack. Coronary arteries are the blood vessels that bring blood and oxygen to the heart muscle. Most heart attacks are caused by a blood cl	NIHSeniorHealth	Heart Attack
What are the symptoms of Heart Attack ?	Most heart attacks involve discomfort in the center of the chest that lasts more than a few minutes or goes away and comes back. The discomfort can feel like uncomfortable pressure, squeezing, fullness, or pain. It can inclu	NIHSeniorHealth	Heart Attack
What are the symptoms of Heart Attack ?	No. Most heart attack patients do not have all of the symptoms. The important thing to remember is that if you have any of the symptoms and they grow more intense, and last more than 5 minutes, you should call 9-1-1 imm	NIHSeniorHealth	Heart Attack
How many people are affected by Heart Attack ?	Very common. Each year, more than 1 million people in the U.S. have a heart attack and about half of them die. About one-half of those who die do so within 1 hour of the start of symptoms and before reaching the hospital.	NIHSeniorHealth	Heart Attack
Who is at risk for Heart Attack? ?	Certain factors increase the risk of developing coronary heart disease and having a heart attack. These risk factors include some things you cannot change. You are at greater risk if you - are a man over age 45 or a woman c	NIHSeniorHealth	Heart Attack
Who is at risk for Heart Attack? ?	You can lower your risk of having a heart attack, even if you have already had a heart attack or have been told that your chances of having a heart attack are high. To prevent a heart attack, you will need to make lifestyle char	NIHSeniorHealth	Heart Attack
How to diagnose Heart Attack ?	Several tests are used to diagnose a heart attack. - An electrocardiogram, also called an EKG, measures the rate and regularity of your heartbeat. - Blood tests identify and measure markers in the blood that can show how r	NIHSeniorHealth	Heart Attack
What are the treatments for Heart Attack ?	If you are having a heart attack, doctors will work quickly to restore blood flow to the heart and continuously monitor vital signs to detect and treat complications. Restoring blood flow to the heart can prevent or limit damage	NIHSeniorHealth	Heart Attack
What is (are) Heart Attack ?	Angina is a recurring pain or discomfort in the chest that happens when some part of the heart does not receive enough blood. An episode of angina is not a heart attack. However, people with angina may have a hard time ti	NIHSeniorHealth	Heart Attack
What are the treatments for Heart Attack ?	There are many medicines that are used to treat a heart attack. - Clot-busters or thrombolytic drugs dissolve blood clots that are blocking blood flow to the heart. - Beta blockers decrease the workload on your heart by slow	NIHSeniorHealth	Heart Attack
What is (are) Heart Attack ?	Having a heart attack increases your chances of having another one. Therefore, it is very important that you and your family know how and when to seek medical attention. Talk to your doctor about making an emergency act	NIHSeniorHealth	Heart Attack
What are the treatments for Heart Attack ?	After a heart attack, many people worry about having another heart attack. They often feel depressed and may have trouble adjusting to a new lifestyle. You should discuss your feelings with your doctor. Your doctor can give	NIHSeniorHealth	Heart Attack
What is (are) Heart Attack ?	More detailed information on heart attacks is available at www.nhlbi.nih.gov/health/odci .	NIHSeniorHealth	Heart Attack
What is (are) Heart Failure ?	In heart failure, the heart cannot pump enough blood to meet the body's needs. In some cases, the heart cannot fill with enough blood. In other cases, the heart can't pump blood to the rest of the body with enough force. Sc	NIHSeniorHealth	Heart Failure
What causes Heart Failure ?	Heart failure is caused by other diseases or conditions that damage the heart muscle such as coronary artery disease (including heart attacks), diabetes, and high blood pressure. Treating these problems can prevent or impr	NIHSeniorHealth	Heart Failure
Who is at risk for Heart Failure? ?	Preventing Heart Failure There are a number of things you can do to reduce the risk for coronary artery disease and heart failure. These things include - keeping your cholesterol levels healthy - keeping your blood pressure a	NIHSeniorHealth	Heart Failure
What are the symptoms of Heart Failure ?	Common Symptoms The most common symptoms of heart failure include shortness of breath or difficulty breathing, feeling tired, and swelling. Swelling usually occurs in the ankles, feet, legs, and sometimes in the abdomen	NIHSeniorHealth	Heart Failure
How to diagnose Heart Failure ?	Diagnosing Heart Failure There is not one specific test to diagnose heart failure. Because the symptoms are common for other conditions, your doctor will determine if you have heart failure by doing a detailed medical histor	NIHSeniorHealth	Heart Failure
What are the treatments for Heart Failure ?	There is no cure for heart failure, but it can be controlled by treating the underlying conditions that cause it. Treatment for heart failure will depend on the type and stage of heart failure (the severity of the condition). The goals	NIHSeniorHealth	Heart Failure
What is (are) Heart Failure ?	In heart failure, the heart cannot pump enough blood through the body. Heart failure develops over time as the pumping action of the heart gets weaker. Heart failure does not mean that the heart has stopped working or is at	NIHSeniorHealth	Heart Failure
What causes Heart Failure ?	Heart failure is caused by other diseases and conditions that damage the heart muscle. It is most commonly caused by coronary artery disease, including heart attack. Diabetes and high blood pressure also contribute to hes	NIHSeniorHealth	Heart Failure
What are the symptoms of Heart Failure ?	The most common symptoms of heart failure include shortness of breath or difficulty breathing, feeling tired, and swelling. Swelling is caused by fluid build-up in the body. Fluid buildup can lead to weight gain and frequent ur	NIHSeniorHealth	Heart Failure
How many people are affected by Heart Failure ?	Approximately 5 million people in the United States have heart failure. It contributes to 300,000 deaths each year. It is the number one cause of hospitalizations for people over the age of 65.	NIHSeniorHealth	Heart Failure
Who is at risk for Heart Failure? ?	Heart failure is more common in - people who are 65 years old or older - African-Americans - people who are overweight - people who have had a heart attack - men, people who are 65 years old or older African-America	NIHSeniorHealth	Heart Failure
How to prevent Heart Failure ?	Ways to prevent heart failure include - keeping your cholesterol and blood pressure levels healthy - keeping diabetes in check - quitting smoking - following a heart healthy diet - limiting the	NIHSeniorHealth	Heart Failure
What is (are) Heart Failure ?	Keeping your cholesterol levels healthy can help prevent coronary artery disease. Your goal for LDL, or "bad," cholesterol depends on how many other risk factors you have. Here are recommended LDL cholesterol goals. - If	NIHSeniorHealth	Heart Failure
How to diagnose Heart Failure ?	There is not one specific test to diagnose heart failure. Because the symptoms are common for other conditions, your doctor will determine if you have heart failure by doing a detailed medical history, an examination, and se	NIHSeniorHealth	Heart Failure
How to diagnose Heart Failure ?	Once initial tests have been performed, your doctor may decide to send you to a cardiologist, a specialist in diagnosis and treatment of heart disease. A cardiologist will perform a physical exam and may order other tests. Th	NIHSeniorHealth	Heart Failure
What are the treatments for Heart Failure ?	Treatment for heart failure includes lifestyle changes medications specialized care for those in advanced stages of the disease.	NIHSeniorHealth	Heart Failure
What are the treatments for Heart Failure ?	Lifestyle changes to treat heart failure may include - reducing salt and fluid intake - following a heart healthy diet - adopting a plan to lose weight - quitting smoking - engaging in physical activity, reducing salt and fluid int	NIHSeniorHealth	Heart Failure
What are the treatments for Heart Failure ?	Many medications are used to manage heart failure. They include diuretics, ACE inhibitors, beta blockers and digoxin. Diuretics are used to reduce fluid buildup. ACE inhibitors work to improve heart failure in many ways, incl	NIHSeniorHealth	Heart Failure
What are the treatments for Heart Failure ?	For severe heart failure, patients may require additional oxygen, a mechanical heart pump, or a heart transplant.	NIHSeniorHealth	Heart Failure
What is (are) Heart Failure ?	More detailed information on heart failure is available at http://www.nhlbi.nih.gov/health/odci	NIHSeniorHealth	Heart Failure
What is (are) Heart Valve Diseases ?	Your heart has four valves. Normally, these valves open to let blood flow through or out of your heart, and then shut to keep it from flowing backward. But sometimes they don't work properly. If they don't, you could have	MPPlusHealthTopics	Heart Valve Diseases
What is (are) Heart Diseases ?	If you're like most people, you think that heart disease is a problem for others. But heart disease is the number one killer in the U.S. It is also a major cause of disability. There are many different forms of heart disease. The m	MPPlusHealthTopics	Heart Diseases
What is (are) Mitral Valve Prolapse ?	Mitral valve prolapse (MVP) occurs when one of your heart's valves doesn't work properly. The flaps of the valve are "floppy" and don't close tightly. Most people who have the condition are born with it. It also tends to run in	MPPlusHealthTopics	Mitral Valve Prolapse
Do you have information about Coronary Artery Bypass Surgery	Summary : In coronary artery disease (CAD), the arteries that supply blood and oxygen to your heart muscle grow hardened and narrowed. You may try treatments such as lifestyle changes, medicines, and angioplasty, a pro	MPPlusHealthTopics	Coronary Artery Bypass Surgery
Do you have information about Cardiac Rehabilitation	Summary : Cardiac rehabilitation (rehab) is a medically supervised program to help people who have - A heart attack - Angioplasty or coronary artery bypass grafting for coronary heart disease - A heart valve repair or	MPPlusHealthTopics	Cardiac Rehabilitation
Do you have information about Heart Transplantation	Summary : A heart transplant removes a damaged or diseased heart and replaces it with a healthy one. The healthy heart comes from a donor who has died. It is the last resort for people with heart failure when all other treat	MPPlusHealthTopics	Heart Transplantation
What is (are) Pericardial Disorders ?	The pericardium is a membrane, or sac, that surrounds your heart. It holds the heart in place and helps it work properly. Problems with the pericardium include - Pericarditis - an inflammation of the sac. It can be from a vi	MPPlusHealthTopics	Pericardial Disorders
What is (are) Heart Diseases--Prevention ?	Heart disease is the leading cause of death in the U.S. It is also a major cause of disability. The risk of heart disease increases as you age. You have a greater risk of heart disease if you are a man over age 45 or a woman ove	MPPlusHealthTopics	Heart Diseases--Prevention
What is (are) Cardiac Arrest ?	The heart has an internal electrical system that controls the rhythm of the heartbeat. Problems can cause abnormal heart rhythms, called arrhythmias. There are many types of arrhythmia. During an arrhythmia, the heart can l	MPPlusHealthTopics	Cardiac Arrest
Do you have information about Heart Surgery	Summary : Heart surgery can correct problems with the heart if other treatments haven't worked or can't be used. The most common type of heart surgery for adults is coronary artery bypass grafting (CABG). During CABG, i	MPPlusHealthTopics	Heart Surgery
What are the symptoms of Cardiomyopathy dilated with woolly hair and keratoderma ?	What are the signs and symptoms of Cardiomyopathy dilated with woolly hair and keratoderma? The Human Phenotype Ontology provides the following list of signs and symptoms for Cardiomyopathy dilated with woolly hai	GARD	Cardiomyopathy dilated with woolly hair and keratoderma
What are the symptoms of Mitral valve prolapse, familial, X-linked ?	What are the signs and symptoms of Mitral valve prolapse, familial, X-linked? The Human Phenotype Ontology provides the following list of signs and symptoms for Mitral valve prolapse, familial, X-linked. If the information is	GARD	Mitral valve prolapse, familial, X-linked
What are the symptoms of Atrial septal defect ostium primum ?	What are the signs and symptoms of Atrial septal defect ostium primum? The Human Phenotype Ontology provides the following list of signs and symptoms for Atrial septal defect ostium primum. If the information is availabl	GARD	Atrial septal defect ostium primum
What are the symptoms of Heart-hand syndrome, Spanish type ?	What are the signs and symptoms of Heart-hand syndrome, Spanish type? The Human Phenotype Ontology provides the following list of signs and symptoms for Heart-hand syndrome, Spanish type. If the information is ava	GARD	Heart-hand syndrome, Spanish type
What is (are) Mitral Valve Prolapse ?	Mitral valve prolapse (MVP) is a condition in which the hearts mitral valve doesnt work well. The flaps of the valve are floppy and may not close tightly. These flaps normally help seal or open the valve. Much of the time, MVP doesnt cause any problems. Rarely, blood can leak the wrong way through the floppy valve. This can lead topalpitations, shortness of breath, chest pain, and other symptoms. (Palpitations are feelings Normal Mitral Valve The mitral valve controls blood flow between the upper and lower chambers of the left side of the heart. The upper chamber is called the left atrium. The lower chamber is called the left ventricle. The mitral valve allows blood to flow from the left atrium into the left ventricle, but not back the other way. The heart also has a right atrium and ventricle, separated by the tricuspid valve. With each heartbeat, the atria contract and push blood into the ventricles. The flaps of the mitral and tricuspid valves open to let blood through. Then, the ventricles contract to pump the blood out of the heart. When the ventricles contract, the flaps of the mitral and tricuspid valves close. They form a tight seal that prevents blood from flowing back into the atria. For more information, go to the Health TopicsHow the Heart Worksarticle. This article contains animations that show how your heart pumps blood and how your hearts electrical system works. Mitral Valve Prolapse In MVP, when the left ventricle contracts, one or both flaps of the mitral valve flop or bulge back (prolapse) into the left atrium. This can prevent the valve from forming a tight seal. As a result, blood may leak from the ventricle MVP doesnt always cause backflow. In fact, most people who have MVP dont have backflow and never have any related symptoms or problems. When backflow occurs, it can get worse over time and itcan change the heart Medicines can treat troublesome MVP symptoms and help prevent complications. Some people will need surgery to repair or replace their mitral valves. Mitral Valve Prolapse	NHLBI	Mitral Valve Prolapse
What causes Mitral Valve Prolapse ?	The exact cause of mitral valve prolapse (MVP) isn't known. Most people who have the condition are born with it. MVP tends to run in families. Also, it's more common in people who are born with connective tissue disorders In people who have MVP, the mitral valve may be abnormal in the following ways: The valve flaps may be too large and thick. The valve flaps may be "floppy." The tissue of the flaps and their supporting "strings" are too stretchy, and parts of the valve flop or bulge back into the atrium. The opening of the valve may stretch. These problems can keep the valve from making a tight seal. Some people's valves are abnormal in more than one way.	NHLBI	Mitral Valve Prolapse
Who is at risk for Mitral Valve Prolapse? ?	Mitral valve prolapse (MVP) affects people of all ages and both sexes; however, aging raises the risk of developing the disease. Certain conditions have been associated with MVP, including: A history of rheumatic fever Connective tissue disorders, such as Marfan syndrome or Ehlers-Danlos syndrome Graves disease Scoliosis and other skeletal problems Some types of muscular dystrophy	NHLBI	Mitral Valve Prolapse
What are the symptoms of Mitral Valve Prolapse ?	Most people who have mitral valve prolapse (MVP) aren't affected by the condition. They don't have any symptoms or major mitral valve backflow. When MVP does cause signs and symptoms, they may include: Palpitations (feelings that your heart is skipping a beat, fluttering, or beating too hard or too fast) Shortness of breath Cough Fatigue (tiredness), dizziness, or anxiety Migraine headaches Chest discomfort MVP symptoms can vary from one person to another. They tend to be mild but can worsen over time, mainly when complications occur. Mitral Valve Prolapse Complications MVP complications are rare. When present, they're most often caused by the backflow of blood through the mitral valve. Mitral valve backflow is most common among men and people who have high blood pressure. People who have severe backflow may need valve surgery to prevent complications. Mitral valve backflow causes blood to flow from the left ventricle back into the left atrium. Blood can even back up from the atrium into the lungs, causing shortness of breath. The backflow of blood strains the muscles of both the atrium and the ventricle. Over time, the strain can lead to arrhythmias. Backflow also increases the risk of infective endocarditis (IE). IE is an infection of the inner lining of Arrhythmias Arrhythmias are problems with the rate or rhythm of the heartbeat. The most common types of arrhythmias are harmless. Other arrhythmias can be serious or even life threatening, such as ventricular arrhythmias. If the heart rate is too slow, too fast, or irregular, the heart may not be able to pump enough blood to the body. Lack of blood flow can damage the brain, heart, and other organs. One troublesome arrhythmia that MVP can cause is atrial fibrillation (AF). In AF, the walls of the atria quiver instead of beating normally. As a result, the atria aren't able to pump blood into the ventricles the way they should. AF is bothersome but rarely life threatening, unless the atria contract very fast or blood clots form in the atria. Blood clots can occur because some blood "pools" in the atria instead of flowing into the ventricles. If a blood clo Infection of the Mitral Valve A deformed mitral valve flap can attract bacteria in the bloodstream. The bacteria attach to the valve and can cause a serious infection called infective endocarditis (IE). Signs and symptoms of a bacterial infection include fev IE doesn't happen often, but when it does, it's serious. MVP is the most common heart condition that puts people at risk for this infection. If you have MVP, you can take steps to prevent IE. Floss and brush your teeth regularly. Gum infections and tooth decay can cause IE.	NHLBI	Mitral Valve Prolapse
How to diagnose Mitral Valve Prolapse ?	Mitral valve prolapse (MVP) most often is detected during a routine physical exam. During the exam, your doctor will listen to your heart with a stethoscope. Stretched valve flaps can make a clicking sound as they shut. If the mitral valve is leaking blood back into the left atrium, your doctor may hear a heart murmur or whooshing sound. However, these abnormal heart sounds may come and go. Your doctor may not hear them at the time of an exam, even if you have MVP. Thus, you also may have tests and procedures to diagnose MVP. Diagnostic Tests and Procedures Echocardiography Echocardiography (echo) is the most useful test for diagnosing MVP. This painless test uses sound waves to create a moving picture of your heart. Echo shows the size and shape of your heart and how well your heart chambers and valves are working. The test also can show areas of heart muscle that aren't contracting normally because of poor blood flow or injury to t Echo can show prolapse of the mitral valve flaps and backflow of blood through the leaky valve. There are several types of echo, including stress echo. Stress echo is done before and after a stress test. During a stress test, you exercise or take medicine (given by your doctor) to make your heart work hard and beat fast. You may have stress echo to find out whether you have decreased blood flow to your heart (a sign of coronary heart disease). Echo also can be done by placing a tiny probe in your esophagus to get a closer look at the mitral valve. The esophagus is the passage leading from your mouth to your stomach. The probe uses sound waves to create pictures of your heart. This form of echo is called transesophageal (trans-ih-sof-uh-JEE-ul) echocardiography, or TEE. Doppler Ultrasound A Doppler ultrasound is part of an echo test. A Doppler ultrasound shows the speed and direction of blood flow through the mitral valve. Other Tests Other tests that can help diagnose MVP include: A chest x ray. This test is used to look for fluid in your lungs or to show whether your heart is enlarged. An EKG (electrocardiogram). An EKG is a simple test that records your heart's electrical activity. An EKG can show how fast your heart is beating and whether its rhythm is steady or irregular. This test also records the strengt	NHLBI	Mitral Valve Prolapse

What are the treatments for Mitral Valve Prolapse ?	<p>Most people who have mitral valve prolapse (MVP) dont need treatment because they dont have symptoms and complications.</p> <p>Even people who do have symptoms may not need treatment. The presence of symptoms doesnt always mean that the backflow of blood through the valve is significant.</p> <p>People who have MVP and troublesome mitral valve backflow may be treated with medicines, surgery, or both.</p> <p>The goals of treating MVP include:</p> <p>Correcting the underlying mitral valve problem, if necessary</p> <p>Preventinginfective endocarditis,arrhythmias, and other complications</p> <p>Relieving symptoms</p> <p>Medicines</p> <p>Medicines called beta blockers may be used to treatpalpitationsand chest discomfort in people who have little or no mitral valve backflow.</p> <p>If you have significant backflow and symptoms, your doctor may prescribe:</p> <p>Blood-thinning medicines to reduce the risk of blood clots forming if you haveatrial fibrillation.</p> <p>Digoxin to strengthen your heartbeat.</p> <p>Diuretics (fluidpills) to remove excess sodium and fluid in your body and lungs.</p> <p>Medicines such as fecainide and procainamide to regulate your heart rhythms.</p> <p>Vasodilators to widen your blood vessels and reduce your hearts workload. Examples of vasodilators are isosorbide dinitrate and hydralazine.</p> <p>Take all medicines regularly, as your doctor prescribes. Dont change the amount of your medicine or skip a dose unless your doctor tells you to.</p> <p>Surgery</p> <p>Surgery is done only if the mitral valve is very abnormal and blood is flowing back into the atrium. The main goal of surgery is to improve symptoms and reduce the risk ofheart failure.</p> <p>The timing of the surgery is important. If its done too early and your leaking valve is working fairly well, you may be put at needless risk from surgery. If its done too late, you may have heart damage that can't be fixed.</p> <p>Surgical Approaches</p> <p>Traditionally, heart surgeons repair or replace a mitral valve by making an incision (cut) in the breastbone and exposing the heart.</p> <p>A small but growing number of surgeons are using another approach that involves one or more small cuts through the side of the chest wall. This results in less cutting, reduced blood loss, and a shorter hospital stay. However, this approach may not be right for everyone.</p> <p>Valve Repair and Valve Replacement</p> <p>In mitral valve surgery, the valve is repaired or replaced. Valve repair is preferred when possible. Repair is less likely than replacement to weaken the heart. Repair also lowers the risk of infection and decreases the need for lifelong blood-thinning medicines.</p> <p>If repair isnt an option, the valve can be replaced. Mechanical and biological valves are used as replacement valves.</p> <p>Mechanical valves are man-made and can last a lifetime. People who have mechanical valves must take blood-thinning medicines for the rest of their lives.</p> <p>Biological valves are taken from cows or pigs or made from human tissue. Many people who have biological valves dont need to take blood-thinning medicines for the rest of their lives. The major drawback of biological valve replacement is that they may wear out over time and need to be replaced.</p> <p>After surgery, youll likely stay in the hospitals intensive care unit for 2 to 3 days. Overall, most people who have mitral valve surgery spend about 1 to 2 weeks in the hospital. Complete recovery takes a few weeks to several months.</p> <p>If youve had valve repair or replacement, you may need antibiotics before dental work and surgery. These procedures can allow bacteria to enter your bloodstream. Antibiotics can help prevent infective endocarditis, a serious infection of the heart.</p> <p>Transcatheter Valve Therapy</p> <p>Interventional cardiologists may be able to repair leaky mitral valves by implanting a device using a catheter (tube) inserted through a large blood vessel. This approach is less invasive and can prevent a person from having open-heart surgery.</p> <p>You can't prevent mitral valve prolapse (MVP). Most people who have the condition are born with it.</p> <p>Complications from MVP, such as arrhythmias (irregular heartbeats) and infective endocarditis (IE), are rare. IE is an infection of the inner lining of your heart chambers and valves.</p> <p>People at high risk for IE may be given antibiotics before some types of surgery and dental work. Antibiotics can help prevent IE. Your doctor will tell you whether you need this type of treatment.</p> <p>People at high risk for IE may include those who've had valve repair or replacement or who have some types of underlying heart disease.</p>	NHLBI	Mitral Valve Prolapse
How to prevent Mitral Valve Prolapse ?	<p>Coronary heart disease risk factors are conditions or habits that raise your risk of coronary heart disease (CHD) and heart attack. These risk factors also increase the chance that existing CHD will worsen.</p> <p>CHD, also called coronary artery disease, is a condition in which a waxy substance called plaque (plak) builds up on the inner walls of the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.</p> <p>Plaque narrows the arteries and reduces blood flow to your heart muscle. Reduced blood flow can cause chest pain, especially when you're active. Eventually, an area of plaque can rupture (break open). This causes a blood clot.</p> <p>If the clot becomes large enough, it can block the flow of oxygen-rich blood to the portion of heart muscle fed by the artery. Blocked blood flow to the heart muscle causes a heart attack.</p> <p>Overview</p> <p>There are many known CHD risk factors. You can control some risk factors, but not others. Risk factors you can control include:</p> <p>High blood cholesterol and triglyceride levels (a type of fat found in the blood)</p> <p>High blood pressure</p> <p>Diabetes and prediabetes</p> <p>Overweight and obesity</p> <p>Smoking</p> <p>Lack of physical activity</p> <p>Unhealthy diet</p> <p>Stress</p> <p>The risk factors you can't control are age, gender, and family history of CHD.</p> <p>Many people have at least one CHD risk factor. Your risk of CHD and heart attack increases with the number of risk factors you have and their severity. Also, some risk factors put you at greater risk of CHD and heart attack than others.</p> <p>Many risk factors for coronary heart disease start during childhood. This is even more common now because many children are overweight and dont get enough physical activity.</p> <p>Researchers continue to study and learn more about CHD risk factors.</p> <p>Outlook</p> <p>Following a healthy lifestyle can help you and your children prevent or control many CHD risk factors.</p> <p>Because many lifestyle habits begin during childhood, parents and families should encourage their children to make heart healthy choices. For example, you and your children can lower your risk of CHD if you maintain a healthy weight, eat a healthy diet, and get enough physical activity.</p> <p>If you already have CHD, lifestyle changes can help you control your risk factors. This may prevent CHD from worsening. Even if you're in your seventies or eighties, a healthy lifestyle can lower your risk of dying from CHD.</p> <p>If lifestyle changes aren't enough, your doctor may recommend other treatments to help control your risk factors.</p> <p>Your doctor can help you find out whether you have CHD risk factors. He or she also can help you create a plan for lowering your risk of CHD, heart attack, and other heart problems.</p> <p>If you have children, talk with their doctors about their heart health and whether they have CHD risk factors. If they do, ask your doctor to help create a treatment plan to reduce or control these risk factors.</p>	NHLBI	Mitral Valve Prolapse
What is (are) Coronary Heart Disease Risk Factors ?	<p>Coronary heart disease risk factors are conditions or habits that raise your risk of coronary heart disease (CHD) and heart attack. These risk factors also increase the chance that existing CHD will worsen.</p> <p>CHD, also called coronary artery disease, is a condition in which a waxy substance called plaque (plak) builds up on the inner walls of the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.</p> <p>Plaque narrows the arteries and reduces blood flow to your heart muscle. Reduced blood flow can cause chest pain, especially when you're active. Eventually, an area of plaque can rupture (break open). This causes a blood clot.</p> <p>If the clot becomes large enough, it can block the flow of oxygen-rich blood to the portion of heart muscle fed by the artery. Blocked blood flow to the heart muscle causes a heart attack.</p> <p>Overview</p> <p>There are many known CHD risk factors. You can control some risk factors, but not others. Risk factors you can control include:</p> <p>High blood cholesterol and triglyceride levels (a type of fat found in the blood)</p> <p>High blood pressure</p> <p>Diabetes and prediabetes</p> <p>Overweight and obesity</p> <p>Smoking</p> <p>Lack of physical activity</p> <p>Unhealthy diet</p> <p>Stress</p> <p>The risk factors you can't control are age, gender, and family history of CHD.</p> <p>Many people have at least one CHD risk factor. Your risk of CHD and heart attack increases with the number of risk factors you have and their severity. Also, some risk factors put you at greater risk of CHD and heart attack than others.</p> <p>Many risk factors for coronary heart disease start during childhood. This is even more common now because many children are overweight and dont get enough physical activity.</p> <p>Researchers continue to study and learn more about CHD risk factors.</p> <p>Outlook</p> <p>Following a healthy lifestyle can help you and your children prevent or control many CHD risk factors.</p> <p>Because many lifestyle habits begin during childhood, parents and families should encourage their children to make heart healthy choices. For example, you and your children can lower your risk of CHD if you maintain a healthy weight, eat a healthy diet, and get enough physical activity.</p> <p>If you already have CHD, lifestyle changes can help you control your risk factors. This may prevent CHD from worsening. Even if you're in your seventies or eighties, a healthy lifestyle can lower your risk of dying from CHD.</p> <p>If lifestyle changes aren't enough, your doctor may recommend other treatments to help control your risk factors.</p> <p>Your doctor can help you find out whether you have CHD risk factors. He or she also can help you create a plan for lowering your risk of CHD, heart attack, and other heart problems.</p> <p>If you have children, talk with their doctors about their heart health and whether they have CHD risk factors. If they do, ask your doctor to help create a treatment plan to reduce or control these risk factors.</p>	NHLBI	Coronary Heart Disease Risk Factors

Who is at risk for Coronary Heart Disease Risk Factors? ?	<p>High Blood Cholesterol and Triglyceride Levels</p> <p>Cholesterol</p> <p>High blood cholesterol is a condition in which your blood has too much cholesterola waxy, fat-like substance. The higher your blood cholesterol level, the greater your risk of coronary heart disease (CHD) and heart attack.</p> <p>Cholesterol travels through the bloodstream in small packages called lipoproteins. Two major kinds of lipoproteins carry cholesterol throughout your body:</p> <p>Low-density lipoproteins (LDL). LDL cholesterol sometimes is called "bad" cholesterol. This is because it carries cholesterol to tissues, including your heart arteries. A high LDL cholesterol level raises your risk of CHD.</p> <p>High-density lipoproteins (HDL). HDL cholesterol sometimes is called "good" cholesterol. This is because it helps remove cholesterol from your arteries. A low HDL cholesterol level raises your risk of CHD.</p> <p>Many factors affect your cholesterol levels. For example, after menopause, women's LDL cholesterol levels tend to rise, and their HDL cholesterol levels tend to fall. Other factors such as age, gender, diet, and physical activity affect your cholesterol levels.</p> <p>Healthy levels of both LDL and HDL cholesterol will prevent plaque from building up in your arteries. Routine blood tests can show whether your blood cholesterol levels are healthy. Talk with your doctor about having your cholesterol levels checked.</p> <p>Children also can have unhealthy cholesterol levels, especially if they're overweight or their parents have high blood cholesterol. Talk with your child's doctor about testing your child's cholesterol levels.</p> <p>To learn more about high blood cholesterol and how to manage the condition, go to the Health Topics High Blood Cholesterol article.</p> <p>Triglycerides</p> <p>Triglycerides are a type of fat found in the blood. Some studies suggest that a high level of triglycerides in the blood may raise the risk of CHD, especially in women.</p> <p>High Blood Pressure</p> <p>"Blood pressure" is the force of blood pushing against the walls of your arteries as your heart pumps blood. If this pressure rises and stays high over time, it can damage your heart and lead to plaque buildup. All levels above 130/80 mm Hg are considered high blood pressure.</p> <p>Most adults should have their blood pressure checked at least once a year. If you have high blood pressure, you'll likely need to be checked more often. Talk with your doctor about how often you should have your blood pressure checked.</p> <p>Children also can develop high blood pressure, especially if they're overweight. Your child's doctor should check your child's blood pressure at each routine checkup.</p> <p>Both children and adults are more likely to develop high blood pressure if they're overweight or have diabetes.</p> <p>For more information about high blood pressure and how to manage the condition, go to the Health Topics High Blood Pressure article.</p> <p>Diabetes and Prediabetes</p> <p>Diabetes is a disease in which the body's blood sugar level is too high. The two types of diabetes are type 1 and type 2.</p> <p>In type 1 diabetes, the body's blood sugar level is high because the body doesn't make enough insulin. Insulin is a hormone that helps move blood sugar into cells, where it's used for energy. In type 2 diabetes, the body's blood sugar level is high because the body's cells don't respond properly to insulin. Over time, a high blood sugar level can lead to increased plaque buildup in your arteries. Having diabetes doubles your risk of CHD.</p> <p>Prediabetes is a condition in which your blood sugar level is higher than normal, but not as high as it is in diabetes. If you have prediabetes and don't take steps to manage it, you'll likely develop type 2 diabetes within 10 years.</p> <p>Being overweight or obese raises your risk of type 2 diabetes. With modest weight loss and moderate physical activity, people who have prediabetes may be able to delay or prevent type 2 diabetes. They also may be able to prevent or delay type 2 diabetes.</p> <p>Even children can develop type 2 diabetes. Most children who have type 2 diabetes are overweight.</p> <p>Type 2 diabetes develops over time and sometimes has no symptoms. Go to your doctor or local clinic to have your blood sugar levels tested regularly to check for diabetes and prediabetes.</p> <p>For more information about diabetes and heart disease, go to the Health Topics Diabetic Heart Disease article. For more information about diabetes and prediabetes, go to the National Institute of Diabetes and Digestive and Kidney Diseases website.</p> <p>Overweight and Obesity</p> <p>The terms "overweight" and "obesity" refer to body weight that's greater than what is considered healthy for a certain height. More than two-thirds of American adults are overweight, and almost one-third of these adults are obese.</p> <p>The most useful measure of overweight and obesity is body mass index (BMI). You can use the National Heart, Lung, and Blood Institute's (NHLBI's) online BMI calculator to figure out your BMI, or your doctor can help you.</p> <p>Overweight is defined differently for children and teens than it is for adults. Children are still growing, and boys and girls mature at different rates. Thus, BMIs for children and teens compare their heights and weights against other children of the same age and sex.</p> <p>Being overweight or obese can raise your risk of CHD and heart attack. This is mainly because overweight and obesity are linked to other CHD risk factors, such as high blood cholesterol and triglyceride levels, high blood pressure, and insulin resistance.</p> <p>For more information, go to the Health Topics Overweight and Obesity article.</p> <p>Smoking</p> <p>Smoking tobacco or long-term exposure to secondhand smoke raises your risk of CHD and heart attack.</p> <p>Smoking triggers a buildup of plaque in your arteries. Smoking also increases the risk of blood clots forming in your arteries. Blood clots can block plaque-narrowed arteries and cause a heart attack. Some research shows that the more you smoke, the greater your risk of heart attack. The benefits of quitting smoking occur no matter how long or how much you've smoked. Heart disease risk associated with smoking begins to decrease soon after you quit.</p> <p>Most people who smoke start when they're teens. Parents can help prevent their children from smoking by not smoking themselves. Talk with your child about the health dangers of smoking and ways to overcome peer pressure.</p> <p>For more information, including tips on how to quit smoking, go to the Health Topics Smoking and Your Heart article and the NHLBI's "Your Guide to a Healthy Heart."</p> <p>For more information about children and smoking, go to the U.S. Department of Health and Human Services' (HHS) Kids and Smoking Web page and the CDC's Smoking and Tobacco Use Web page.</p> <p>Lack of Physical Activity</p> <p>Inactive people are nearly twice as likely to develop CHD as those who are active. A lack of physical activity can worsen other CHD risk factors, such as high blood cholesterol and triglyceride levels, high blood pressure, diabetes, and obesity.</p> <p>It's important for children and adults to make physical activity part of their daily routines. One reason many Americans aren't active enough is because of hours spent in front of TVs and computers doing work, schoolwork, or other activities.</p> <p>Some experts advise that children and teens should reduce screen time because it limits time for physical activity. They recommend that children aged 2 and older should spend no more than 2 hours a day watching TV or using computers.</p> <p>Being physically active is one of the most important things you can do to keep your heart healthy. The good news is that even modest amounts of physical activity are good for your health. The more active you are, the more your heart and blood vessels benefit.</p> <p>For more information, go to HHS' "2008 Physical Activity Guidelines for Americans," the Health Topics Physical Activity and Your Heart article, and the NHLBI's "Your Guide to Physical Activity and Your Heart."</p> <p>Unhealthy Diet</p> <p>An unhealthy diet can raise your risk of CHD. For example, foods that are high in saturated and trans fats and cholesterol raise LDL cholesterol. Thus, you should try to limit these foods.</p> <p>It's also important to limit foods that are high in sodium (salt) and added sugars. A high-salt diet can raise your risk of high blood pressure.</p> <p>Added sugars will give you extra calories without nutrients like vitamins and minerals. This can cause you to gain weight, which raises your risk of CHD. Added sugars are found in many desserts, canned fruits packed in syrup, and many beverages.</p> <p>Stress</p> <p>Stress and anxiety may play a role in causing CHD. Stress and anxiety also can trigger your arteries to tighten. This can raise your blood pressure and your risk of heart attack.</p> <p>The most commonly reported trigger for a heart attack is an emotionally upsetting event, especially one involving anger. Stress also may indirectly raise your risk of CHD if it makes you more likely to smoke or overeat foods that are high in fat and calories.</p> <p>Age</p> <p>In men, the risk for coronary heart disease (CHD) increases starting around age 45. In women, the risk for CHD increases starting around age 55. Most people have some plaque buildup in their heart arteries by the time they're 40.</p> <p>Gender</p> <p>Some risk factors may affect CHD risk differently in women than in men. For example, estrogen provides women some protection against CHD, whereas diabetes raises the risk of CHD more in women than in men.</p> <p>Also, some risk factors for heart disease only affect women, such as preeclampsia, a condition that can develop during pregnancy. Preeclampsia is linked to an increased lifetime risk of heart disease, including CHD, heart attack, and stroke.</p> <p>Family History</p> <p>A family history of early CHD is a risk factor for developing CHD, specifically if a father or brother is diagnosed before age 55, or a mother or sister is diagnosed before age 65.</p>	NHLBI	Coronary Heart Disease Risk Factors
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How to prevent Coronary Heart Disease Risk Factors ?	<p>You can prevent and control many coronary heart disease (CHD) risk factors with heart-healthy lifestyle changes and medicines. Examples of risk factors you can control include high blood cholesterol, high blood pressure, ai NHLBI</p> <p>To reduce your risk of CHD and heart attack, try to control each risk factor you can. The good news is that many lifestyle changes help control several CHD risk factors at the same time. For example, physical activity may low</p> <p>Heart-Healthy Lifestyle Changes</p> <p>A heart-healthy lifestyle can lower the risk of CHD. If you already have CHD, a heart-healthy lifestyle may prevent it from getting worse. Heart-healthy lifestyle changes include:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Many lifestyle habits begin during childhood. Thus, parents and families should encourage their children to make heart-healthy choices, such as following a healthy diet and being physically active. Make following a healthy lif</p> <p>For tips on how to help your children adopt healthy habits, visit We Cant Ways to Enhance Childrens Activity & Nutrition.</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fatfound mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids)found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list t</p> <p>1,200 calories a day</p> <p>8 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>12 grams of saturated fat a day</p> <p>2,000 calories a day</p> <p>13 grams of saturated fat a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels.</p> <p>Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cool</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are hea</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who dont have high blood pressure. Read more about DASH.</p> <p>Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol canraise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounces of liquor</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if youre a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out NHLBIs online BMI calculator or talk to</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25 and 29.9 is considered overweight.</p> <p>Of 30 or more is considered obese.</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, youre at a higher risk for heart disease and type 2 diabetes. This risk may be high with a v</p> <p>If youre overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight lo</p> <p>Managing Stress</p> <p>Research shows that the most commonly reported trigger for a heart attack is an emotionally upsetting eventparticularly one involving anger. Also, some of the ways people cope with stresssuch as drinking, smoking, or over</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program.</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Routine physical activity can lower many CHD risk factors, including LDL (bad) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your HDL cholesterol level.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2hours and 30minutes per week, or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is i</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services 2008 Physical Activity Guidelines for Americans</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Quitting Smoking</p> <p>If you smoke, quit. Smoking can raise your risk for coronary heart disease and heart attack and worsen other coronary heart disease risk factors. Talk with your doctor about programs and products that can help you quit sm</p> <p>Read more about quitting smoking at Smoking and Your Heart.</p> <p>Medicines</p> <p>Sometimes lifestyle changes arent enough to control your blood cholesterol levels. For example, you may need statin medications to control or lower your cholesterol. By lowering your cholesterol level, you can decrease you</p> <p>Coronary heart disease, peripheral artery disease, or had a prior stroke</p> <p>Diabetes</p> <p>High LDL cholesterol levels</p> <p>Doctors may discuss beginning statin treatment with those who have an elevated risk for developing heart disease or having a stroke.</p> <p>Your doctor also may prescribe other medications to:</p> <p>Decrease your chance of having a heart attack or dying suddenly.</p> <p>Lower your blood pressure.</p> <p>Prevent blood clots, which can lead to heart attack or stroke.</p> <p>Prevent or delay the need for a procedure or surgery, such as percutaneous coronary intervention or coronary artery bypass grafting.</p> <p>Reduce your hearts workload and relieve CHD.</p> <p>Take all medicines regularly, as your doctor prescribes. Dont change the amount of your medicine or skip a dose unless your doctor tells you to. You should still follow a heart-healthy lifestyle, even if you take medicines to tre</p>	Coronary Heart Disease Risk Factors
What is (are) Coronary Microvascular Disease ?	<p>Coronary microvascular disease (MVD) is heart disease that affects the tiny coronary (heart) arteries. In coronary MVD, the walls of the heart's tiny arteries are damaged or diseased.</p> <p>Coronary MVD is different from traditional coronary heart disease (CHD), also called coronary artery disease. In CHD, a waxy substance called plaque (plak) builds up in the large coronary arteries.</p> <p>Plaque narrows the heart's large arteries and reduces the flow of oxygen-rich blood to your heart muscle. The buildup of plaque also makes it more likely that blood clots will form in your arteries. Blood clots can mostly or co</p> <p>In coronary MVD, however, the heart's tiny arteries are affected. Plaque doesn't create blockages in these vessels as it does in the heart's large arteries.</p> <p>Coronary Microvascular Disease</p> <p>Overview</p> <p>Both men and women who have coronary microvascular disease often have diabetes or high blood pressure. Some people who have coronary microvascular disease may have inherited heart muscle diseases.</p> <p>Diagnosing coronary microvascular disease has been a challenge for doctors. Standard tests used to diagnose coronary heart disease arent designed to detect coronary microvascular disease. More research is needed to fin</p> <p>Outlook</p> <p>Most of what is known about coronary MVD comes from the National Heart, Lung, and Blood Institute's Wise study (Women's Ischemia Syndrome Evaluation).</p> <p>The WISE study started in 1996. The goal of the study was to learn more about how heart disease develops in women.</p> <p>Currently, research is ongoing to learn more about the role of hormones in heart disease and to find better ways to diagnose coronary MVD.</p> <p>Studies also are under way to learn more about the causes of coronary MVD, how to treat the disease, and the expected health outcomes for people with coronary MVD.</p>	NHLBI Coronary Microvascular Disease

What causes Coronary Microvascular Disease ?	<p>The same risk factors that cause atherosclerosis may cause coronary microvascular disease. Atherosclerosis is a disease in which plaque builds up inside the arteries.</p> <p>Risk factors for atherosclerosis include:</p> <p>Diabetes. It is a disease in which the body's blood sugar level is too high because the body doesn't make enough insulin or doesn't use its insulin properly.</p> <p>Family history of early heart disease. Your risk of atherosclerosis increases if your father or a brother was diagnosed with heart disease before age 55, or if your mother or a sister was diagnosed with heart disease before age 65.</p> <p>High blood pressure. Blood pressure is considered high if it stays at or above 140/90 mmHg over time. If you have diabetes or chronic kidney disease, high blood pressure is defined as 130/80 mmHg or higher. (The mmHg is millimeters of mercury.)</p> <p>Insulin resistance. This condition occurs if the body can't use its insulin properly. Insulin is a hormone that helps move blood sugar into cells where it's used for energy. Overtime, insulin resistance can lead to diabetes.</p> <p>Lack of physical activity. Physical inactivity can worsen some other risk factors for atherosclerosis, such as unhealthy blood cholesterol levels, high blood pressure, diabetes, and overweight or obesity.</p> <p>Older age. As you age, your risk for atherosclerosis increases. The process of atherosclerosis begins in youth and typically progresses over many decades before disease develops.</p> <p>Overweight and obesity. The terms overweight and obesity refer to body weight that's greater than what is considered healthy for a certain height.</p> <p>Smoking. Smoking can damage and tighten blood vessels, lead to unhealthy cholesterol levels, and raise blood pressure. Smoking also doesn't allow enough oxygen to reach the body's tissues.</p> <p>Unhealthy blood cholesterol levels. This includes high LDL (bad) cholesterol and low HDL (good) cholesterol.</p> <p>Unhealthy diet. An unhealthy diet can raise your risk for atherosclerosis. Foods that are high in saturated and trans fats, cholesterol, sodium (salt), and sugar can worsen other risk factors for atherosclerosis.</p> <p>In women, coronary microvascular disease also may be linked to low estrogen levels occurring before or after menopause. Also, the disease may be linked to anemia or conditions that affect blood clotting. Anemia is thought to be a risk factor for coronary microvascular disease.</p> <p>Researchers continue to explore other possible causes of coronary microvascular disease.</p>	NHLBI	Coronary Microvascular Disease
Who is at risk for Coronary Microvascular Disease? ?	<p>Coronary microvascular disease can affect both men and women. However, women may be at risk for coronary microvascular disease if they have lower than normal levels of estrogen at any point in their adult lives. (This risk is higher for women who have had a hysterectomy or are on hormone therapy.)</p> <p>The causes of coronary microvascular disease and atherosclerosis are also considered risk factors for the disease.</p>	NHLBI	Coronary Microvascular Disease
What are the symptoms of Coronary Microvascular Disease ?	<p>The signs and symptoms of coronary microvascular disease (MVD) often differ from the signs and symptoms of traditional coronary heart disease (CHD).</p> <p>Many women with coronary MVD have angina (an-juh-nuh or AN-juh-nuh). Angina is chest pain or discomfort that occurs when your heart muscle doesn't get enough oxygen-rich blood.</p> <p>Angina may feel like pressure or squeezing in your chest. You also may feel it in your shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion.</p> <p>Angina also is a common symptom of CHD. However, the angina that occurs in coronary MVD may differ from the typical angina that occurs in CHD. In coronary MVD, the chest pain usually lasts longer than 10 minutes, and it may occur at rest.</p> <p>Other signs and symptoms of coronary MVD are shortness of breath, sleep problems, fatigue (tiredness), and lack of energy.</p> <p>Coronary MVD symptoms often are first noticed during routine daily activities (such as shopping, cooking, cleaning, and going to work) and times of mental stress. It's less likely that women will notice these symptoms during times of physical stress, such as while jogging, walking on a treadmill, or going up stairs.</p>	NHLBI	Coronary Microvascular Disease
How to diagnose Coronary Microvascular Disease ?	<p>Your doctor will diagnose coronary microvascular disease (MVD) based on your medical history, a physical exam, and test results. He or she will check to see whether you have any risk factors for heart disease.</p> <p>For example, your doctor may measure your weight and height to check for overweight or obesity. He or she also may recommend tests for high blood cholesterol, metabolic syndrome, and diabetes.</p> <p>Your doctor may ask you to describe any chest pain, including when it started and how it changed during physical activity or periods of stress. He or she also may ask about other symptoms, such as fatigue (tiredness), lack of energy, and shortness of breath.</p> <p>Specialists Involved</p> <p>Cardiologists and doctors who specialize in family and internal medicine might help diagnose and treat coronary MVD. Cardiologists are doctors who specialize in diagnosing and treating heart diseases and conditions.</p> <p>Diagnostic Tests</p> <p>The risk factors for coronary MVD and traditional coronary heart disease (CHD) often are the same. Thus, your doctor may recommend tests for CHD, such as:</p> <p>Coronary angiography (an-jee-OG-rah-fee). This test uses dye and special x-rays to show the insides of your coronary arteries. Coronary angiography can show plaque buildup in the large coronary arteries. This test often is called a catheterization procedure.</p> <p>Stress testing. This test shows how blood flows through your heart during physical stress, such as exercise. Even if coronary angiography doesn't show plaque buildup in the large coronary arteries, a stress test may still show areas of poor blood flow.</p> <p>Cardiac MRI (magnetic resonance imaging) stress test. Doctors may use this test to evaluate people who have chest pain.</p> <p>Unfortunately, standard tests for CHD aren't designed to detect coronary MVD. These tests look for blockages in the large coronary arteries. Coronary MVD affects the tiny coronary arteries.</p> <p>If test results show that you don't have CHD, your doctor might still diagnose you with coronary MVD. This could happen if signs are present that not enough oxygen is reaching your heart's tiny arteries.</p> <p>Coronary MVD symptoms often first occur during routine daily tasks. Thus, your doctor may ask you to fill out a questionnaire called the Duke Activity Status Index (DASI). The questionnaire will ask you how well you're able to perform various activities.</p> <p>The DASI results will help your doctor decide which kind of stress test you should have. The results also give your doctor information about how well blood is flowing through your coronary arteries.</p> <p>Your doctor also may recommend blood tests, including a test for anemia. Anemia is thought to slow the growth of cells needed to repair damaged blood vessels.</p> <p>Research is ongoing for better ways to detect and diagnose coronary MVD. Currently, researchers have not agreed on the best way to diagnose the disease.</p>	NHLBI	Coronary Microvascular Disease
What are the treatments for Coronary Microvascular Disease ?	<p>Relieving pain is one of the main goals of treating coronary microvascular disease (MVD). Treatments also are used to control risk factors and other symptoms. Treatments may include medicines, such as:</p> <p>ACE inhibitors and beta blockers to lower blood pressure and decrease the heart's workload</p> <p>Aspirin to help prevent blood clots or control inflammation</p> <p>Nitroglycerin to relax blood vessels, improve blood flow to the heart muscle, and treat chest pain</p> <p>Statin medicines to control or lower your blood cholesterol.</p> <p>Take all medicines regularly, as your doctor prescribes. Don't change the amount of your medicine or skip a dose unless your doctor tells you to.</p> <p>If you're diagnosed with coronary MVD and also have anemia, you may benefit from treatment for that condition. Anemia is thought to slow the growth of cells needed to repair damaged blood vessels.</p> <p>If you're diagnosed with and treated for coronary MVD, you should get ongoing care from your doctor. Research is under way to find the best treatments for coronary MVD.</p>	NHLBI	Coronary Microvascular Disease

How to prevent Coronary Microvascular Disease ?	<p>No specific studies have been done on how to prevent coronary microvascular disease.</p> <p>Researchers don't yet know how or in what way preventing coronary microvascular disease differs from preventing coronary heart disease. Coronary microvascular disease affects the tiny coronary arteries; coronary heart disease affects the larger coronary arteries.</p> <p>Taking action to control risk factors for heart disease can help prevent or delay coronary heart disease. You can't control some risk factors, such as older age and family history of heart disease. However, you can take steps to control others.</p> <p>Heart-healthy lifestyle changes and ongoing medical care can help you lower your risk for heart disease.</p> <p>Heart-Healthy Lifestyle Changes</p> <p>Your doctor may recommend heart-healthy lifestyle changes if you have coronary microvascular disease. Heart-healthy lifestyle changes include:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend a heart-healthy eating plan, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas.</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fat found mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids) found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur naturally in some animal products.</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list the amount of saturated fat in grams and calories.</p> <p>8 grams of saturated fat a day</p> <p>1,200 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>12 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>2,000 calories a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels.</p> <p>Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking.</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are healthy for the heart.</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who don't have high blood pressure. Read more about DASH.</p> <p>Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol can raise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounce of liquor</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if you're a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood Institute's BMI calculator.</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25 and 29.9 is considered overweight.</p> <p>30 or more is considered obese.</p> <p>A general goal to aim for is a BMI below 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, you're at a higher risk for heart disease and type 2 diabetes. This risk may be high with a very high waist circumference.</p> <p>If you're overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight loss can lead to even greater health benefits.</p> <p>Managing Stress</p> <p>Research shows that the most commonly reported trigger for a heart attack is an emotionally upsetting event, particularly one involving anger. Also, some of the ways people cope with stress, such as drinking, smoking, or overeating, can increase the risk of heart disease.</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Routine physical activity can lower many coronary heart disease risk factors, including LDL (bad) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your HDL (good) cholesterol.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes per week, or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is a good choice.</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services 2008 Physical Activity Guidelines for Americans</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Quitting Smoking</p> <p>If you smoke, quit. Smoking can raise your risk for coronary heart disease and heart attack and worsen other coronary heart disease risk factors. Talk with your doctor about programs and products that can help you quit smoking.</p> <p>If you have trouble quitting smoking on your own, consider joining a support group. Many hospitals, workplaces, and community groups offer classes to help people quit smoking.</p> <p>Read more about quitting smoking at Smoking and Your Heart.</p> <p>Ongoing Medical Care</p> <p>Learn more about heart disease and the traits, conditions, and habits that can raise your risk for developing it. Talk with your doctor about your risk factors for heart disease and how to control them.</p> <p>If lifestyle changes aren't enough, your doctor may prescribe medicines to control your risk factors. Take all of your medicines as your doctor advises. Visit your doctor regularly and have recommended testing.</p> <p>Know your numbers. Ask your doctor for these three tests and have the results explained to you:</p> <p>Blood pressure measurement.</p> <p>Fasting blood glucose. This test is for diabetes.</p> <p>Lipoprotein panel. This test measures total cholesterol, LDL (bad) cholesterol, HDL (good) cholesterol, and triglycerides (a type of fat in the blood).</p> <p>Finally, know your family history of heart disease. If you or someone in your family has heart disease, tell your doctor.</p>	NHLBI	Coronary Microvascular Disease
What is (are) Pulmonary Hypertension ?	<p>Pulmonary hypertension (PULL-mun-ary HI-per-TEN-shun), or PH, is increased pressure in the pulmonary arteries. These arteries carry blood from your heart to your lungs to pick up oxygen.</p> <p>PH causes symptoms such as shortness of breath during routine activity (for example, climbing two flights of stairs), tiredness, chest pain, and a racing heartbeat. As the condition worsens, its symptoms may limit all physical activity.</p> <p>Overview</p> <p>To understand PH, it helps to understand how your heart and lungs work. Your heart has two sides, separated by an inner wall called the septum.</p> <p>Each side of your heart has an upper and lower chamber. The lower right chamber of your heart, the right ventricle (VEN-trih-kuh), pumps blood to your pulmonary arteries. The blood then travels to your lungs, where it picks up oxygen.</p> <p>The upper left chamber of your heart, the left atrium (AY-tree-um), receives the oxygen-rich blood from your lungs. The blood is then pumped into the lower left chamber of your heart, the left ventricle. From the left ventricle, it pumps blood to the rest of your body.</p> <p>For more information about the heart and lungs, go to the Diseases and Conditions Index How the Heart Works and How the Lungs Work articles.</p> <p>PH begins with inflammation and changes in the cells that line your pulmonary arteries. Other factors also can affect the pulmonary arteries and cause PH. For example, the condition may develop if:</p> <p>The walls of the arteries tighten.</p> <p>The walls of the arteries are stiff at birth or become stiff from an overgrowth of cells.</p> <p>Blood clots form in the arteries.</p> <p>These changes make it hard for your heart to push blood through your pulmonary arteries and into your lungs. As a result, the pressure in your arteries rises. Also, because your heart is working harder than normal, your right ventricle may become so weak that it can't pump enough blood to your lungs. This causes heart failure. Heart failure is the most common cause of death in people who have PH.</p> <p>PH is divided into five groups based on its causes. In all groups, the average pressure in the pulmonary arteries is higher than 25 mmHg at rest or 30 mmHg during physical activity. The pressure in normal pulmonary arteries is less than 25 mmHg at rest and less than 30 mmHg during physical activity.</p> <p>Other diseases or conditions, such as heart and lung diseases or blood clots, usually cause PH. Some people inherit the condition (that is, their parents pass the genes for PH on to them). In some cases, the cause isn't known.</p> <p>Outlook</p> <p>PH has no cure. However, research for new treatments is ongoing. The earlier PH is treated, the easier it is to control.</p> <p>Treatments include medicines, procedures, and other therapies. These treatments can relieve PH symptoms and slow the progress of the disease. Lifestyle changes also can help control symptoms.</p>	NHLBI	Pulmonary Hypertension

What causes Pulmonary Hypertension ?	<p>Pulmonary hypertension (PH) begins with inflammation and changes in the cells that line your pulmonary arteries. Other factors also can affect the pulmonary arteries and cause PH. For example, the condition may develop if:</p> <ul style="list-style-type: none">NHLBI <p>The walls of the arteries tighten.</p> <p>The walls of the arteries are stiff at birth or become stiff from an overgrowth of cells.</p> <p>Blood clots form in the arteries.</p> <p>These changes make it hard for your heart to push blood through your pulmonary arteries and into your lungs. Thus, the pressure in the arteries rises, causing PH.</p> <p>Many factors can contribute to the process that leads to the different types of PH.</p> <p>Group 1 pulmonary arterial hypertension (PAH) may have no known cause, or the condition may be inherited. ("Inherited" means the condition is passed from parents to children through genes.)</p> <p>Some diseases and conditions also can cause group 1 PAH. Examples include HIV infection, congenital heart disease, and sickle cell disease. Also, the use of street drugs (such as cocaine) and certain diet medicines can lead to PH.</p> <p>Many diseases and conditions can cause groups 2 through 5 PH (often called secondary PH), including:</p> <ul style="list-style-type: none">Mitral valve diseaseLung diseases, such as COPD (chronic obstructive pulmonary disease)Sleep apneaSarcoidosis <p>For more information about the types of PH and the diseases, conditions, and factors that can cause them, go to "Types of Pulmonary Hypertension."</p>	NHLBI	Pulmonary Hypertension
Who is at risk for Pulmonary Hypertension? ?	<p>The exact number of people who have pulmonary hypertension (PH) isn't known.</p> <p>Group 1 pulmonary arterial hypertension (PAH) without a known cause is rare. It affects women more often than men. People who have group 1 PAH tend to be overweight.</p> <p>PH that occurs with another disease or condition is more common.</p> <p>PH usually develops between the ages of 20 and 60, but it can occur at any age. People who are at increased risk for PH include:</p> <ul style="list-style-type: none">Those who have a family history of the condition.Those who have certain diseases or conditions, such as heart and lung diseases, liver disease, HIV infection, or blood clots in the pulmonary arteries. (For more information about the diseases, conditions, and factors that can cause PH, go to "Types of Pulmonary Hypertension.")Those who use street drugs (such as cocaine) or certain diet medicines.Those who live at high altitudes.	NHLBI	Pulmonary Hypertension
What are the symptoms of Pulmonary Hypertension ?	<p>Signs and symptoms of pulmonary hypertension (PH) may include:</p> <ul style="list-style-type: none">Shortness of breath during routine activity, such as climbing two flights of stairsTirednessChest painA racing heartbeatPain on the upper right side of the abdomenDecreased appetite <p>As PH worsens, you may find it hard to do any physical activities. At this point, other signs and symptoms may include:</p> <ul style="list-style-type: none">Feeling light-headed, especially during physical activityFainting at timesSwelling in your legs and anklesA bluish color on your lips and skin	NHLBI	Pulmonary Hypertension
How to diagnose Pulmonary Hypertension ?	<p>Your doctor will diagnose pulmonary hypertension (PH) based on your medical and family histories, a physical exam, and the results from tests and procedures.</p> <p>PH can develop slowly. In fact, you may have it for years and not know it. This is because the condition has no early signs or symptoms.</p> <p>When symptoms do occur, they're often like those of other heart and lung conditions, such as asthma. This makes PH hard to diagnose.</p> <p>Medical and Family Histories</p> <p>Your doctor may ask about your signs and symptoms and how and when they began. He or she also may ask whether you have other medical conditions that can cause PH.</p> <p>Your doctor will want to know whether you have any family members who have or have had PH. People who have a family history of PH are at higher risk for the condition.</p> <p>Physical Exam</p> <p>During the physical exam, your doctor will listen to your heart and lungs with a stethoscope. He or she also will check your ankles and legs for swelling and your lips and skin for a bluish color. These are signs of PH.</p> <p>Diagnostic Tests and Procedures</p> <p>Your doctor may recommend tests and procedures to confirm a diagnosis of PH and to look for its underlying cause. Your doctor also will use test results to find out the severity of your PH.</p> <p>Tests and Procedures To Confirm a Diagnosis</p> <p>Echocardiography. Echocardiography (EK-o-kar-de-OG-ra-fee), or echo, uses sound waves to create a moving picture of your heart. This test can estimate the pressure in your pulmonary arteries. Echo also can show the size of your right ventricle.</p> <p>Chest x ray. A chest x ray takes pictures of the structures in your chest, such as your heart, lungs, and blood vessels. This test can show whether your pulmonary arteries and right ventricle are enlarged.</p> <p>The pulmonary arteries and right ventricle may get larger if the right ventricle has to work hard to pump blood through the pulmonary arteries.</p> <p>A chest x ray also may show signs of an underlying lung disease that's causing or contributing to PH.</p> <p>EKG (electrocardiogram). An EKG is a simple, painless test that records the heart's electrical activity. This test also shows whether your heart's rhythm is steady or irregular. An EKG may show whether your right ventricle is enlarged.</p> <p>Right heart catheterization. This procedure measures the pressure in your pulmonary arteries. It also shows how well your heart is pumping blood to the rest of your body. Right heart catheterization (KATH-e-ter-in-ZA-shun) can also measure the amount of blood flowing through the pulmonary arteries.</p> <p>During this procedure, a thin, flexible tube called a catheter is put into a blood vessel in your groin (upper thigh) or neck. The tube is threaded into the right side of your heart and into the pulmonary arteries. Through the tube, your doctor can measure the pressure in the pulmonary arteries.</p> <p>Tests To Look for the Underlying Cause of Pulmonary Hypertension</p> <p>PH has many causes, so many tests may need to be done to find its underlying cause.</p> <p>Chest CT scan. A chest computed tomography (to-MOG-ra-fee) scan, or chest CT scan, creates pictures of the structures inside your chest, such as your heart, lungs, and blood vessels. These pictures can show signs of PH.</p> <p>Chest MRI. Chest magnetic resonance imaging, or chest MRI, shows how your right ventricle is working. The test also shows blood flow in your lungs. Chest MRI also can help detect signs of PH or an underlying condition causing PH.</p> <p>Lung function tests. Lung function tests measure how much air you can breathe in and out, how fast you can breathe air out, and how well your lungs deliver oxygen to your blood. These tests can help detect a lung disease that's causing PH.</p> <p>Polysomnogram (PSG). This test records brain activity, eye movements, heart rate, and blood pressure while you sleep. A PSG also measures the level of oxygen in your blood. A low oxygen level during sleep is common in PH.</p> <p>A PSG usually is done while you stay overnight at a sleep center. For more information about this test, go to the Diseases and Conditions Index Sleep Studies article.</p> <p>Lung ventilation/perfusion (VQ) scan. A lung VQ scan measures air and blood flow in your lungs. This test can help detect blood clots in your lung's blood vessels.</p> <p>Blood tests. Blood tests are used to rule out other diseases, such as HIV, liver disease, and autoimmune diseases (such as rheumatoid arthritis).</p> <p>Finding Out the Severity of Pulmonary Hypertension</p> <p>Exercise testing is used to find out the severity of PH. This testing consists of either a 6-minute walk test or a cardiopulmonary exercise test.</p> <p>A 6-minute walk test measures the distance you can quickly walk in 6 minutes. A cardiopulmonary exercise test measures how well your lungs and heart work while you exercise on a treadmill or bicycle.</p> <p>During exercise testing, your doctor will rate your activity level. Your level is linked to the severity of your PH. The rating system ranges from class 1 to class 4.</p> <p>Class 1 has no limits. You can do regular physical activities, such as walking or climbing stairs. These activities don't cause PH symptoms, such as tiredness, shortness of breath, or chest pain.</p> <p>Class 2 has slight or mild limits. You're comfortable while resting, but regular physical activity causes PH symptoms.</p> <p>Class 3 has marked or noticeable limits. You're not comfortable while resting. However, walking even one or two blocks or climbing one flight of stairs can cause PH symptoms.</p> <p>Class 4 has severe limits. You're not able to do any physical activity without discomfort. You also may have PH symptoms while at rest.</p> <p>Over time, you may need more exercise tests to find out how well your treatments are working. Each time testing is done, your doctor will compare your activity level with the previous one.</p> <p>Pulmonary hypertension (PH) has no cure. However, treatment may help relieve symptoms and slow the progress of the disease.</p> <p>PH is treated with medicines, procedures, and other therapies. Treatment will depend on what type of PH you have and its severity. (For more information, go to "Types of Pulmonary Hypertension.")</p> <p>Group 1 Pulmonary Arterial Hypertension</p> <p>Group 1 pulmonary arterial hypertension (PAH) includes PH that's inherited, that has no known cause, or that's caused by certain drugs or conditions. Treatments for group 1 PAH include medicines and medical procedures.</p> <p>Medicines</p> <p>Your doctor may prescribe medicines to relax the blood vessels in your lungs and reduce excess cell growth in the blood vessels. As the blood vessels relax, more blood can flow through them.</p> <p>Your doctor may prescribe medicines that are taken by mouth, inhaled, or injected.</p> <p>Examples of medicines for group 1 PAH include:</p> <ul style="list-style-type: none">Phosphodiesterase-5 inhibitors, such as sildenafilProstanoids, such as epoprostenolEndothelin receptor antagonists, such as bosentan and ambrisentanCalcium channel blockers, such as diltiazem <p>Your doctor may prescribe one or more of these medicines. To find out which of these medicines works best, you'll likely have an acute vasoreactivity test. This test shows how the pressure in your pulmonary arteries reacts to certain medicines.</p> <p>Medical and Surgical Procedures</p> <p>If you have group 1 PAH, your doctor may recommend one or more of the following procedures.</p> <p>Atrial septostomy (sep-TOS-toe-me). For this procedure, a thin, flexible tube called a catheter is put into a blood vessel in your leg and threaded to your heart. The tube is then put through the wall that separates your right and left ventricles.</p> <p>A tiny balloon on the tip of the tube is inflated. This creates an opening between the atria. This procedure relieves the pressure in the right atria and increases blood flow. Atrial septostomy is rarely done in the United States.</p> <p>Lung transplant. A lung transplant is surgery to replace a person's diseased lung with a healthy lung from a deceased donor. This procedure may be used for people who have severe lung disease that's causing PAH.</p> <p>Heartlung transplant. A heartlung transplant is surgery in which both the heart and lung are replaced with healthy organs from a deceased donor.</p> <p>Group 2 Pulmonary Hypertension</p> <p>Conditions that affect the left side of the heart, such as mitral valve disease, can cause group 2 PH. Treating the underlying condition will help treat PH. Treatments may include lifestyle changes, medicines, and surgery.</p> <p>Group 3 Pulmonary Hypertension</p> <p>Lung diseases, such as COPD (chronic obstructive pulmonary disease) and interstitial lung disease, can cause group 3 PH. Certain sleep disorders, such as sleep apnea, also can cause group 3 PH.</p> <p>If you have this type of PH, you may need oxygen therapy. This treatment raises the level of oxygen in your blood. You'll likely get the oxygen through soft, plastic prongs that fit into your nose. Oxygen therapy can be done at home.</p> <p>Your doctor also may recommend other treatments if you have an underlying lung disease.</p> <p>Group 4 Pulmonary Hypertension</p> <p>Blood clots in the lungs or blood clotting disorders can cause group 4 PH. If you have this type of PH, your doctor will likely prescribe blood-thinning medicines. These medicines prevent clots from forming or getting larger.</p> <p>Sometimes doctors use surgery to remove scarring in the pulmonary arteries due to old blood clots.</p> <p>Group 5 Pulmonary Hypertension</p> <p>Various diseases and conditions, such as thyroid disease and sarcoidosis, can cause group 5 PH. An object, such as a tumor, pressing on the pulmonary arteries also can cause group 5 PH.</p> <p>Group 5 PH is treated by treating its cause.</p> <p>All Types of Pulmonary Hypertension</p> <p>Several treatments may be used for all types of PH. These treatments include:</p> <ul style="list-style-type: none">Diuretics, also called water pills. These medicines help reduce fluid buildup in your body, including swelling in your ankles and feet.Blood-thinning medicines. These medicines help prevent blood clots from forming or getting larger.Digoxin. This medicine helps the heart beat stronger and pump more blood. Digoxin sometimes is used to control the heart rate if abnormal heart rhythms, such as atrial fibrillation or atrial flutter, occur.Oxygen therapy. This treatment raises the level of oxygen in your blood. <p>Physical activity. Regular activity may help improve your ability to be active. Talk with your doctor about a physical activity plan that's safe for you.</p> <p>Research is ongoing for better PH treatments. These treatments offer hope for the future.</p>	NHLBI	Pulmonary Hypertension

What is (are) Heart Failure ?	<p>Heart failure is a condition in which the heart can't pump enough blood to meet the body's needs. In some cases, the heart can't fill with enough blood. In other cases, the heart can't pump blood to the rest of the body with i</p> <p>The term "heart failure" doesn't mean that your heart has stopped or is about to stop working. However, heart failure is a serious condition that requires medical care.</p> <p>Overview</p> <p>Heart failure develops over time as the heart's pumping action grows weaker. The condition can affect the right side of the heart only, or it can affect both sides of the heart. Most cases involve both sides of the heart.</p> <p>Right-side heart failure occurs if the heart can't pump enough blood to the lungs to pick up oxygen. Left-side heart failure occurs if the heart can't pump enough oxygen-rich blood to the rest of the body.</p> <p>Right-side heart failure may cause fluid to build up in the feet, ankles, legs, liver, abdomen, and the veins in the neck. Right-side and left-side heart failure also may cause shortness of breath and fatigue (tiredness).</p> <p>The leading causes of heart failure are diseases that damage the heart. Examples include coronary heart disease (CHD), high blood pressure, and diabetes.</p> <p>Outlook</p> <p>Heart failure is a very common condition. About 5.7 million people in the United States have heart failure.Both children and adults can have the condition, although the symptoms and treatments differ. The Health Topic</p> <p>Currently, heart failure has no cure. However, treatments such as medicines and lifestyle changes can help people who have the condition live longer and more active lives. Researchers continue to study new ways to treat heart failure.</p>	NHLBI	Heart Failure
What causes Heart Failure ?	<p>Causes of heart failure include:</p> <p>Coronary heart disease</p> <p>Diabetes</p> <p>High blood pressure</p> <p>Other heart conditions or diseases</p> <p>Other factors</p> <p>Coronary Heart Disease</p> <p>Coronary heart disease is a condition in which a waxy substance called plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.</p> <p>Plaque narrows the arteries and reduces blood flow to your heart muscle. The buildup of plaque also makes it more likely that blood clots will form in your arteries. Blood clots can partially or completely block blood flow. Cor</p> <p>Diabetes</p> <p>Diabetes is a disease in which the body's blood glucose (sugar) level is too high. The body normally breaks down food into glucose and then carries it to cells throughout the body. The cells use a hormone called insulin to turn glucose into energy.</p> <p>In diabetes, the body doesn't make enough insulin or doesn't use its insulin properly. Over time, high blood sugar levels can damage and weaken the heart muscle and the blood vessels around the heart, leading to heart failure.</p> <p>High Blood Pressure</p> <p>Blood pressure is the force of blood pushing against the walls of the arteries. If this pressure rises and stays high over time, it can weaken your heart and lead to plaque buildup.</p> <p>Blood pressure is considered high if it stays at or above 140/90 mmHg over time. (The mmHg is millimeters of mercury, the units used to measure blood pressure.) If you have diabetes or chronic kidney disease, high blood pressure is even more of a concern.</p> <p>Other Heart Conditions or Diseases</p> <p>Other conditions and diseases also can lead to heart failure, such as:</p> <p>Arrhythmia. Happens when a problem occurs with the rate or rhythm of the heart's beat.</p> <p>Cardiomyopathy. Happens when the heart muscle becomes enlarged, thick, or rigid.</p> <p>Congenital heart defects. Problems with the heart's structure are present at birth.</p> <p>Heart valve disease. Occurs if one or more of your heart valves doesn't work properly, which can be present at birth or caused by infection, other heart conditions, and age.</p> <p>Other Factors</p> <p>Other factors also can injure the heart muscle and lead to heart failure. Examples include:</p> <p>Alcohol abuse or cocaine and other illegal drug use</p> <p>HIV/AIDS</p> <p>Thyroid disorders (having either too much or too little thyroid hormone in the body)</p> <p>Too much vitamin E</p> <p>Treatments for cancer, such as radiation and chemotherapy</p>	NHLBI	Heart Failure
Who is at risk for Heart Failure ?	<p>About 5.7 million people in the United States have heart failure. The number of people who have this condition is growing.</p> <p>Heart failure is more common in:</p> <p>People who are age 65 or older. Aging can weaken the heart muscle. Older people also may have had diseases for many years that led to heart failure. Heart failure is a leading cause of hospital stays among people on Medicare.</p> <p>Blacks are more likely to have heart failure than people of other races. They're also more likely to have symptoms at a younger age, have more hospital visits due to heart failure, and die from heart failure.</p> <p>People who are overweight. Excess weight puts strain on the heart. Being overweight also increases your risk of heart disease and type 2 diabetes. These diseases can lead to heart failure.</p> <p>People who have had a heart attack. Damage to the heart muscle from a heart attack can weaken the heart muscle.</p> <p>Children who have congenital heart defects also can develop heart failure. These defects occur if the heart, heart valves, or blood vessels near the heart don't form correctly while a baby is in the womb. Congenital heart defects are the most common cause of heart failure in children.</p>	NHLBI	Heart Failure
What are the symptoms of Heart Failure ?	<p>The most common signs and symptoms of heart failure are:</p> <p>Shortness of breath or trouble breathing</p> <p>Fatigue (tiredness)</p> <p>Swelling in the ankles, feet, legs, abdomen, and veins in the neck</p> <p>All of these symptoms are the result of fluid buildup in your body. When symptoms start, you may feel tired and short of breath after routine physical effort, like climbing stairs.</p> <p>As your heart grows weaker, symptoms get worse. You may begin to feel tired and short of breath after getting dressed or walking across the room. Some people have shortness of breath while lying flat.</p> <p>Fluid buildup from heart failure also causes weight gain, frequent urination, and a cough that's worse at night and when you're lying down. This cough may be a sign of acute pulmonary edema (e-DE-ma). This is a condition in which fluid builds up in the lungs.</p> <p>Heart Failure Signs and Symptoms</p>	NHLBI	Heart Failure
How to diagnose Heart Failure ?	<p>Your doctor will diagnose heart failure based on your medical and family histories, a physical exam, and test results. The signs and symptoms of heart failure also are common in other conditions. Thus, your doctor will:</p> <p>Find out whether you have a disease or condition that can cause heart failure, such as coronary heart disease (CHD), high blood pressure, or diabetes</p> <p>Rule out other causes of your symptoms</p> <p>Find any damage to your heart and check how well your heart pumps blood</p> <p>Early diagnosis and treatment can help people who have heart failure live longer, more active lives.</p> <p>Medical and Family Histories</p> <p>Your doctor will ask whether you or others in your family have or have had a disease or condition that can cause heart failure.</p> <p>Your doctor also will ask about your symptoms. He or she will want to know which symptoms you have, when they occur, how long you've had them, and how severe they are. Your answers will help show whether and how n</p> <p>Physical Exam</p> <p>During the physical exam, your doctor will:</p> <p>Listen to your heart for sounds that aren't normal</p> <p>Listen to your lungs for the sounds of extra fluid buildup</p> <p>Look for swelling in your ankles, feet, legs, abdomen, and the veins in your neck</p> <p>Diagnostic Tests</p> <p>No single test can diagnose heart failure. If you have signs and symptoms of heart failure, your doctor may recommend one or more tests.</p> <p>Your doctor also may refer you to a cardiologist. A cardiologist is a doctor who specializes in diagnosing and treating heart diseases and conditions.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that detects and records the heart's electrical activity. The test shows how fast your heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical impulses as they travel through the heart.</p> <p>An EKG may show whether the walls in your heart's pumping chambers are thicker than normal. Thicker walls can make it harder for your heart to pump blood. An EKG also can show signs of a previous or current heart attack.</p> <p>Chest X Ray</p> <p>A chest x ray takes pictures of the structures inside your chest, such as your heart, lungs, and blood vessels. This test can show whether your heart is enlarged, you have fluid in your lungs, or you have lung disease.</p> <p>BNP Blood Test</p> <p>This test checks the level of a hormone in your blood called BNP. The level of this hormone rises during heart failure.</p> <p>Echocardiography</p> <p>Echocardiography (echo) uses sound waves to create a moving picture of your heart. The test shows the size and shape of your heart and how well your heart chambers and valves work.</p> <p>Echo also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and heart muscle damage caused by lack of blood flow.</p> <p>Echo might be done before and after a stress test (see below). A stress echo can show how well blood is flowing through your heart. The test also can show how well your heart pumps blood when it beats.</p> <p>Doppler Ultrasound</p> <p>A Doppler ultrasound uses sound waves to measure the speed and direction of blood flow. This test often is done with echo to give a more complete picture of blood flow to the heart and lungs.</p> <p>Doctors often use Doppler ultrasound to help diagnose right-side heart failure.</p> <p>Holter Monitor</p> <p>A Holter monitor records your heart's electrical activity for a full 24- or 48-hour period, while you go about your normal daily routine.</p> <p>You wear small patches called electrodes on your chest. Wires connect the patches to a small, portable recorder. The recorder can be clipped to a belt, kept in a pocket, or hung around your neck.</p> <p>Nuclear Heart Scan</p> <p>A nuclear heart scan shows how well blood is flowing through your heart and how much blood is reaching your heart muscle.</p> <p>During a nuclear heart scan, a safe, radioactive substance called a tracer is injected into your bloodstream through a vein. The tracer travels to your heart and releases energy. Special cameras outside of your body detect the energy.</p> <p>A nuclear heart scan can show where the heart muscle is healthy and where it's damaged.</p> <p>A positron emission tomography (PET) scan is a type of nuclear heart scan. It shows the level of chemical activity in areas of your heart. This test can help your doctor see whether enough blood is flowing to these areas. A PET scan also can show areas of the heart that aren't working properly.</p> <p>Cardiac Catheterization</p> <p>During cardiac catheterization (KATH-eh-ter-ih-ZA-shun), a long, thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck and threaded to your heart. This allows your doctor to look at the heart's interior.</p> <p>During this procedure, your doctor can check the pressure and blood flow in your heart chambers, collect blood samples, and use x rays to look at your coronary arteries.</p> <p>Coronary Angiography</p> <p>Coronary angiography (an-jee-OG-rah-fee) usually is done with cardiac catheterization. A dye that can be seen on x ray is injected into your bloodstream through the tip of the catheter.</p> <p>The dye allows your doctor to see the flow of blood to your heart muscle. Angiography also shows how well your heart is pumping.</p> <p>Stress Test</p> <p>Some heart problems are easier to diagnose when your heart is working hard and beating fast. During stress testing, you exercise to make your heart work hard and beat fast.</p> <p>You may walk or run on a treadmill or pedal a bicycle. If you can't exercise, you may be given medicine to raise your heart rate.</p> <p>Heart tests, such as nuclear heart scanning and echo, often are done during stress testing.</p> <p>Cardiac MRI</p> <p>Cardiac MRI (magnetic resonance imaging) uses radio waves, magnets, and a computer to create pictures of your heart as it's beating. The test produces both still and moving pictures of your heart and major blood vessels.</p> <p>A cardiac MRI can show whether parts of your heart are damaged. Doctors also have used MRI in research studies to find early signs of heart failure, even before symptoms appear.</p> <p>Thyroid Function Tests</p> <p>Thyroid function tests show how well your thyroid gland is working. These tests include blood tests, imaging tests, and tests to stimulate the thyroid. Having too much or too little thyroid hormone in the blood can lead to heart failure.</p>	NHLBI	Heart Failure

What are the treatments for Heart Failure ?	<p>Early diagnosis and treatment can help people who have heart failure live longer, more active lives. Treatment for heart failure depends on the type and severity of the heart failure.</p> <p>The goals of treatment for all stages of heart failure include:</p> <p>Treating the conditions underlying cause, such as coronary heart disease, high blood pressure, diabetes</p> <p>Reducing symptoms</p> <p>Stopping the heart failure from getting worse</p> <p>Increasing your lifespan and improving your quality of life</p> <p>Treatments usually include lifestyle changes, medicines, and ongoing care. If you have severe heart failure, you also may need medical procedures or surgery.</p> <p>Heart-Healthy Lifestyle Changes</p> <p>Your doctor may recommend heart-healthy lifestyle changes if you have heart failure. Heart-healthy lifestyle changes include:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend a heart-healthy eating plan, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fat found mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids) found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur naturally in meat and dairy products.</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list total fat and saturated fat.</p> <p>If you eat:</p> <p>Try to eat no more than:</p> <p>1,200 calories a day</p> <p>8 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>12 grams of saturated fat a day</p> <p>2,000 calories a day</p> <p>13 grams of saturated fat a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels.</p> <p>Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking.</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are healthy.</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who don't have high blood pressure. Read more about DASH.</p> <p>Liquid Intake</p> <p>It's important for people who have heart failure to take in the correct amounts and types of liquids. Consuming too much liquid can worsen heart failure. Also, if you have heart failure, you shouldn't drink alcohol. Talk with your doctor about how much to drink.</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for heart failure and coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if you're a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood Institute's BMI calculator.</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25 and 29.9 is considered overweight.</p> <p>30 or more is considered obese.</p> <p>A general goal to aim for is a BMI below 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, you're at a higher risk for heart disease and type 2 diabetes. This risk may be higher with a larger waist.</p> <p>If you're overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight loss can lead to even more health benefits.</p> <p>Physical Activity</p> <p>Routine physical activity can lower many coronary heart disease risk factors, including LDL (bad) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your HDL (good) cholesterol.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes per week, or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is a good choice.</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services 2008 Physical Activity Guidelines for Americans</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Quitting Smoking</p> <p>If you smoke, quit. Smoking can raise your risk for coronary heart disease and heart attack and worsen heart failure. Talk with your doctor about programs and products that can help you quit smoking. Also, try to avoid secondhand smoke.</p> <p>If you have trouble quitting smoking on your own, consider joining a support group. Many hospitals, workplaces, and community groups offer classes to help people quit smoking.</p> <p>Read more about quitting smoking at Smoking and Your Heart.</p> <p>Medicines</p> <p>Your doctor will prescribe medicines based on the type of heart failure you have, how severe it is, and your response to certain medicines. The following medicines are commonly used to treat heart failure:</p> <p>ACE inhibitors lower blood pressure and reduce strain on your heart. They also may reduce the risk of a future heart attack.</p> <p>Aldosterone antagonists trigger the body to remove excess sodium through urine. This lowers the volume of blood that the heart must pump.</p> <p>Angiotensin receptor blockers relax your blood vessels and lower blood pressure to decrease your heart's workload.</p> <p>Beta blockers slow your heart rate and lower your blood pressure to decrease your heart's workload.</p> <p>Digoxin makes the heart beat stronger and pump more blood.</p> <p>Diuretics (fluid pills) help reduce fluid buildup in your lungs and swelling in your feet and ankles.</p> <p>Isosorbide dinitrate/hydralazine hydrochloride helps relax your blood vessels so your heart doesn't work as hard to pump blood. Studies have shown that this medicine can reduce the risk of death in blacks. More studies are needed.</p> <p>Take all medicines regularly, as your doctor prescribes. Don't change the amount of your medicine or skip a dose unless your doctor tells you to. You should still follow a heart-healthy lifestyle, even if you take medicines to treat heart failure.</p> <p>Ongoing Care</p> <p>You should watch for signs that heart failure is getting worse. For example, weight gain may mean that fluids are building up in your body. Ask your doctor how often you should check your weight and when to report weight changes.</p> <p>Getting medical care for other related conditions is important. If you have diabetes or high blood pressure, work with your health care team to control these conditions. Have your blood sugar level and blood pressure checked regularly.</p> <p>Try to avoid respiratory infections like the flu and pneumonia. Talk with your doctor or nurse about getting flu and pneumonia vaccines.</p> <p>Many people who have severe heart failure may need treatment in a hospital from time to time. Your doctor may recommend oxygen therapy, which can be given in a hospital or at home.</p> <p>Medical Procedures and Surgery</p> <p>As heart failure worsens, lifestyle changes and medicines may no longer control your symptoms. You may need a medical procedure or surgery.</p> <p>In heart failure, the right and left sides of the heart may no longer contract at the same time. This disrupts the heart's pumping. To correct this problem, your doctor might implant a cardiac resynchronization therapy device (a CRT-D).</p> <p>Some people who have heart failure have very rapid, irregular heartbeats. Without treatment, these heartbeats can cause sudden cardiac arrest. Your doctor might implant an implantable cardioverter defibrillator (ICD) near your heart.</p> <p>People who have severe heart failure symptoms at rest, despite other treatments, may need:</p> <p>A mechanical heart pump, such as a left ventricular assist device. This device helps pump blood from the heart to the rest of the body. You may use a heart pump until you have surgery or as a long-term treatment.</p> <p>Heart transplant. A heart transplant is an operation in which a person's diseased heart is replaced with a healthy heart from a deceased donor. Heart transplants are done as a life-saving measure for end-stage heart failure when other treatments don't work.</p>	NHLBI	Heart Failure
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What is (are) Atherosclerosis ?	<p>Español</p> <p>Atherosclerosis is a disease in which plaque builds up inside your arteries. Arteries are blood vessels that carry oxygen-rich blood to your heart and other parts of your body.</p> <p>Plaque is made up of fat, cholesterol, calcium, and other substances found in the blood. Over time, plaque hardens and narrows your arteries. This limits the flow of oxygen-rich blood to your organs and other parts of your body.</p> <p>Atherosclerosis can lead to serious problems, including heart attack, stroke, or even death.</p> <p>Atherosclerosis</p> <p>Atherosclerosis-Related Diseases</p> <p>Atherosclerosis can affect any artery in the body, including arteries in the heart, brain, arms, legs, pelvis, and kidneys. As a result, different diseases may develop based on which arteries are affected.</p> <p>Coronary Heart Disease</p> <p>Coronary heart disease (CHD), also called coronary artery disease, occurs when plaque builds up in the coronary arteries. These arteries supply oxygen-rich blood to your heart.</p> <p>Plaque narrows the coronary arteries and reduces blood flow to your heart muscle. Plaque buildup also makes it more likely that blood clots will form in your arteries. Blood clots can partially or completely block blood flow.</p> <p>If blood flow to your heart muscle is reduced or blocked, you may have angina (chest pain or discomfort) or a heart attack.</p> <p>Plaque also can form in the heart's smallest arteries. This disease is called coronary microvascular disease (MVD). In coronary MVD, plaque doesn't cause blockages in the arteries as it does in CHD.</p> <p>Carotid Artery Disease</p> <p>Carotid (ka-ROT-id) artery disease occurs if plaque builds up in the arteries on each side of your neck (the carotid arteries). These arteries supply oxygen-rich blood to your brain. If blood flow to your brain is reduced or blocked, you may have a stroke.</p> <p>Peripheral Artery Disease</p> <p>Peripheral artery disease (PAD) occurs if plaque builds up in the major arteries that supply oxygen-rich blood to your legs, arms, and pelvis.</p> <p>If blood flow to these parts of your body is reduced or blocked, you may have numbness, pain, and, sometimes, dangerous infections.</p> <p>Chronic Kidney Disease</p> <p>Chronic kidney disease can occur if plaque builds up in the renal arteries. These arteries supply oxygen-rich blood to your kidneys.</p> <p>Over time, chronic kidney disease causes a slow loss of kidney function. The main function of the kidneys is to remove waste and extra water from the body.</p> <p>Overview</p> <p>The cause of atherosclerosis isn't known. However, certain traits, conditions, or habits may raise your risk for the disease. These conditions are known as risk factors.</p> <p>You can control some risk factors, such as lack of physical activity, smoking, and an unhealthy diet. Others you can't control, such as age and a family history of heart disease.</p> <p>Some people who have atherosclerosis have no signs or symptoms. They may not be diagnosed until after a heart attack or stroke.</p> <p>The main treatment for atherosclerosis is lifestyle changes. You also may need medicines and medical procedures. These treatments, along with ongoing medical care, can help you live a healthier life.</p> <p>Outlook</p> <p>Improved treatments have reduced the number of deaths from atherosclerosis-related diseases. These treatments also have improved the quality of life for people who have these diseases. However, atherosclerosis remains a leading cause of death in the United States.</p> <p>You may be able to prevent or delay atherosclerosis and the diseases it can cause. Making lifestyle changes and getting ongoing care can help you avoid the problems of atherosclerosis and live a long, healthy life.</p>	NHLBI	Atherosclerosis
What causes Atherosclerosis ?	<p>The exact cause of atherosclerosis isn't known. However, studies show that atherosclerosis is a slow, complex disease that may start in childhood. It develops faster as you age.</p> <p>Atherosclerosis may start when certain factors damage the inner layers of the arteries. These factors include:</p> <p>Smoking</p> <p>High amounts of certain fats and cholesterol in the blood</p> <p>High blood pressure</p> <p>High amounts of sugar in the blood due to insulin resistance or diabetes</p> <p>Plaque may begin to build up where the arteries are damaged. Over time, plaque hardens and narrows the arteries. Eventually, an area of plaque can rupture (break open).</p> <p>When this happens, blood cell fragments called platelets (PLATE-lets) stick to the site of the injury. They may clump together to form blood clots. Clots narrow the arteries even more, limiting the flow of oxygen-rich blood to your organs and other parts of your body.</p> <p>Depending on which arteries are affected, blood clots can worsen angina (chest pain) or cause a heart attack or stroke.</p> <p>Researchers continue to look for the causes of atherosclerosis. They hope to find answers to questions such as:</p> <p>Why and how do the arteries become damaged?</p> <p>How does plaque develop and change over time?</p> <p>Why does plaque rupture and lead to blood clots?</p>	NHLBI	Atherosclerosis
Who is at risk for Atherosclerosis? ?	<p>The exact cause of atherosclerosis isn't known. However, certain traits, conditions, or habits may raise your risk for the disease. These conditions are known as risk factors. The more risk factors you have, the more likely it is that you will develop atherosclerosis and the diseases it can cause.</p> <p>You can control most risk factors and help prevent or delay atherosclerosis. Other risk factors can't be controlled.</p> <p>Major Risk Factors</p> <p>Unhealthy blood cholesterol levels. This includes high LDL cholesterol (sometimes called "bad" cholesterol) and low HDL cholesterol (sometimes called "good" cholesterol).</p> <p>High blood pressure. Blood pressure is considered high if it stays at or above 140/90 mmHg over time. If you have diabetes or chronic kidney disease, high blood pressure is defined as 130/80 mmHg or higher. (The mmHg is a unit of measurement for blood pressure.)</p> <p>Smoking. Smoking can damage and tighten blood vessels, raise cholesterol levels, and raise blood pressure. Smoking also doesn't allow enough oxygen to reach the body's tissues.</p> <p>Insulin resistance. This condition occurs if the body can't use its insulin properly. Insulin is a hormone that helps move blood sugar into cells where it's used as an energy source. Insulin resistance may lead to diabetes.</p> <p>Diabetes. With this disease, the body's blood sugar level is too high because the body doesn't make enough insulin or doesn't use its insulin properly.</p> <p>Overweight or obesity. The terms "overweight" and "obesity" refer to body weight that's greater than what is considered healthy for a certain height.</p> <p>Lack of physical activity. A lack of physical activity can worsen other risk factors for atherosclerosis, such as unhealthy blood cholesterol levels, high blood pressure, diabetes, and overweight and obesity.</p> <p>Unhealthy diet. An unhealthy diet can raise your risk for atherosclerosis. Foods that are high in saturated and trans fats, cholesterol, sodium (salt), and sugar can worsen other atherosclerosis risk factors.</p> <p>Older age. As you get older, your risk for atherosclerosis increases. Genetic or lifestyle factors cause plaque to build up in your arteries as you age. By the time you're middle-aged or older, enough plaque has built up to cause atherosclerosis.</p> <p>Family history of early heart disease. Your risk for atherosclerosis increases if your father or a brother was diagnosed with heart disease before 55 years of age, or if your mother or a sister was diagnosed with heart disease before 65 years of age.</p> <p>Although age and a family history of early heart disease are risk factors, it doesn't mean that you'll develop atherosclerosis if you have one or both. Controlling other risk factors often can lessen genetic influences and prevent atherosclerosis.</p> <p>Studies show that an increasing number of children and youth are at risk for atherosclerosis. This is due to a number of causes, including rising childhood obesity rates.</p> <p>Emerging Risk Factors</p> <p>Scientists continue to study other possible risk factors for atherosclerosis.</p> <p>High levels of a protein called C-reactive protein (CRP) in the blood may raise the risk for atherosclerosis and heart attack. High levels of CRP are a sign of inflammation in the body.</p> <p>Inflammation is the body's response to injury or infection. Damage to the arteries' inner walls seems to trigger inflammation and help plaque grow.</p> <p>People who have low CRP levels may develop atherosclerosis at a slower rate than people who have high CRP levels. Research is under way to find out whether reducing inflammation and lowering CRP levels also can reduce the risk of atherosclerosis.</p> <p>High levels of triglycerides (tri-GLIH-seh-rides) in the blood also may raise the risk for atherosclerosis, especially in women. Triglycerides are a type of fat.</p> <p>Studies are under way to find out whether genetics may play a role in atherosclerosis risk.</p> <p>Other Factors That Affect Atherosclerosis</p> <p>Other factors also may raise your risk for atherosclerosis, such as:</p> <p>Sleep apnea. Sleep apnea is a disorder that causes one or more pauses in breathing or shallow breaths while you sleep. Untreated sleep apnea can raise your risk for high blood pressure, diabetes, and even a heart attack or stroke.</p> <p>Stress. Research shows that the most commonly reported "trigger" for a heart attack is an emotionally upsetting event, especially one involving anger.</p> <p>Alcohol. Heavy drinking can damage the heart muscle and worsen other risk factors for atherosclerosis. Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day.</p>	NHLBI	Atherosclerosis
What are the symptoms of Atherosclerosis ?	<p>Atherosclerosis usually doesn't cause signs and symptoms until it severely narrows or totally blocks an artery. Many people don't know they have the disease until they have a medical emergency, such as a heart attack or stroke.</p> <p>Some people may have signs and symptoms of the disease. Signs and symptoms will depend on which arteries are affected.</p> <p>Coronary Arteries</p> <p>The coronary arteries supply oxygen-rich blood to your heart. If plaque narrows or blocks these arteries (a disease called coronary heart disease, or CHD), a common symptom is angina. Angina is chest pain or discomfort that may feel like pressure or squeezing in your chest. You also may feel it in your shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion. The pain tends to get worse with activity and go away with rest.</p> <p>Angina may feel like pressure or squeezing in your chest. You also may feel it in your shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion. The pain tends to get worse with activity and go away with rest.</p> <p>Other symptoms of CHD are shortness of breath and arrhythmias (ah-RITH-me-ahs). Arrhythmias are problems with the rate or rhythm of the heartbeat.</p> <p>Plaque also can form in the heart's smallest arteries. This disease is called coronary microvascular disease (MVD). Symptoms of coronary MVD include angina, shortness of breath, sleep problems, fatigue (tiredness), and lacerations.</p> <p>Carotid Arteries</p> <p>The carotid arteries supply oxygen-rich blood to your brain. If plaque narrows or blocks these arteries (a disease called carotid artery disease), you may have symptoms of a stroke. These symptoms may include:</p> <p>Sudden weakness</p> <p>Paralysis (an inability to move) or numbness of the face, arms, or legs, especially on one side of the body</p> <p>Confusion</p> <p>Trouble speaking or understanding speech</p> <p>Trouble seeing in one or both eyes</p> <p>Problems breathing</p> <p>Dizziness, trouble walking, loss of balance or coordination, and unexplained falls</p> <p>Loss of consciousness</p> <p>Sudden and severe headache</p> <p>Peripheral Arteries</p> <p>Plaque also can build up in the major arteries that supply oxygen-rich blood to the legs, arms, and pelvis (a disease called peripheral artery disease).</p> <p>If these major arteries are narrowed or blocked, you may have numbness, pain, and, sometimes, dangerous infections.</p> <p>Renal Arteries</p> <p>The renal arteries supply oxygen-rich blood to your kidneys. If plaque builds up in these arteries, you may develop chronic kidney disease. Over time, chronic kidney disease causes a slow loss of kidney function.</p> <p>Early kidney disease often has no signs or symptoms. As the disease gets worse it can cause tiredness, changes in how you urinate (more often or less often), loss of appetite, nausea (feeling sick to the stomach), swelling in your feet or ankles, and shortness of breath.</p>	NHLBI	Atherosclerosis

How to diagnose Atherosclerosis ?	<p>Your doctor will diagnose atherosclerosis based on your medical and family histories, a physical exam, and test results.</p> <p>Specialists Involved</p> <p>If you have atherosclerosis, a primary care doctor, such as an internist or family practitioner, may handle your care. Your doctor may recommend other health care specialists if you need expert care, such as:</p> <p>A cardiologist. This is a doctor who specializes in diagnosing and treating heart diseases and conditions. You may go to a cardiologist if you haveperipheral artery disease(P.A.D.)or coronary microvascular disease (MVD).</p> <p>A vascular specialist. This is a doctor who specializes in diagnosing and treating blood vessel problems. You may go to a vascular specialist if you have P.A.D.</p> <p>A neurologist. This is a doctor who specializes in diagnosing and treating nervous system disorders. You may see a neurologist if you've had a stroke due to carotid artery disease.</p> <p>A nephrologist. This is a doctor who specializes in diagnosing and treating kidney diseases and conditions. You may go to a nephrologist if you have chronic kidney disease.</p> <p>Physical Exam</p> <p>During the physical exam, your doctor may listen to your arteries for an abnormal whooshing sound called a bruit (broo-E). Your doctor can hear a bruit when placing a stethoscope over an affected artery. A bruit may indicate a narrowing of the artery.</p> <p>Your doctor also may check to see whether any of your pulses (for example, in the leg or foot) are weak or absent. A weak or absent pulse can be a sign of a blocked artery.</p> <p>Diagnostic Tests</p> <p>Your doctor may recommend one or more tests to diagnose atherosclerosis. These tests also can help your doctor learn the extent of your disease and plan the best treatment.</p> <p>Blood Tests</p> <p>Blood tests check the levels of certain fats, cholesterol, sugar, and proteins in your blood. Abnormal levels may be a sign that you're at risk for atherosclerosis.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that detects and records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical impulses that start each heartbeat.</p> <p>An EKG can show signs of heart damage caused by CHD. The test also can show signs of a previous or current heart attack.</p> <p>Chest X Ray</p> <p>A chest x ray takes pictures of the organs and structures inside your chest, such as your heart, lungs, and blood vessels. A chest x ray can reveal signs of heart failure.</p> <p>Ankle/Brachial Index</p> <p>This test compares the blood pressure in your ankle with the blood pressure in your arm to see how well your blood is flowing. This test can help diagnose P.A.D.</p> <p>Echocardiography</p> <p>Echocardiography (echo) uses sound waves to create a moving picture of your heart. The test provides information about the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>Echo also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>Computed Tomography Scan</p> <p>A computed tomography (CT) scan creates computer-generated pictures of the heart, brain, or other areas of the body. The test can show hardening and narrowing of large arteries.</p> <p>A cardiac CT scan also can show whether calcium has built up in the walls of the coronary (heart) arteries. This may be an early sign of CHD.</p> <p>Stress Testing</p> <p>During stress testing, you exercise to make your heart work hard and beat fast while heart tests are done. If you can't exercise, you may be given medicine to make your heart work hard and beat fast.</p> <p>When your heart is working hard, it needs more blood and oxygen. Plaque-narrowed arteries can't supply enough oxygen-rich blood to meet your heart's needs.</p> <p>A stress test can show possible signs and symptoms of CHD, such as:</p> <p>Abnormal changes in your heart rate or blood pressure</p> <p>Shortness of breath or chest pain</p> <p>Abnormal changes in your heart rhythm or your heart's electrical activity</p> <p>As part of some stress tests, pictures are taken of your heart while you exercise and while you rest. These imaging stress tests can show how well blood is flowing in various parts of your heart. They also can show how well your heart is working.</p> <p>Angiography</p> <p>Angiography (an-jee-OG-ra-fee) is a test that uses dye and special x rays to show the inside of your arteries. This test can show whether plaque is blocking your arteries and how severe the blockage is.</p> <p>A thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck. Dye that can be seen on an x-ray picture is injected through the catheter into the arteries. By looking at the x-ray picture, your doctor can see where the blockage is.</p> <p>Other Tests</p> <p>Other tests are being studied to see whether they can give a better view of plaque buildup in the arteries. Examples of these tests include magnetic resonance imaging (MRI) and positron emission tomography (PET).</p>	NHLBI	Atherosclerosis
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What are the treatments for Atherosclerosis ?	<p>Treatments for atherosclerosis may include heart-healthy lifestyle changes, medicines, and medical procedures or surgery. The goals of treatment include:</p> <p>Lowering the risk of blood clots forming</p> <p>Preventing atherosclerosis-related diseases</p> <p>Reducing risk factors in an effort to slow or stop the buildup of plaque</p> <p>Relieving symptoms</p> <p>Widening or bypassing plaque-clogged arteries</p> <p>Heart-Healthy Lifestyle Changes</p> <p>Your doctor may recommend heart-healthy lifestyle changes if you have atherosclerosis. Heart-healthy lifestyle changes include heart-healthy eating, maintaining a healthy weight, managing stress, physical activity and quitting smoking.</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fat found mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids) found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur naturally in some animal products.</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list the amount of saturated fat in grams and calories.</p> <p>1,200 calories a day</p> <p>8 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>12 grams of saturated fat a day</p> <p>2,000 calories a day</p> <p>13 grams of saturated fat a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels. Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking.</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are healthy for the heart.</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who don't have high blood pressure. Read more about DASH.</p> <p>Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol will raise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounces of liquor</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if you're a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood Institute's BMI calculator.</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25.0 and 29.9 is considered overweight.</p> <p>A BMI of 30.0 or higher is considered obese.</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, you're at a higher risk for heart disease and type 2 diabetes. This risk may be high with a waist circumference of 40 inches or more for men and 35 inches or more for women.</p> <p>If you're overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight loss can lead to even greater health benefits.</p> <p>Managing Stress</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Regular physical activity can lower many atherosclerosis risk factors, including LDL or bad cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your HDL or good cholesterol.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes per week or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is a good choice.</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you. Read more about physical activity at the American Heart Association.</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services, 2008 Physical Activity Guidelines for Americans</p> <p>Quitting Smoking</p> <p>If you smoke or use tobacco, quit. Smoking can damage and tighten blood vessels and raise your risk for atherosclerosis. Talk with your doctor about programs and products that can help you quit. Also, try to avoid secondhand smoke.</p> <p>For more information about how to quit smoking, visit Smoking and Your Heart.</p> <p>Medicines</p> <p>Sometimes lifestyle changes alone aren't enough to control your cholesterol levels. For example, you also may need statin medications to control or lower your cholesterol. By lowering your blood cholesterol level, you can decrease your risk for heart disease, stroke, and other complications.</p> <p>Coronary heart disease, peripheral artery disease, or had a prior stroke</p> <p>Diabetes</p> <p>High LDL cholesterol levels</p> <p>Doctors may discuss beginning statin treatment with people who have an elevated risk for developing heart disease or having a stroke. Your doctor also may prescribe other medications to:</p> <p>Lower your blood pressure</p> <p>Lower your blood sugar levels</p> <p>Prevent blood clots, which can lead to heart attack and stroke</p> <p>Prevent inflammation</p> <p>Take all medicines regularly, as your doctor prescribes. Don't change the amount of your medicine or skip a dose unless your doctor tells you to. You should still follow a heart-healthy lifestyle, even if you take medicines to treat atherosclerosis.</p> <p>Medical Procedures and Surgery</p> <p>If you have severe atherosclerosis, your doctor may recommend a medical procedure or surgery.</p> <p>Percutaneous coronary intervention (PCI), also known as coronary angioplasty, is a procedure that's used to open blocked or narrowed coronary (heart) arteries. PCI can improve blood flow to the heart and relieve chest pain.</p> <p>Coronary artery bypass grafting (CABG) is a type of surgery. In CABG, arteries or veins from other areas in your body are used to bypass or go around your narrowed coronary arteries. CABG can improve blood flow to your heart.</p> <p>Bypass grafting also can be used for leg arteries. For this surgery, a healthy blood vessel is used to bypass a narrowed or blocked artery in one of the legs. The healthy blood vessel redirects blood around the blocked artery.</p> <p>Carotid endarterectomy is a type of surgery to remove plaque buildup from the carotid arteries in the neck. This procedure restores blood flow to the brain, which can help prevent a stroke.</p>	NHLBI	Atherosclerosis
How to prevent Atherosclerosis ?	<p>Taking action to control your risk factors can help prevent or delay atherosclerosis and its related diseases. Your risk for atherosclerosis increases with the number of risk factors you have.</p> <p>One step you can take is to adopt a healthy lifestyle, which can include:</p> <p>Heart-Healthy Eating. Adopt heart-healthy eating habits, which include eating different fruits and vegetables (including beans and peas), whole grains, lean meats, poultry without skin, seafood, and fat-free or low-fat milk and yogurt.</p> <p>Physical Activity. Be as physically active as you can. Physical activity can improve your fitness level and your health. Ask your doctor what types and amounts of activity are safe for you. Read more about Physical Activity and Your Heart.</p> <p>Quit Smoking. If you smoke, quit. Smoking can damage and tighten blood vessels and raise your risk for atherosclerosis. Talk with your doctor about programs and products that can help you quit. Also, try to avoid secondhand smoke.</p> <p>Weight Control. If you're overweight or obese, work with your doctor to create a reasonable weight-loss plan. Controlling your weight helps you control risk factors for atherosclerosis.</p> <p>Other steps that can prevent or delay atherosclerosis include knowing your family history of atherosclerosis. If you or someone in your family has an atherosclerosis-related disease, be sure to tell your doctor.</p> <p>If lifestyle changes aren't enough, your doctor may prescribe medicines to control your atherosclerosis risk factors. Take all of your medicines as your doctor advises.</p>	NHLBI	Atherosclerosis

What is (are) Arrhythmia ?	<p>Español</p> <p>An arrhythmia (ah-RITH-me-ah) is a problem with the rate or rhythm of the heartbeat. During an arrhythmia, the heart can beat too fast, too slow, or with an irregular rhythm.</p> <p>A heartbeat that is too fast is called tachycardia (TAK-ih-KAR-de-ah). A heartbeat that is too slow is called bradycardia (bray-de-KAR-de-ah).</p> <p>Most arrhythmias are harmless, but some can be serious or even life threatening. During an arrhythmia, the heart may not be able to pump enough blood to the body. Lack of blood flow can damage the brain, heart, and other organs.</p> <p>Understanding the Heart's Electrical System</p> <p>To understand arrhythmias, it helps to understand the heart's internal electrical system. The heart's electrical system controls the rate and rhythm of the heartbeat.</p> <p>With each heartbeat, an electrical signal spreads from the top of the heart to the bottom. As the signal travels, it causes the heart to contract and pump blood.</p> <p>Each electrical signal begins in a group of cells called the sinus node or sinoatrial (SA) node. The SA node is located in the heart's upper right chamber, the right atrium (AY-tree-um). In a healthy adult heart at rest, the SA node sends out about 100 signals per minute.</p> <p>From the SA node, the electrical signal travels through special pathways in the right and left atria. This causes the atria to contract and pump blood into the heart's two lower chambers, the ventricles (VEN-trih-kuls).</p> <p>The electrical signal then moves down to a group of cells called the atrioventricular (AV) node, located between the atria and the ventricles. Here, the signal slows down just a little, allowing the ventricles time to finish filling with blood.</p> <p>The electrical signal then leaves the AV node and travels along a pathway called the bundle of His. This pathway divides into a right bundle branch and a left bundle branch. The signal goes down these branches to the ventricles.</p> <p>The ventricles then relax, and the heartbeat process starts all over again in the SA node. (For more information about the heart's electrical system, including detailed animations, go to the Health Topics How the Heart Works section.)</p> <p>A problem with any part of this process can cause an arrhythmia. For example, in atrial fibrillation (A-tre-ah fi-bri-LA-shun), a common type of arrhythmia, electrical signals travel through the atria in a fast and disorganized way.</p> <p>Outlook</p> <p>There are many types of arrhythmia. Most arrhythmias are harmless, but some are not. The outlook for a person who has an arrhythmia depends on the type and severity of the arrhythmia.</p> <p>Even serious arrhythmias often can be successfully treated. Most people who have arrhythmias are able to live normal, healthy lives.</p>	NHLBI	Arrhythmia
What causes Arrhythmia ?	<p>An arrhythmia can occur if the electrical signals that control the heartbeat are delayed or blocked. This can happen if the special nerve cells that produce electrical signals don't work properly. It also can happen if the electric system is damaged.</p> <p>An arrhythmia also can occur if another part of the heart starts to produce electrical signals. This adds to the signals from the special nerve cells and disrupts the normal heartbeat.</p> <p>Smoking, heavy alcohol use, use of some drugs (such as cocaine or amphetamines), use of some prescription or over-the-counter medicines, or too much caffeine or nicotine can lead to arrhythmias in some people.</p> <p>Strong emotional stress or anger can make the heart work harder, raise blood pressure, and release stress hormones. Sometimes these reactions can lead to arrhythmias.</p> <p>A heart attack or other condition that damages the heart's electrical system also can cause arrhythmias. Examples of such conditions include high blood pressure, coronary heart disease, heart failure, an overactive or underactive thyroid gland, and congenital heart defects.</p> <p>Congenital (kon-JEN-ih-tal) heart defects can cause some arrhythmias, such as Wolff-Parkinson-White syndrome. The term "congenital" means the defect is present at birth.</p> <p>Sometimes the cause of arrhythmias is unknown.</p>	NHLBI	Arrhythmia
Who is at risk for Arrhythmia? ?	<p>Arrhythmias are very common in older adults. Atrial fibrillation (a common type of arrhythmia that can cause problems) affects millions of people, and the number is rising.</p> <p>Most serious arrhythmias affect people older than 60. This is because older adults are more likely to have heart disease and other health problems that can lead to arrhythmias.</p> <p>Older adults also tend to be more sensitive to the side effects of medicines, some of which can cause arrhythmias. Some medicines used to treat arrhythmias can even cause arrhythmias as a side effect.</p> <p>Some types of arrhythmia happen more often in children and young adults. Paroxysmal supraventricular tachycardia (PSVT), including Wolff-Parkinson-White syndrome, is more common in young people. PSVT is a fast heartbeat that comes and goes.</p> <p>Major Risk Factors</p> <p>Arrhythmias are more common in people who have diseases or conditions that weaken the heart, such as:</p> <p>Heart attack</p> <p>Heart failure or cardiomyopathy, which weakens the heart and changes the way electrical signals move through the heart</p> <p>Heart tissue that's too thick or stiff or that hasn't formed normally</p> <p>Leaking or narrowed heart valves, which make the heart work too hard and can lead to heart failure</p> <p>Congenital heart defects (defects present at birth) that affect the heart's structure or function</p> <p>Other conditions also can raise the risk for arrhythmias, such as:</p> <p>High blood pressure</p> <p>Infections that damage the heart muscle or the sac around the heart</p> <p>Diabetes, which increases the risk of high blood pressure and coronary heart disease</p> <p>Sleep apnea, which can stress the heart because the heart doesn't get enough oxygen</p> <p>An overactive or underactive thyroid gland (too much or too little thyroid hormone in the body)</p> <p>Several other risk factors also can raise your risk for arrhythmias. Examples include heart surgery, certain drugs (such as cocaine or amphetamines), or an imbalance of chemicals or other substances (such as potassium) in the blood.</p>	NHLBI	Arrhythmia
What are the symptoms of Arrhythmia ?	<p>Many arrhythmias cause no signs or symptoms. When signs or symptoms are present, the most common ones are:</p> <p>Palpitations (feelings that your heart is skipping a beat, fluttering, or beating too hard or fast)</p> <p>A slow heartbeat</p> <p>An irregular heartbeat</p> <p>Feeling pauses between heartbeats</p> <p>More serious signs and symptoms include:</p> <p>Anxiety</p> <p>Weakness, dizziness, and light-headedness</p> <p>Fainting or nearly fainting</p> <p>Sweating</p> <p>Shortness of breath</p> <p>Chest pain</p>	NHLBI	Arrhythmia
How to diagnose Arrhythmia ?	<p>Arrhythmias can be hard to diagnose, especially the types that only cause symptoms every once in a while. Doctors diagnose arrhythmias based on medical and family histories, a physical exam, and the results from tests and procedures.</p> <p>Specialists Involved</p> <p>Doctors who specialize in the diagnosis and treatment of heart diseases include:</p> <p>Cardiologists. These doctors diagnose and treat adults who have heart problems.</p> <p>Pediatric cardiologists. These doctors diagnose and treat babies, children, and youth who have heart problems.</p> <p>Electrophysiologists. These doctors are cardiologists or pediatric cardiologists who specialize in arrhythmias.</p> <p>Medical and Family Histories</p> <p>To diagnose an arrhythmia, your doctor may ask you to describe your symptoms. He or she may ask whether you feel fluttering in your chest and whether you feel dizzy or light-headed.</p> <p>Your doctor also may ask whether you have other health problems, such as a history of heart disease, high blood pressure, diabetes, or thyroid problems. He or she may ask about your family's medical history, including whether anyone in your family has had an arrhythmia.</p> <p>Has a history of arrhythmias</p> <p>Has ever had heart disease or high blood pressure</p> <p>Has died suddenly</p> <p>Has other illnesses or health problems</p> <p>Your doctor will likely want to know what medicines you're taking, including over-the-counter medicines and supplements.</p> <p>Your doctor may ask about your health habits, such as physical activity, smoking, or using alcohol or drugs (for example, cocaine). He or she also may want to know whether you've had emotional stress or anger.</p> <p>Physical Exam</p> <p>During a physical exam, your doctor may:</p> <p>Listen to the rate and rhythm of your heartbeat</p> <p>Listen to your heart for a heart murmur (an extra or unusual sound heard during your heartbeat)</p> <p>Check your pulse to find out how fast your heart is beating</p> <p>Check for swelling in your legs or feet, which could be a sign of an enlarged heart or heart failure</p> <p>Look for signs of other diseases, such as thyroid disease, that could be causing the problem</p> <p>Diagnostic Tests and Procedures</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that detects and records the heart's electrical activity. It's the most common test used to diagnose arrhythmias.</p> <p>An EKG shows how fast the heart is beating and its rhythm (steady or irregular). It also records the strength and timing of electrical signals as they pass through the heart.</p> <p>A standard EKG only records the heartbeat for a few seconds. It won't detect arrhythmias that don't happen during the test.</p> <p>To diagnose arrhythmias that come and go, your doctor may have you wear a portable EKG monitor. The two most common types of portable EKGs are Holter and event monitors.</p> <p>Holter and Event Monitors</p> <p>A Holter monitor records the heart's electrical signals for a full 24- or 48-hour period. You wear one while you do your normal daily activities. This allows the monitor to record your heart for a longer time than a standard EKG.</p> <p>An event monitor is similar to a Holter monitor. You wear an event monitor while doing your normal activities. However, an event monitor only records your heart's electrical activity at certain times while you're wearing it.</p> <p>For many event monitors, you push a button to start the monitor when you feel symptoms. Other event monitors start automatically when they sense abnormal heart rhythms.</p> <p>Some event monitors are able to send data about your heart's electrical activity to a central monitoring station. Technicians at the station review the information and send it to your doctor. You also can use the device to report symptoms.</p> <p>You can wear an event monitor for weeks or until symptoms occur.</p> <p>Other Tests</p> <p>Other tests also are used to help diagnose arrhythmias.</p> <p>Blood tests. Blood tests check the level of substances in the blood, such as potassium and thyroid hormone. Abnormal levels of these substances can increase your chances of having an arrhythmia.</p> <p>Chest x ray. A chest x ray is a painless test that creates pictures of the structures in your chest, such as your heart and lungs. This test can show whether your heart is enlarged.</p> <p>Echocardiography. This test uses sound waves to create a moving picture of your heart. Echocardiography (echo) provides information about the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>The test also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>There are several types of echo, including stress echo. This test is done both before and after a stress test (see below). A stress echo usually is done to find out whether you have decreased blood flow to your heart, a sign of coronary artery disease.</p> <p>A tranesophageal (tranz-ih-sof-uh-JEE-ul) echo, or TEE, is a special type of echo that takes pictures of the heart through the esophagus. The esophagus is the passage leading from your mouth to your stomach.</p> <p>Stress test. Some heart problems are easier to diagnose when your heart is working hard and beating fast. During stress testing, you exercise to make your heart work hard and beat fast while heart tests are done. If you can't exercise, your doctor may use a drug to make your heart beat faster.</p> <p>The heart tests done during stress testing may include nuclear heart scanning, echo, and positron emission tomography (PET) scanning of the heart.</p> <p>Electrophysiology study (EPS). This test is used to assess serious arrhythmias. During an EPS, a thin, flexible wire is passed through a vein in your groin (upper thigh) or arm to your heart. The wire records your heart's electrical activity.</p> <p>Your doctor can use the wire to electrically stimulate your heart and trigger an arrhythmia. This allows your doctor to see whether an antiarrhythmia medicine can stop the problem.</p> <p>Catheter ablation, a procedure used to treat some arrhythmias, may be done during an EPS.</p> <p>Tilt table testing. This test sometimes is used to help find the cause of fainting spells. You lie on a table that moves from a lying down to an upright position. The change in position may cause you to faint.</p> <p>Your doctor watches your symptoms, heart rate, EKG reading, and blood pressure throughout the test. He or she may give you medicine and then check your response to the medicine.</p> <p>Coronary angiography. Coronary angiography uses dye and special x rays to show the inside of your coronary arteries. To get the dye into your coronary arteries, your doctor will use a procedure called cardiac catheterization.</p> <p>A thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck. The tube is threaded into your coronary arteries, and the dye is released into your bloodstream.</p> <p>Special x rays are taken while the dye is flowing through your coronary arteries. The dye lets your doctor study the flow of blood through your heart and blood vessels. This helps your doctor find blockages that can cause a heart attack.</p> <p>Implantable loop recorder. This device detects abnormal heart rhythms. Minor surgery is used to place this device under the skin in the chest area.</p> <p>An implantable loop recorder helps doctors figure out why a person may be having palpitations or fainting spells, especially if these symptoms don't happen very often. The device can be used for as long as 12 to 24 months.</p>	NHLBI	Arrhythmia

What are the treatments for Arrhythmia ?	<p>Common arrhythmia treatments include medicines, medical procedures, and surgery. Your doctor may recommend treatment if your arrhythmia causes serious symptoms, such as dizziness, chest pain, or fainting. Your doctor also may recommend treatment if the arrhythmia increases your risk for problems such as heart failure, stroke, or sudden cardiac arrest.</p> <p>Medicines</p> <p>Medicines can slow down a heart that's beating too fast. They also can change an abnormal heart rhythm to a normal, steady rhythm. Medicines that do this are called antiarrhythmics.</p> <p>Some of the medicines used to slow a fast heart rate are beta blockers (such as metoprolol and atenolol), calcium channel blockers (such as diltiazem and verapamil), and digoxin (digitalis). These medicines often are used to restore a normal heart rhythm.</p> <p>Some of the medicines used to restore a normal heart rhythm are amiodarone, sotalol, flecainide, propafenone, dofetilide, ibutilide, quinidine, procainamide, and disopyramide. These medicines often have side effects. Some medicines can also slow down a heart rate.</p> <p>Currently, no medicine can reliably speed up a slow heart rate. Abnormally slow heart rates are treated with pacemakers.</p> <p>People who have AF and some other arrhythmias may be treated with blood-thinning medicines. These medicines reduce the risk of blood clots forming. Warfarin (Coumadin), dabigatran, heparin, and aspirin are examples of blood-thinning medicines.</p> <p>Medicines also can control an underlying medical condition that might be causing an arrhythmia, such as heart disease or a thyroid condition.</p> <p>Medical Procedures</p> <p>Some arrhythmias are treated with pacemakers. A pacemaker is a small device that's placed under the skin of your chest or abdomen to help control abnormal heart rhythms.</p> <p>Pacemakers have sensors that detect the heart's electrical activity. When the device senses an abnormal heart rhythm, it sends electrical pulses to prompt the heart to beat at a normal rate.</p> <p>Some arrhythmias are treated with a jolt of electricity to the heart. This type of treatment is called cardioversion or defibrillation, depending on which type of arrhythmia is being treated.</p> <p>Some people who are at risk for ventricular fibrillation are treated with a device called an implantable cardioverter defibrillator (ICD). Like a pacemaker, an ICD is a small device that's placed under the skin in the chest. This device can deliver a jolt of electricity to the heart to restore a normal heart rate.</p> <p>An ICD continuously monitors the heartbeat. If it senses a dangerous ventricular arrhythmia, it sends an electric shock to the heart to restore a normal heartbeat.</p> <p>A procedure called catheter ablation is used to treat some arrhythmias if medicines don't work. During this procedure, a thin, flexible tube is put into a blood vessel in your arm, groin (upper thigh), or neck. Then, the tube is guided to the heart. A special machine sends energy through the tube to your heart. The energy finds and destroys small areas of heart tissue where abnormal heart rhythms may start. Catheter ablation usually is done in a hospital as part of an outpatient procedure.</p> <p>Your doctor may recommend transesophageal echocardiography before catheter ablation to make sure no blood clots are present in the atria (the heart's upper chambers).</p> <p>Surgery</p> <p>Doctors treat some arrhythmias with surgery. This may occur if surgery is already being done for another reason, such as repair of a heart valve.</p> <p>One type of surgery for AF is called maze surgery. During this surgery, a surgeon makes small cuts or burns in the atria. These cuts or burns prevent the spread of disorganized electrical signals.</p> <p>If coronary heart disease is the cause of your arrhythmia, your doctor may recommend coronary artery bypass grafting. This surgery improves blood flow to the heart muscle.</p> <p>Other Treatments</p> <p>Vagal maneuvers are another type of treatment for arrhythmia. These simple exercises sometimes can stop or slow down certain types of supraventricular arrhythmias. They do this by affecting the vagus nerve, which helps control the heart rate.</p> <p>Some vagal maneuvers include:</p> <ul style="list-style-type: none">GaggingHolding your breath and bearing down (Valsalva maneuver)Immersing your face in ice-cold waterCoughingPutting your fingers on your eyelids and pressing down gently <p>Vagal maneuvers aren't an appropriate treatment for everyone. Discuss with your doctor whether vagal maneuvers are an option for you.</p>	NHLBI	Arrhythmia
What is (are) Coronary Heart Disease ?	<p>Etiology</p> <p>Coronary heart disease (CHD) is a disease in which a waxy substance called plaque builds up inside the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.</p> <p>When plaque builds up in the arteries, the condition is called atherosclerosis. The buildup of plaque occurs over many years.</p> <p>Atherosclerosis</p> <p>Over time, plaque can harden or rupture (break open). Hardened plaque narrows the coronary arteries and reduces the flow of oxygen-rich blood to the heart.</p> <p>If the plaque ruptures, a blood clot can form on its surface. A large blood clot can mostly or completely block blood flow through a coronary artery. Over time, ruptured plaque also hardens and narrows the coronary arteries.</p> <p>Overview</p> <p>If the flow of oxygen-rich blood to your heart muscle is reduced or blocked, angina or a heart attack can occur.</p> <p>Angina is chest pain or discomfort. It may feel like pressure or squeezing in your chest. The pain also can occur in your shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion.</p> <p>A heart attack occurs if the flow of oxygen-rich blood to a section of heart muscle is cut off. If blood flow isn't restored quickly, the section of heart muscle begins to die. Without quick treatment, a heart attack can lead to serious complications or death.</p> <p>Over time, CHD can weaken the heart muscle and lead to heart failure and arrhythmias. Heart failure is a condition in which your heart can't pump enough blood to meet your body's needs. Arrhythmias are problems with the heart's rhythm.</p> <p>Outlook</p> <p>Lifestyle changes, medicines, and medical procedures can help prevent or treat coronary heart disease. These treatments may reduce the risk of related health problems.</p> <p>Research suggests that coronary heart disease (CHD) starts when certain factors damage the inner layers of the coronary arteries. These factors include:</p>	NHLBI	Coronary Heart Disease
What causes Coronary Heart Disease ?	<p>Smoking</p> <p>High levels of certain fats and cholesterol in the blood</p> <p>High blood pressure</p> <p>High levels of sugar in the blood due to insulin resistance or diabetes</p> <p>Blood vessel inflammation</p> <p>Plaque might begin to build up where the arteries are damaged. The buildup of plaque in the coronary arteries may start in childhood.</p> <p>Over time, plaque can harden or rupture (break open). Hardened plaque narrows the coronary arteries and reduces the flow of oxygen-rich blood to the heart. This can cause angina (chest pain or discomfort).</p> <p>If the plaque ruptures, blood cell fragments called platelets (PLATE-lets) stick to the site of the injury. They may clump together to form blood clots.</p> <p>Blood clots can further narrow the coronary arteries and worsen angina. If a clot becomes large enough, it can mostly or completely block a coronary artery and cause a heart attack.</p>	NHLBI	Coronary Heart Disease
Who is at risk for Coronary Heart Disease? ?	<p>In the United States, coronary heart disease (CHD) is a leading cause of death for both men and women. Each year, about 370,000 Americans die from coronary heart disease.</p> <p>Certain traits, conditions, or habits may raise your risk for CHD. The more risk factors you have, the more likely you are to develop the disease.</p> <p>You can control many risk factors, which may help prevent or delay CHD.</p> <p>Major Risk Factors</p> <p>Unhealthy blood cholesterol levels. This includes high LDL cholesterol (sometimes called bad cholesterol) and low HDL cholesterol (sometimes called good cholesterol).</p> <p>High blood pressure. Blood pressure is considered high if it stays at or above 140/90 mmHg over time. If you have diabetes or chronic kidney disease, high blood pressure is defined as 130/80 mmHg or higher. (The mmHg is a unit of measurement for blood pressure.)</p> <p>Smoking. Smoking can damage and tighten blood vessels, lead to unhealthy cholesterol levels, and raise blood pressure. Smoking also can limit how much oxygen reaches the body's tissues.</p> <p>Insulin resistance. This condition occurs if the body can't use its own insulin properly. Insulin is a hormone that helps move blood sugar into cells where it's used for energy. Insulin resistance may lead to diabetes.</p> <p>Diabetes. With this disease, the body's blood sugar level is too high because the body doesn't make enough insulin or doesn't use its insulin properly.</p> <p>Overweight or obesity. The terms overweight and obesity refer to body weight that's greater than what is considered healthy for a certain height.</p> <p>Metabolic syndrome. Metabolic syndrome is the name for a group of risk factors that raises your risk for CHD and other health problems, such as diabetes and stroke.</p> <p>Lack of physical activity. Being physically inactive can worsen other risk factors for CHD, such as unhealthy blood cholesterol levels, high blood pressure, diabetes, and overweight or obesity.</p> <p>Unhealthy diet. An unhealthy diet can raise your risk for CHD. Foods that are high in saturated and trans fats, cholesterol, sodium, and sugar can worsen other risk factors for CHD.</p> <p>Older age. Genetic or lifestyle factors cause plaque to build up in your arteries as you age. In men, the risk for coronary heart disease increases starting at age 45. In women, the risk for coronary heart disease increases starting at age 55.</p> <p>A family history of early coronary heart disease is a risk factor for developing coronary heart disease, specifically if a father or brother is diagnosed before age 55, or a mother or sister is diagnosed before age 65.</p> <p>Although older age and a family history of early heart disease are risk factors, it doesn't mean that you'll develop CHD if you have one or both. Controlling other risk factors often can lessen genetic influences and help prevent heart disease.</p> <p>Emerging Risk Factors</p> <p>Researchers continue to study other possible risk factors for CHD.</p> <p>High levels of a protein called C-reactive protein (CRP) in the blood may raise the risk of CHD and heart attack. High levels of CRP are a sign of inflammation in the body.</p> <p>Inflammation is the body's response to injury or infection. Damage to the arteries' inner walls may trigger inflammation and help plaque grow.</p> <p>Research is under way to find out whether reducing inflammation and lowering CRP levels also can reduce the risk of CHD and heart attack.</p> <p>High levels of triglycerides in the blood also may raise the risk of CHD, especially in women. Triglycerides are a type of fat.</p> <p>Other Risks Related to Coronary Heart Disease</p> <p>Other conditions and factors also may contribute to CHD, including:</p> <p>Sleep apnea. Sleep apnea is a common disorder in which you have one or more pauses in breathing or shallow breaths while you sleep. Untreated sleep apnea can increase your risk for high blood pressure, diabetes, and even heart disease.</p> <p>Stress. Research shows that the most commonly reported "trigger" for a heart attack is an emotionally upsetting event, especially one involving anger.</p> <p>Alcohol. Heavy drinking can damage the heart muscle and worsen other CHD risk factors. Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day.</p> <p>Preeclampsia. This condition can occur during pregnancy. The two main signs of preeclampsia are a rise in blood pressure and excess protein in the urine. Preeclampsia is linked to an increased lifetime risk of heart disease.</p> <p>For more detailed information, go to the Health Topics Coronary Heart Disease Risk Factors article.</p>	NHLBI	Coronary Heart Disease

What are the symptoms of Coronary Heart Disease ?	<p>A common symptom of coronary heart disease (CHD) is angina. Angina is chest pain or discomfort that occurs if an area of your heart muscle doesn't get enough oxygen-rich blood.</p> <p>Angina may feel like pressure or squeezing in your chest. You also may feel it in your shoulders, arms, neck, jaw, or back. Angina pain may even feel like indigestion. The pain tends to get worse with activity and go away with rest.</p> <p>Another common symptom of CHD is shortness of breath. This symptom occurs if CHD causes heart failure. When you have heart failure, your heart can't pump enough blood to meet your body's needs. Fluid builds up in your lungs, which makes it harder to breathe.</p> <p>The severity of these symptoms varies. They may get more severe as the buildup of plaque continues to narrow the coronary arteries.</p> <p>Signs and Symptoms of Heart Problems Related to Coronary Heart Disease</p> <p>Some people who have CHD have no signs or symptoms a condition called silent CHD. The disease might not be diagnosed until a person has signs or symptoms of a heart attack, heart failure, or an arrhythmia (an irregular heart rate).</p> <p>Heart Attack</p> <p>A heart attack occurs if the flow of oxygen-rich blood to a section of heart muscle is cut off. This can happen if an area of plaque in a coronary artery ruptures (breaks open).</p> <p>Blood cell fragments called platelets stick to the site of the injury and may clump together to form blood clots. If a clot becomes large enough, it can mostly or completely block blood flow through a coronary artery.</p> <p>If the blockage isn't treated quickly, the portion of heart muscle fed by the artery begins to die. Healthy heart tissue is replaced with scar tissue. This heart damage may not be obvious, or it may cause severe or long-lasting problems.</p> <p>Heart With Muscle Damage and a Blocked Artery</p> <p>The most common heart attack symptom is chest pain or discomfort. Most heart attacks involve discomfort in the center or left side of the chest that often lasts for more than a few minutes or goes away and comes back.</p> <p>The discomfort can feel like uncomfortable pressure, squeezing, fullness, or pain. The feeling can be mild or severe. Heart attack pain sometimes feels like indigestion or heartburn.</p> <p>The symptoms of angina can be similar to the symptoms of a heart attack. Angina pain usually lasts for only a few minutes and goes away with rest.</p> <p>Chest pain or discomfort that doesn't go away or changes from its usual pattern (for example, occurs more often or while you're resting) might be a sign of a heart attack. If you don't know whether your chest pain is angina or a heart attack, call your doctor or emergency services.</p> <p>All chest pain should be checked by a doctor.</p> <p>Other common signs and symptoms of a heart attack include:</p> <ul style="list-style-type: none">Upper body discomfort in one or both arms, the back, neck, jaw, or upper part of the stomachShortness of breath, which may occur with or before chest discomfortNausea (feeling sick to your stomach), vomiting, light-headedness or fainting, or breaking out in a cold sweatSleep problems, fatigue (tiredness), or lack of energy <p>For more information, go to the Health Topics Heart Attack article.</p> <p>Heart Failure</p> <p>Heart failure is a condition in which your heart can't pump enough blood to meet your body's needs. Heart failure doesn't mean that your heart has stopped or is about to stop working.</p> <p>The most common signs and symptoms of heart failure are shortness of breath or trouble breathing; fatigue; and swelling in the ankles, feet, legs, stomach, and veins in the neck.</p> <p>All of these symptoms are the result of fluid buildup in your body. When symptoms start, you may feel tired and short of breath after routine physical effort, like climbing stairs.</p> <p>For more information, go to the Health Topics Heart Failure article.</p> <p>Arrhythmia</p> <p>An arrhythmia is a problem with the rate or rhythm of the heartbeat. When you have an arrhythmia, you may notice that your heart is skipping beats or beating too fast.</p> <p>Some people describe arrhythmias as a fluttering feeling in the chest. These feelings are called palpitations (pal-pih-TA-shuns).</p> <p>Some arrhythmias can cause your heart to suddenly stop beating. This condition is called sudden cardiac arrest (SCA). SCA usually causes death if it's not treated within minutes.</p> <p>For more information, go to the Health Topics Arrhythmia article.</p>	NHLBI	Coronary Heart Disease
How to diagnose Coronary Heart Disease ?	<p>Your doctor will diagnose coronary heart disease (CHD) based on your medical and family histories, your risk factors for CHD, a physical exam, and the results from tests and procedures.</p> <p>No single test can diagnose CHD. If your doctor thinks you have CHD, he or she may recommend one or more of the following tests.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that detects and records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical impulses as they travel through the heart.</p> <p>An EKG can show signs of heart damage due to CHD and signs of a previous or current heart attack.</p> <p>Stress Testing</p> <p>During stress testing, you exercise to make your heart work hard and beat fast while heart tests are done. If you can't exercise, you may be given medicine to raise your heart rate.</p> <p>When your heart is working hard and beating fast, it needs more blood and oxygen. Plaque-narrowed arteries can't supply enough oxygen-rich blood to meet your heart's needs.</p> <p>A stress test can show possible signs and symptoms of CHD, such as:</p> <ul style="list-style-type: none">Abnormal changes in your heart rate or blood pressureShortness of breath or chest painAbnormal changes in your heart rhythm or your heart's electrical activity <p>If you can't exercise for as long as what is considered normal for someone your age, your heart may not be getting enough oxygen-rich blood. However, other factors also can prevent you from exercising long enough (for example, joint problems or asthma).</p> <p>As part of some stress tests, pictures are taken of your heart while you exercise and while you rest. These imaging stress tests can show how well blood is flowing in your heart and how well your heart pumps blood when it beats.</p> <p>Echocardiography</p> <p>Echocardiography (echo) uses sound waves to create a moving picture of your heart. The picture shows the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>Echo also can show areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>Chest X Ray</p> <p>A chest x ray takes pictures of the organs and structures inside your chest, such as your heart, lungs, and blood vessels.</p> <p>A chest x ray can reveal signs of heart failure, as well as lung disorders and other causes of symptoms not related to CHD.</p> <p>Blood Tests</p> <p>Blood tests check the levels of certain fats, cholesterol, sugar, and proteins in your blood. Abnormal levels might be a sign that you're at risk for CHD.</p> <p>Coronary Angiography and Cardiac Catheterization</p> <p>Your doctor may recommend coronary angiography (an-jee-OG-rah-fee) if other tests or factors show that you're likely to have CHD. This test uses dye and special x rays to show the insides of your coronary arteries.</p> <p>To get the dye into your coronary arteries, your doctor will use a procedure called cardiac catheterization (KATH-eh-ter-ih-ZA-shun).</p> <p>A thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck. The tube is threaded into your coronary arteries, and the dye is released into your bloodstream.</p> <p>Special x rays are taken while the dye is flowing through your coronary arteries. The dye lets your doctor study the flow of blood through your heart and blood vessels.</p> <p>Cardiac catheterization usually is done in a hospital. You're awake during the procedure. It usually causes little or no pain, although you may feel some soreness in the blood vessel where your doctor inserts the catheter.</p>	NHLBI	Coronary Heart Disease

What are the treatments for Coronary Heart Disease ?	<p>Treatments for coronary heart disease include heart-healthy lifestyle changes, medicines, medical procedures and surgery, and cardiac rehabilitation. Treatment goals may include:</p> <p>Lowering the risk of blood clots forming (blood clots can cause a heart attack)</p> <p>Preventing complications of coronary heart disease</p> <p>Reducing risk factors in an effort to slow, stop, or reverse the buildup of plaque</p> <p>Relieving symptoms</p> <p>Widening or bypassing clogged arteries</p>	NHLBI	Coronary Heart Disease
	<p>Heart-Healthy Lifestyle Changes</p> <p>Your doctor may recommend heart-healthy lifestyle changes if you have coronary heart disease. Heart-healthy lifestyle changes include:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p>		
	<p>Heart-Healthy Eating</p> <p>Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as fat-free milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fatfound mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids)found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur naturally in some animal products.</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list the amount of saturated fat in grams.</p> <p>1,200 calories a day</p> <p>8 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>12 grams of saturated fat a day</p> <p>2,000 calories a day</p> <p>13 grams of saturated fat a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels.</p> <p>Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking.</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are healthy.</p> <p>Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol can raise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounce of liquor</p>		
	<p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if you're a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood Institute's BMI calculator.</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25 and 29.9 is considered overweight.</p> <p>Of 30 or more is considered obese.</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, you're at a higher risk for heart disease and type 2 diabetes. This risk may be high with a very large waist.</p> <p>If you're overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight loss can lead to even greater health benefits.</p> <p>Managing Stress</p> <p>Research shows that the most commonly reported trigger for a heart attack is an emotionally upsetting event, particularly one involving anger. Also, some of the ways people cope with stress, such as drinking, smoking, or overeating, can increase the risk of heart disease.</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p>		
	<p>Physical Activity</p> <p>Routine physical activity can lower many coronary heart disease risk factors, including LDL (bad) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your HDL (good) cholesterol.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes per week, or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is any activity that gets your heart and lungs working harder than they do at rest.</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services 2008 Physical Activity Guidelines for Americans</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p>		
	<p>Quitting Smoking</p> <p>If you smoke, quit. Smoking can raise your risk for coronary heart disease and heart attack and worsen other coronary heart disease risk factors. Talk with your doctor about programs and products that can help you quit smoking.</p> <p>If you have trouble quitting smoking on your own, consider joining a support group. Many hospitals, workplaces, and community groups offer classes to help people quit smoking. Read more about quitting smoking at Smokefree.gov.</p>		
	<p>Medicines</p> <p>Sometimes lifestyle changes aren't enough to control your blood cholesterol levels. For example, you may need statin medications to control or lower your cholesterol. By lowering your cholesterol level, you can decrease your risk of coronary heart disease, peripheral artery disease, or having a stroke.</p> <p>Diabetes</p> <p>High LDL cholesterol levels</p> <p>Doctors may discuss beginning statin treatment with those who have an elevated risk for developing heart disease or having a stroke.</p> <p>Your doctor also may prescribe other medications to:</p> <p>Decrease your chance of having a heart attack or dying suddenly.</p> <p>Lower your blood pressure.</p> <p>Prevent blood clots, which can lead to heart attack or stroke.</p> <p>Prevent or delay the need for a stent or percutaneous coronary intervention (PCI) or surgery, such as coronary artery bypass grafting (CABG).</p> <p>Reduce your heart's workload and relieve coronary heart disease symptoms.</p> <p>Take all medicines regularly, as your doctor prescribes. Don't change the amount of your medicine or skip a dose unless your doctor tells you to. You should still follow a heart-healthy lifestyle, even if you take medicines to treat your heart disease.</p>		
	<p>Medical Procedures and Surgery</p> <p>You may need a procedure or surgery to treat coronary heart disease. Both PCI and CABG are used to treat blocked coronary arteries. You and your doctor can discuss which treatment is right for you.</p> <p>Percutaneous Coronary Intervention</p> <p>Percutaneous coronary intervention, commonly known as angioplasty, is a nonsurgical procedure that opens blocked or narrowed coronary arteries. A thin, flexible tube with a balloon or other device on the end is threaded through the artery. During the procedure, the doctor may put a small mesh tube called a stent in the artery. The stent helps prevent blockages in the artery in the months or years after angioplasty. Read more about this procedure at PCI.</p> <p>Coronary Artery Bypass Grafting</p> <p>CABG is a type of surgery in which arteries or veins from other areas in your body are used to bypass (that is, go around) your narrowed coronary arteries. CABG can improve blood flow to your heart, relieve chest pain, and prevent heart attacks.</p> <p>Read more about this surgery at CABG.</p> <p>Cardiac Rehabilitation</p> <p>Your doctor may prescribe cardiac rehabilitation (rehab) for angina or after CABG, angioplasty, or a heart attack. Nearly everyone who has coronary heart disease can benefit from cardiac rehab. Cardiac rehab is a medically supervised program of exercise, education, and counseling.</p> <p>The cardiac rehab team may include doctors, nurses, exercise specialists, physical and occupational therapists, dietitians or nutritionists, and psychologists or other mental health specialists.</p> <p>Rehab has two parts:</p> <p>Exercise training</p> <p>Education and counseling</p>		

How to prevent Coronary Heart Disease ?	<p>You can prevent and control coronary heart disease (CHD)by taking action to control your risk factors with heart-healthy lifestyle changes and medicines. Examples of risk factors you can control include high blood cholesterol, high blood pressure, smoking, and diabetes.</p> <p>Your risk for CHD increases with the number of risk factors you have. To reduce your risk of CHD and heart attack, try to control each risk factor you have by adopting the following heart-healthy lifestyles:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Know your family history of health problems related to CHD. If you or someone in your family has CHD, be sure to tell your doctor. If lifestyle changes aren't enough, you also may need medicines to control your CHD risk factors.</p>	NHLBI	Coronary Heart Disease
What is (are) Patent Ductus Arteriosus ?	<p>Patent ductus arteriosus (PDA) is a heart problem that occurs soon after birth in some babies. In PDA, abnormal blood flow occurs between two of the major arteries connected to the heart.</p> <p>Before birth, the two major arteries—the aorta and the pulmonary (PUL-lun-ary) artery—are connected by a blood vessel called the ductus arteriosus. This vessel is an essential part of fetal blood circulation. Within minutes or up to a few days after birth, the vessel is supposed to close as part of the normal changes occurring in the baby's circulation.</p> <p>In some babies, however, the ductus arteriosus remains open (patent). This opening allows oxygen-rich blood from the aorta to mix with oxygen-poor blood from the pulmonary artery. This can put strain on the heart and increase the risk of heart problems.</p> <p>Normal Heart and Heart With Patent Ductus Arteriosus</p> <p>Go to the "How the Heart Works" section of this article for more details about how a normal heart works compared with a heart that has PDA.</p> <p>Overview</p> <p>PDA is a type of congenital (kon-JEN-ih-tal) heart defect. A congenital heart defect is any type of heart problem that's present at birth.</p> <p>If your baby has a PDA but an otherwise normal heart, the PDA may shrink and go away. However, some children need treatment to close their PDAs.</p> <p>Some children who have PDAs are given medicine to keep the ductus arteriosus open. For example, this may be done if a child is born with another heart defect that decreases blood flow to the lungs or the rest of the body. Keeping the PDA open helps maintain blood flow and oxygen levels until doctors can do surgery to correct the other heart defect.</p> <p>Outlook</p> <p>PDA is a fairly common congenital heart defect in the United States. Although the condition can affect full-term infants, it's more common in premature infants.</p> <p>On average, PDA occurs in about 8 out of every 1,000 premature babies, compared with 2 out of every 1,000 full-term babies. Premature babies also are more vulnerable to the effects of PDA.</p> <p>PDA is twice as common in girls as it is in boys.</p> <p>Doctors treat the condition with medicines, catheter-based procedures, and surgery. Most children who have PDAs live healthy, normal lives after treatment.</p> <p>If your child has patent ductus arteriosus (PDA), you may think you did something wrong during your pregnancy to cause the problem. However, the cause of patent ductus arteriosus isn't known.</p> <p>Genetics may play a role in causing the condition. A defect in one or more genes might prevent the ductus arteriosus from closing after birth.</p> <p>Patent ductus arteriosus (PDA) is a relatively common congenital heart defect in the United States.</p>	NHLBI	Patent Ductus Arteriosus
What causes Patent Ductus Arteriosus ?	<p>Patent ductus arteriosus (PDA) is a relatively common congenital heart defect in the United States.</p> <p>The condition occurs more often in premature infants (on average, occurring in about 8 of every 1,000 births). However, PDA also occurs in full-term infants (on average, occurring in about 2 of every 1,000 births).</p> <p>PDA also is more common in:</p> <ul style="list-style-type: none">Infants who have genetic conditions such as Down syndromeInfants whose mothers had German measles (rubella) during pregnancy <p>PDA is twice as common in girls as it is in boys.</p>	NHLBI	Patent Ductus Arteriosus
Who is at risk for Patent Ductus Arteriosus? ?	<p>A heart murmur may be the only sign that a baby has patent ductus arteriosus (PDA). A heart murmur is an extra or unusual sound heard during the heartbeat. Heart murmurs also have other causes besides PDA, and most are harmless.</p> <p>Some infants may develop signs or symptoms of volume overload on the heart and excess blood flow in the lungs. Signs and symptoms may include:</p> <ul style="list-style-type: none">Fast breathing, working hard to breathe, or shortness of breath. Premature infants may need increased oxygen or help breathing from a ventilator.Poor feeding and poor weight gain.Tiring easily.Sweating with exertion, such as while feeding.	NHLBI	Patent Ductus Arteriosus
How to diagnose Patent Ductus Arteriosus ?	<p>In full-term infants, patent ductus arteriosus (PDA) usually is first suspected when the baby's doctor hears a heart murmur during a regular checkup.</p> <p>A heart murmur is an extra or unusual sound heard during the heartbeat. Heart murmurs also have other causes besides PDA, and most murmurs are harmless.</p> <p>If a PDA is large, the infant also may develop symptoms of volume overload and increased blood flow to the lungs. If a PDA is small, it may not be diagnosed until later in childhood.</p> <p>If your child's doctor thinks your child has PDA, he or she may refer you to a pediatric cardiologist. This is a doctor who specializes in diagnosing and treating heart problems in children.</p> <p>Premature babies who have PDA may not have the same signs as full-term babies, such as heart murmurs. Doctors may suspect PDA in premature babies who develop breathing problems soon after birth. Tests can help confirm the diagnosis.</p> <p>Diagnostic Tests</p> <p>Echocardiography</p> <p>Echocardiography (echo) is a painless test that uses sound waves to create a moving picture of your baby's heart. During echo, the sound waves bounce off your child's heart. A computer converts the sound waves into pictures that your doctor can see.</p> <p>The test allows the doctor to clearly see any problems with the way the heart is formed or the way it's working. Echo is the most important test available to your baby's cardiologist to both diagnose a heart problem and follow up on treatment.</p> <p>In babies who have PDA, echo shows how big the PDA is and how well the heart is responding to it. When medical treatments are used to try to close a PDA, echo is used to see how well the treatments are working.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that records the heart's electrical activity. For babies who have PDA, an EKG can show whether the heart is enlarged. The test also can show other subtle changes that can suggest the presence of a heart problem.</p>	NHLBI	Patent Ductus Arteriosus
What are the treatments for Patent Ductus Arteriosus ?	<p>Patent ductus arteriosus (PDA) is treated with medicines, catheter-based procedures, and surgery. The goal of treatment is to close the PDA. Closure will help prevent complications and reverse the effects of increased blood flow to the lungs.</p> <p>Small PDAs often close without treatment. For full-term infants, treatment is needed if the PDA is large or causing health problems. For premature infants, treatment is needed if the PDA is causing breathing problems or heart failure.</p> <p>Talk with your child's doctor about treatment options and how your family prefers to handle treatment decisions.</p> <p>Medicines</p> <p>Your child's doctor may prescribe medicines to help close your child's PDA.</p> <p>Indomethacin (in-doh-METH-ah-sin) is a medicine that helps close PDAs in premature infants. This medicine triggers the PDA to constrict or tighten, which closes the opening. Indomethacin usually doesn't work in full-term infants.</p> <p>Ibuprofen also is used to close PDAs in premature infants. This medicine is similar to indomethacin.</p> <p>Catheter-Based Procedures</p> <p>Catheters are thin, flexible tubes that doctors use as part of a procedure called cardiac catheterization (KATH-ah-ter-ih-ZA-shun). Catheter-based procedures often are used to close PDAs in infants or children who are large enough for the procedure.</p> <p>Your child's doctor may refer to the procedure as "transcatheter device closure." The procedure sometimes is used for small PDAs to prevent the risk of infective endocarditis (IE). IE is an infection of the inner lining of the heart.</p> <p>Your child will be given medicine to help him or her relax or sleep during the procedure. The doctor will insert a catheter in a large blood vessel in the groin (upper thigh). He or she will then guide the catheter to your child's heart.</p> <p>A small metal coil or other blocking device is passed through the catheter and placed in the PDA. This device blocks blood flow through the vessel.</p> <p>Catheter-based procedures don't require the child's chest to be opened. They also allow the child to recover quickly.</p> <p>These procedures often are done on an outpatient basis. You'll most likely be able to take your child home the same day the procedure is done.</p> <p>Complications from catheter-based procedures are rare and short term. They can include bleeding, infection, and movement of the blocking device from where it was placed.</p> <p>Surgery</p> <p>Surgery to correct a PDA may be done if:</p> <ul style="list-style-type: none">A premature or full-term infant has health problems due to a PDA and is too small to have a catheter-based procedureA catheter-based procedure doesn't successfully close the PDA <p>Surgery is planned for treatment of related congenital heart defects</p> <p>Often, surgery isn't done until after 6 months of age in infants who don't have health problems from their PDAs. Doctors sometimes do surgery on small PDAs to prevent the risk of IE.</p> <p>For the surgery, your child will be given medicine so that he or she will sleep and not feel any pain. The surgeon will make a small incision (cut) between your child's ribs to reach the PDA. He or she will close the PDA using stitches.</p> <p>Complications from surgery are rare and usually short term. They can include hoarseness, a paralyzed diaphragm (the muscle below the lungs), infection, bleeding, or fluid buildup around the lungs.</p> <p>After Surgery</p> <p>After surgery, your child will spend a few days in the hospital. He or she will be given medicine to reduce pain and anxiety. Most children go home 2 days after surgery. Premature infants usually have to stay in the hospital longer.</p> <p>The doctors and nurses at the hospital will teach you how to care for your child at home. They will talk to you about:</p> <ul style="list-style-type: none">Limits on activity for your child while he or she recoversFollowup appointments with your child's doctorsHow to give your child medicines at home, if needed <p>When your child goes home after surgery, you can expect that he or she will feel fairly comfortable. However, your child may have some short-term pain.</p> <p>Your child should begin to eat better and gain weight quickly. Within a few weeks, he or she should fully recover and be able to take part in normal activities.</p> <p>Long-term complications from surgery are rare. However, they can include narrowing of the aorta, incomplete closure of the PDA, and reopening of the PDA.</p>	NHLBI	Patent Ductus Arteriosus
What is (are) Heart Valve Disease ?	<p>Heart valve disease occurs if one or more of your heart valves don't work well. The heart has four valves: the tricuspid, pulmonary, mitral, and aortic valves.</p> <p>These valves have tissue flaps that open and close with each heartbeat. The flaps make sure blood flows in the right direction through your heart's four chambers and to the rest of your body.</p> <p>Healthy Heart Cross-Section</p> <p>Birth defects, age-related changes, infections, or other conditions can cause one or more of your heart valves to not open fully or to let blood leak back into the heart chambers. This can make your heart work harder and affect your health.</p> <p>Overview</p> <p>How the Heart Valves Work</p> <p>At the start of each heartbeat, blood returning from the body and lungs fills the atria (the heart's two upper chambers). The mitral and tricuspid valves are located at the bottom of these chambers. As the blood builds up in the atria, the valves open to let blood flow into the ventricles.</p> <p>After a brief delay, as the ventricles begin to contract, the mitral and tricuspid valves shut tightly. This prevents blood from flowing back into the atria.</p> <p>As the ventricles contract, they pump blood through the pulmonary and aortic valves. The pulmonary valve opens to allow blood to flow from the right ventricle into the pulmonary artery. This artery carries blood to the lungs for oxygenation.</p> <p>At the same time, the aortic valve opens to allow blood to flow from the left ventricle into the aorta. The aorta carries oxygen-rich blood to the body. As the ventricles relax, the pulmonary and aortic valves shut tightly. This prevents blood from flowing back into the ventricles.</p> <p>For more information about how the heart pumps blood and detailed animations, go to the Health Topics How the Heart Works article.</p> <p>Heart Valve Problems</p> <p>Heart valves can have three basic kinds of problems: regurgitation, stenosis, and atresia.</p> <p>Regurgitation, or backflow, occurs if a valve doesn't close tightly. Blood leaks back into the chambers rather than flowing forward through the heart or into an artery.</p> <p>In the United States, backflow most often is due to prolapse. "Prolapse" is when the flaps of the valve flop or bulge back into an upper heart chamber during a heartbeat. Prolapse mainly affects the mitral valve.</p> <p>Stenosis occurs if the flaps of a valve thicken, stiffen, or fuse together. This prevents the heart valve from fully opening. As a result, not enough blood flows through the valve. Some valves can have both stenosis and backflow.</p> <p>Atresia occurs if a heart valve lacks an opening for blood to pass through.</p> <p>Some people are born with heart valve disease, while others acquire it later in life. Heart valve disease that develops before birth is called congenital heart valve disease. Congenital heart valve disease can occur alone or with other congenital heart problems.</p> <p>Congenital heart valve disease often involves pulmonary or aortic valves that don't form properly. These valves may not have enough tissue flaps, they may be the wrong size or shape, or they may lack an opening through which blood can flow.</p> <p>Acquired heart valve disease usually involves aortic or mitral valves. Although the valves are normal at first, problems develop over time.</p> <p>Both congenital and acquired heart valve disease can cause stenosis or backflow.</p> <p>Outlook</p> <p>Many people have heart valve defects or disease but don't have symptoms. For some people, the condition mostly stays the same throughout their lives and doesn't cause any problems.</p> <p>For other people, heart valve disease slowly worsens until symptoms develop. If not treated, advanced heart valve disease can cause heart failure, stroke, blood clots, or death due to sudden cardiac arrest (SCA).</p> <p>Currently, no medicines can cure heart valve disease. However, lifestyle changes and medicines can relieve many of its symptoms and complications.</p> <p>These treatments also can lower your risk of developing a life-threatening condition, such as stroke or SCA. Eventually, you may need to have your faulty heart valve repaired or replaced.</p> <p>Some types of congenital heart valve disease are so severe that the valve is repaired or replaced during infancy, childhood, or even before birth. Other types may not cause problems until middle-age or older, if at all.</p>	NHLBI	Heart Valve Disease

What causes Heart Valve Disease ?	<p>Heart conditions and other disorders, age-related changes, rheumatic fever, or infections can cause acquired heart valve disease. These factors change the shape or flexibility of once-normal heart valves.</p> <p>The cause of congenital heart valve disease isn't known. It occurs before birth as the heart is forming. Congenital heart valve disease can occur alone or with other types of congenital heart defects.</p> <p>Heart Conditions and Other Disorders</p> <p>Certain conditions can stretch and distort the heart valves. These conditions include:</p> <p>Advanced high blood pressure and heart failure, this can enlarge the heart or the main arteries.</p> <p>Atherosclerosis in the aorta. Atherosclerosis is a condition in which a waxy substance called plaque builds up inside the arteries. The aorta is the main artery that carries oxygen-rich blood to the body.</p> <p>Damage and scar tissue due to a heart attack or injury to the heart.</p> <p>Rheumatic Fever</p> <p>Untreated strep throat or other infections with strep bacteria that progress to rheumatic fever can cause heart valve disease.</p> <p>When the body tries to fight the strep infection, one or more heart valves may be damaged or scarred in the process. The aortic and mitral valves most often are affected. Symptoms of heart valve damage often don't appear until years after the infection.</p> <p>Today, most people who have strep infections are treated with antibiotics before rheumatic fever occurs. If you have strep throat, take all of the antibiotics your doctor prescribes, even if you feel better before the medicine is finished.</p> <p>Heart valve disease caused by rheumatic fever mainly affects older adults who had strep infections before antibiotics were available. It also affects people from developing countries, where rheumatic fever is more common.</p> <p>Infections</p> <p>Common germs that enter the bloodstream and get carried to the heart can sometimes infect the inner surface of the heart, including the heart valves. This rare but serious infection is called infective endocarditis.</p> <p>The germs can enter the bloodstream through needles, syringes, or other medical devices and through breaks in the skin or gums. Often, the body's defenses fight off the germs and no infection occurs. Sometimes these defenses fail.</p> <p>Infective endocarditis can develop in people who already have abnormal blood flow through a heart valve as the result of congenital or acquired heart valve disease. The abnormal blood flow causes blood clots to form on the heart valves.</p> <p>Infective endocarditis can worsen existing heart valve disease.</p> <p>Other Conditions and Factors Linked to Heart Valve Disease</p> <p>Many other conditions and factors are linked to heart valve disease. However, the role they play in causing heart valve disease often isn't clear.</p> <p>Autoimmune disorders. Autoimmune disorders, such as lupus, can affect the aortic and mitral valves.</p> <p>Carcinoid syndrome. Tumors in the digestive tract that spread to the liver or lymph nodes can affect the tricuspid and pulmonary valves.</p> <p>Diet medicines. The use of fenfluramine and phentermine (fen-phen) sometimes has been linked to heart valve problems. These problems typically stabilize or improve after the medicine is stopped.</p> <p>Marfan syndrome. Congenital disorders, such as Marfan syndrome and other connective tissue disorders, can affect the heart valves.</p> <p>Metabolic disorders. Relatively uncommon diseases (such as Fabry disease) and other metabolic disorders (such as high blood cholesterol) can affect the heart valves.</p> <p>Radiation therapy. Radiation therapy to the chest area can cause heart valve disease. This therapy is used to treat cancer. Heart valve disease due to radiation therapy may not cause symptoms until years after the therapy.</p>	NHLBI	Heart Valve Disease
Who is at risk for Heart Valve Disease? ?	<p>Older age is a risk factor for heart valve disease. As you age, your heart valves thicken and become stiffer. Also, people are living longer now than in the past. As a result, heart valve disease has become an increasing problem.</p> <p>People who have a history of infective endocarditis (IE), rheumatic fever, heart attack, or heart failure or previous heart valve disease also are at higher risk for heart valve disease. In addition, having risk factors for IE, such as infection, increases the risk.</p> <p>You're also at higher risk for heart valve disease if you have risk factors for coronary heart disease. These risk factors include high blood cholesterol, high blood pressure, smoking, insulin resistance, diabetes, overweight or obesity, and a family history of heart disease.</p> <p>Some people are born with an aortic valve that has two flaps instead of three. Sometimes an aortic valve may have three flaps, but two flaps are fused together and act as one flap. This is called a bicuspid or bicommissural aortic valve.</p>	NHLBI	Heart Valve Disease
What are the symptoms of Heart Valve Disease ?	<p>Major Signs and Symptoms</p> <p>The main sign of heart valve disease is an unusual heartbeat sound called a heart murmur. Your doctor can hear a heart murmur with a stethoscope.</p> <p>However, many people have heart murmurs without having heart valve disease or any other heart problems. Others may have heart murmurs due to heart valve disease, but have no other signs or symptoms.</p> <p>Heart valve disease often worsens over time, so signs and symptoms may occur years after a heart murmur is first heard. Many people who have heart valve disease don't have any symptoms until they're middle-aged or older.</p> <p>Other common signs and symptoms of heart valve disease relate to heart failure, which heart valve disease can cause. These signs and symptoms include:</p> <p>Unusual fatigue (tiredness)</p> <p>Shortness of breath, especially when you exert yourself or when you're lying down</p> <p>Swelling in your ankles, feet, legs, abdomen, and veins in the neck</p> <p>Other Signs and Symptoms</p>	NHLBI	Heart Valve Disease
How to diagnose Heart Valve Disease ?	<p>Heart valve disease can cause chest pain that may happen only when you exert yourself. You also may notice a fluttering, racing, or irregular heartbeat. Some types of heart valve disease, such as aortic or mitral valve stenosis, can cause chest pain.</p> <p>Your primary care doctor may detect a heart murmur or other signs of heart valve disease. However, a cardiologist usually will diagnose the condition. A cardiologist is a doctor who specializes in diagnosing and treating heart conditions.</p> <p>To diagnose heart valve disease, your doctor will ask about your signs and symptoms. He or she also will do a physical exam and look at the results from tests and procedures.</p> <p>Physical Exam</p> <p>Your doctor will listen to your heart with a stethoscope. He or she will want to find out whether you have a heart murmur that's likely caused by a heart valve problem.</p> <p>Your doctor also will listen to your lungs as you breathe to check for fluid buildup. He or she will check for swollen ankles and other signs that your body is retaining water.</p> <p>Tests and Procedures</p> <p>Echocardiography (echo) is the main test for diagnosing heart valve disease. But an EKG (electrocardiogram) or chest x ray commonly is used to reveal certain signs of the condition. If these signs are present, echo usually is the next test.</p> <p>Your doctor also may recommend other tests and procedures if you're diagnosed with heart valve disease. For example, you may have cardiac catheterization, (KATH-eh-ter-ih-ZA-shun), stress testing, or cardiac MRI (magnetic resonance imaging).</p> <p>EKG</p> <p>This simple test detects and records the heart's electrical activity. An EKG can detect an irregular heartbeat and signs of a previous heart attack. It also can show whether your heart chambers are enlarged.</p> <p>An EKG usually is done in a doctor's office.</p> <p>Chest X Ray</p> <p>This test can show whether certain sections of your heart are enlarged, whether you have fluid in your lungs, or whether calcium deposits are present in your heart.</p> <p>A chest x ray helps your doctor learn which type of valve defect you have, how severe it is, and whether you have any other heart problems.</p> <p>Echocardiography</p> <p>Echo uses sound waves to create a moving picture of your heart as it beats. A device called a transducer is placed on the surface of your chest.</p> <p>The transducer sends sound waves through your chest wall to your heart. Echoes from the sound waves are converted into pictures of your heart on a computer screen.</p> <p>Echo can show:</p> <p>The size and shape of your heart valves and chambers</p> <p>How well your heart is pumping blood</p> <p>Whether a valve is narrow or has backflow</p> <p>Your doctor may recommend transesophageal (tranz-ih-sof-uh-JEE-uh) echo, or TEE, to get a better image of your heart.</p> <p>During TEE, the transducer is attached to the end of a flexible tube. The tube is guided down your throat and into your esophagus (the passage leading from your mouth to your stomach). From there, your doctor can get detailed pictures of your heart.</p> <p>You'll likely be given medicine to help you relax during this procedure.</p> <p>Cardiac Catheterization</p> <p>For this procedure, a long, thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck and threaded to your heart. Your doctor uses x-ray images to guide the catheter.</p> <p>Through the catheter, your doctor does diagnostic tests and imaging that show whether backflow is occurring through a valve and how fully the valve opens. You'll be given medicine to help you relax, but you will be awake during the procedure.</p> <p>Your doctor may recommend cardiac catheterization if your signs and symptoms of heart valve disease aren't in line with your echo results.</p> <p>The procedure also can help your doctor assess whether your symptoms are due to specific valve problems or coronary heart disease. All of this information helps your doctor decide the best way to treat you.</p> <p>Stress Test</p> <p>During stress testing, you exercise to make your heart work hard and beat fast while heart tests and imaging are done. If you can't exercise, you may be given medicine to raise your heart rate.</p> <p>A stress test can show whether you have signs and symptoms of heart valve disease when your heart is working hard. It can help your doctor assess the severity of your heart valve disease.</p> <p>Cardiac MRI</p> <p>Cardiac MRI uses a powerful magnet and radio waves to make detailed images of your heart. A cardiac MRI image can confirm information about valve defects or provide more detailed information.</p> <p>This information can help your doctor plan your treatment. An MRI also may be done before heart valve surgery to help your surgeon plan for the surgery.</p>	NHLBI	Heart Valve Disease

What are the treatments for Heart Valve Disease ?	<p>Currently, no medicines can cure heart valve disease. However, lifestyle changes and medicines often can treat symptoms successfully and delay problems for many years. Eventually, though, you may need surgery to repair</p> <p>The goals of treating heart valve disease might include:</p> <p>Medicines</p> <p>Repairing or replacing faulty valves</p> <p>Lifestyle changes to treat other related heart conditions</p> <p>Medicines</p> <p>In addition to heart-healthy lifestyle changes, your doctor may prescribe medicines to:</p> <p>Lower high blood pressure or high blood cholesterol.</p> <p>Prevent arrhythmias (irregular heartbeats).</p> <p>Thin the blood and prevent clots (if you have a man-made replacement valve). Doctors also prescribe these medicines for mitral stenosis or other valve defects that raise the risk of blood clots.</p> <p>Treat coronary heart disease. Medicines for coronary heart disease can reduce your hearts workload and relieve symptoms.</p> <p>Treat heart failure. Heart failure medicines widen blood vessels and rid the body of excess fluid.</p> <p>Repairing or Replacing Heart Valves</p> <p>Your doctor may recommend repairing or replacing your heart valve(s), even if your heart valve disease isnt causing symptoms. Repairing or replacing a valve can prevent lasting damage to your heart and sudden death.</p> <p>The decision to repair or replace heart valves depends on many factors, including:</p> <p>The severity of your valve disease</p> <p>Whether you need heart surgery for other conditions, such as bypass surgery to treat coronary heart disease. Bypass surgery and valve surgery can be performed at the same time.</p> <p>Your age and general health</p> <p>When possible, heart valve repair is preferred over heart valve replacement. Valve repair preserves the strength and function of the heart muscle. People who have valve repair also have a lower risk of infective endocarditis af</p> <p>However, heart valve repair surgery is harder to do than valve replacement. Also, not all valves can be repaired. Mitral valves often can be repaired. Aortic and pulmonary valves often have to be replaced.</p> <p>Repairing Heart Valves</p> <p>Heart surgeons can repair heart valves by:</p> <p>Adding tissue to patch holes or tears or to increase the support at the base of the valve</p> <p>Removing or reshaping tissue so the valve can close tighter</p> <p>Separating fused valve flaps</p> <p>Sometimes cardiologists repair heart valves using cardiac catheterization. Although catheter procedures are less invasive than surgery, they may not work as well for some patients. Work with your doctor to decide whether r</p> <p>Heart valves that cannot open fully (stenosis) can be repaired with surgery or with a less invasive catheter procedure called balloon valvuloplasty. This procedure also is called balloonvalvotomy.</p> <p>During the procedure, a catheter (thin tube) with a balloon at its tip is threaded through a blood vessel to the faulty valve in your heart. The balloon is inflated to help widen the opening of the valve. Your doctor then deflates t</p> <p>Balloon valvuloplasty relieves many symptoms of heart valve disease, but may not cure it. The condition can worsen over time. You still may need medicines to treat symptoms or surgery to repair or replace the faulty valve. E</p> <p>Balloon valvuloplasty doesnt work as well as surgery for adults who have aortic valve stenosis. Doctors often use balloon valvuloplasty to repair valve stenosis in infants and children.</p> <p>Replacing Heart Valves</p> <p>Sometimes heart valves cant be repaired and must be replaced. This surgery involves removing the faulty valve and replacing it with a man-made or biological valve.</p> <p>Biological valves are made from pig, cow, or human heart tissue and may have man-made parts as well. These valves are specially treated, so you wont need medicines to stop your body from rejecting the valve.</p> <p>Man-made valves last longer than biological valves and usually dont have to be replaced. Biological valves usually have to be replaced after about 10 years, although newer ones may last 15 years or longer. Unlike biological v</p> <p>You and your doctor will decide together whether you should have a man-made or biological replacement valve.</p> <p>If youre a woman of childbearing age or if youre athletic, you may prefer a biological valve so you dont have to take blood-thinning medicines. If youre elderly, you also may prefer a biological valve, as it will likely last for the r</p> <p>Ross Procedure</p> <p>Doctors also can treat faulty aortic valves with the Ross procedure. During this surgery, your doctor removes your faulty aortic valve and replaces it with your pulmonary valve. Your pulmonary valve is then replaced with a pul</p> <p>This is more involved surgery than typical valve replacement, and it has a greater risk of complications. The Ross procedure may be especially useful for children because the surgically replaced valves continue to grow with t</p> <p>Other Approaches for Repairing and Replacing Heart Valves</p> <p>Some forms of heart valve repair and replacement surgery are less invasive than traditional surgery. These procedures use smaller incisions (cuts) to reach the heart valves. Hospital stays for these newer types of surgery usu</p> <p>New surgeries tend to cause less pain and have a lower risk of infection. Recovery time also tends to be shorter2to 4weeks versus 6to 8weeks for traditional surgery.</p> <p>Transcatheter Valve Therapy</p> <p>Interventional cardiologists perform procedures that involve threading clips or other devices to repair faulty heart valves using a catheter (tube) inserted through a large blood vessel. The clips or devices are used to reshape t</p> <p>Doctors also may use a catheter to replace faulty aortic valves. This procedure is called transcatheter aortic valve replacement (TAVR). For this procedure, the catheter usually is inserted into an artery in the groin (upper thigh)</p> <p>Once the replacement valve is placed properly, the balloon is used to expand the new valve so it fits securely within the old valve. The balloon is then deflated, and the balloon and catheter are removed.</p> <p>A replacement valve also can be inserted in an existing replacement valve that is failing. This is called a valve-in-valve procedure.</p> <p>Lifestyle Changes to Treat Other Related Heart</p> <p>To help treat heart conditions related to heart valve disease, your doctor may advise you to make heart-healthy lifestyle changes, such as:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fatfound mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids)found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list th</p> <p>AvocadosNot all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels. Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cool</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are hea</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who dont have high blood pressure. Read more about DASH.</p> <p>Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol can raise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weightgain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounces of liquor</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for heart valve disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if youre a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood In</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25.0 and 29.9 is considered overweight.</p> <p>Of 30.0 or higher is considered obese.</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, youre at a higher risk for heart disease and type2 diabetes. This risk may be higher with a</p> <p>If youre overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight lo</p> <p>Managing Stress</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Regular physical activity can lower many heart valve disease risk factors.</p> <p>Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes per week or vigorous aerobic exercise for 1 hour and 15 minutes per week. Aerobic exercise, such as brisk walking, is an</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services, 2008 Physical Activity Guidelines for Americans</p> <p>Quitting Smoking</p> <p>If you smoke or use tobacco, quit. Smoking can damage and tighten blood vessels and raise your risk for atherosclerosis and other health problems. Talk with your doctor about programs and products that can help you quit</p> <p>For more information about how to quit smoking, visit the Smoking and Your Heart Health Topic.</p>	NHLBI	Heart Valve Disease
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How to prevent Heart Valve Disease ?	<p>To prevent heart valve disease caused by rheumatic fever, see your doctor if you have signs of a strep infection. These signs include a painful sore throat, fever, and white spots on your tonsils. If you do have a strep infection, NHLBI recommends that you take antibiotics to prevent heart valve disease.</p> <p>Heart-healthy eating, physical activity, other heart-healthy lifestyle changes, and medicines aimed at preventing a heart attack, high blood pressure, or heart failure also may help prevent heart valve disease.</p>	NHLBI	Heart Valve Disease
What is (are) Heart Block ?	<p>Heart block is a problem that occurs with the heart's electrical system. This system controls the rate and rhythm of heartbeats. ("Rate" refers to the number of times your heart beats per minute. "Rhythm" refers to the pattern of heartbeats.)</p> <p>With each heartbeat, an electrical signal spreads across the heart from the upper to the lower chambers. As it travels, the signal causes the heart to contract and pump blood.</p> <p>Heart block occurs if the electrical signal is slowed or disrupted as it moves through the heart.</p> <p>Overview</p> <p>Heart block is a type of arrhythmia (ah-RITH-me-ah). An arrhythmia is any problem with the rate or rhythm of the heartbeat.</p> <p>Some people are born with heart block, while others develop it during their lifetimes. If you're born with the condition, it's called congenital (kon-JEN-ih-tal) heart block. If the condition develops after birth, it's called acquired heart block.</p> <p>Doctors might detect congenital heart block before or after a baby is born. Certain diseases that may occur during pregnancy can cause heart block in a baby. Some congenital heart defects also can cause heart block. Congenital heart block is more common than acquired heart block. Damage to the heart muscle or its electrical system causes acquired heart block. Diseases, surgery, or medicines can cause this damage.</p> <p>The three types of heart block are first degree, second degree, and third degree. First degree is the least severe, and third degree is the most severe. This is true for both congenital and acquired heart block.</p> <p>Doctors use a test called an EKG (electrocardiogram) to help diagnose heart block. This test detects and records the heart's electrical activity. It maps the data on a graph for the doctor to review.</p> <p>Outlook</p> <p>The symptoms and severity of heart block depend on which type you have. First-degree heart block may not cause any severe symptoms.</p> <p>Second-degree heart block may result in the heart skipping a beat or beats. This type of heart block also can make you feel dizzy or faint.</p> <p>Third-degree heart block limits the heart's ability to pump blood to the rest of the body. This type of heart block may cause fatigue (tiredness), dizziness, and fainting. Third-degree heart block requires prompt treatment because it can be life-threatening.</p> <p>A medical device called a pacemaker is used to treat third-degree heart block and some cases of second-degree heart block. This device uses electrical pulses to prompt the heart to beat at a normal rate. Pacemakers typically are implanted in the chest.</p> <p>All types of heart block may increase your risk for other arrhythmias, such as atrial fibrillation (A-tre-ah-fih-brith-LA-shun). Talk with your doctor to learn more about the signs and symptoms of arrhythmias.</p>	NHLBI	Heart Block
What causes Heart Block ?	<p>Heart block has many causes. Some people are born with the disorder (congenital), while others develop it during their lifetimes (acquired).</p> <p>Congenital Heart Block</p> <p>One form of congenital heart block occurs in babies whose mothers have autoimmune diseases, such as lupus. People who have these diseases make proteins called antibodies that attack and damage the body's tissues or organs. In pregnant women, antibodies can cross the placenta. (The placenta is the organ that attaches the umbilical cord to the mother's womb.) These proteins can damage the baby's heart and lead to congenital heart block.</p> <p>Congenital heart defects also may cause congenital heart block. These defects are problems with the heart's structure that are present at birth. Often, doctors don't know what causes these defects.</p> <p>Acquired Heart Block</p> <p>Many factors can cause acquired heart block. Examples include:</p> <p>Damage to the heart from a heart attack. This is the most common cause of acquired heart block.</p> <p>Coronary heart disease, also called coronary artery disease.</p> <p>Myocarditis (MI-o-kar-DI-tis), or inflammation of the heart muscle.</p> <p>Heart failure.</p> <p>Rheumatic (roo-MAT-ik) fever.</p> <p>Cardiomyopathy (KAR-de-o-mi-OP-a-the), or heart muscle diseases.</p> <p>Other diseases may increase the risk of heart block. Examples include sarcoidosis (sar-koy-DOE-sis) and the degenerative muscle disorders Lev's disease and Lenegre's disease.</p> <p>Certain types of surgery also may damage the heart's electrical system and lead to heart block.</p> <p>Exposure to toxic substances and taking certain medicinesincluding digitalis, beta blockers, and calcium channel blockersalso may cause heart block. Doctors closely watch people who are taking these medicines for signs of heart block.</p> <p>Some types of heart block have been linked to genetic mutations (changes in the genes).</p> <p>An overly active vagus nerve also can cause heart block. You have one vagus nerve on each side of your body. These nerves run from your brain stem all the way to your abdomen. Activity in the vagus nerve slows the heart's rate.</p> <p>In some cases, acquired heart block may go away if the factor causing it is treated or resolved. For example, heart block that occurs after a heart attack or surgery may go away during recovery.</p> <p>Also, if a medicine is causing heart block, the disorder may go away if the medicine is stopped or the dosage is lowered. Always talk with your doctor before you change the way you take your medicines.</p>	NHLBI	Heart Block
Who is at risk for Heart Block? ?	<p>The risk factors for congenital and acquired heart block are different.</p> <p>Congenital Heart Block</p> <p>If a pregnant woman has an autoimmune disease, such as lupus, her fetus is at risk for heart block.</p> <p>Autoimmune diseases can cause the body to make proteins called antibodies that can cross the placenta. (The placenta is the organ that attaches the umbilical cord to the mother's womb.) These antibodies may damage the baby's heart and lead to congenital heart block.</p> <p>Congenital heart defects also can cause heart block. These defects are problems with the heart's structure that are present at birth. Most of the time, doctors don't know what causes congenital heart defects.</p> <p>Heredity may play a role in certain heart defects. For example, a parent who has a congenital heart defect might be more likely than other people to have a child with the condition.</p> <p>Acquired Heart Block</p> <p>Acquired heart block can occur in people of any age. However, most types of the condition are more common in older people. This is because many of the risk factors are more common in older people.</p> <p>People who have a history of heart disease or heart attacks are at increased risk for heart block. Examples of heart disease that can lead to heart block include heart failure, coronary heart disease, and cardiomyopathy (heart muscle disease).</p> <p>Other diseases also may raise the risk of heart block, such as sarcoidosis and the degenerative muscle disorders Lev's disease and Lenegre's disease.</p> <p>Exposure to toxic substances or taking certain medicines, such as digitalis, also can raise your risk for heart block.</p> <p>Well-trained athletes and young people are at higher risk for first-degree heart block caused by an overly active vagus nerve. You have one vagus nerve on each side of your body. These nerves run from your brain stem all the way to your abdomen. Activity in the vagus nerve slows the heart's rate.</p>	NHLBI	Heart Block
What are the symptoms of Heart Block ?	<p>Signs and symptoms depend on the type of heart block you have. First-degree heart block may not cause any symptoms.</p> <p>Signs and symptoms of second- and third-degree heart block include:</p> <p>Fainting</p> <p>Dizziness or light-headedness</p> <p>Fatigue (tiredness)</p> <p>Shortness of breath</p> <p>Chest pain</p>	NHLBI	Heart Block
How to diagnose Heart Block ?	<p>These symptoms may suggest other health problems as well. If these symptoms are new or severe, call 911 or have someone drive you to the hospital emergency room. If you have milder symptoms, talk with your doctor right away.</p> <p>Heart block might be diagnosed as part of a routine doctor's visit or during an emergency situation. (Third-degree heart block often is an emergency.)</p> <p>Your doctor will diagnose heart block based on your family and medical histories, a physical exam, and test results.</p> <p>Specialists Involved</p> <p>Your primary care doctor might be involved in diagnosing heart block. However, if you have the condition, you might need to see a heart specialist. Heart specialists include:</p> <p>Cardiologists (doctors who diagnose and treat adults who have heart problems)</p> <p>Pediatric cardiologists (doctors who diagnose and treat babies and children who have heart problems)</p> <p>Electrophysiologists (cardiologists or pediatric cardiologists who specialize in the heart's electrical system)</p> <p>Family and Medical Histories</p> <p>Your doctor may ask whether:</p> <p>You have any signs or symptoms of heart block</p> <p>You have any health problems, such as heart disease</p> <p>Any of your family members have been diagnosed with heart block or other health problems</p> <p>You're taking any medicines, including herbal products and prescription and over-the-counter medicines</p> <p>You smoke or use alcohol or drugs</p> <p>Your doctor also may ask about other health habits, such as how physically active you are.</p> <p>Physical Exam</p> <p>During the physical exam, your doctor will listen to your heart. He or she will listen carefully for abnormal rhythms or heart murmurs (extra or unusual sounds heard during heartbeats).</p> <p>Your doctor also may:</p> <p>Check your pulse to find out how fast your heart is beating</p> <p>Check for swelling in your legs or feet, which could be a sign of an enlarged heart or heart failure</p> <p>Look for signs of other diseases that could be causing heart rate or rhythm problems (such as coronary heart disease)</p> <p>Diagnostic Tests and Procedures</p> <p>EKG (Electrocardiogram)</p> <p>Doctors usually use an EKG (electrocardiogram) to help diagnose heart block. This simple test detects and records the heart's electrical activity.</p> <p>An EKG shows how fast the heart is beating and its rhythm (steady or irregular). The test also records the strength and timing of electrical signals as they pass through the heart.</p> <p>The data are recorded on a graph. Different types of heart block have different patterns on the graph. (For more information, go to "Types of Heart Block.")</p> <p>A standard EKG only records the heart's activity for a few seconds. To diagnose heart rhythm problems that come and go, your doctor may have you wear a portable EKG monitor.</p> <p>The most common types of portable EKGs are Holter and event monitors. Your doctor may have you use one of these monitors to diagnose first- or second-degree heart block.</p> <p>Holter and Event Monitors</p> <p>A Holter monitor records the heart's electrical signals for a full 24- or 48-hour period. You wear one while you do your normal daily activities. This allows the monitor to record your heart for a longer time than a standard EKG.</p> <p>An event monitor is similar to a Holter monitor. You wear an event monitor while doing your normal activities. However, an event monitor only records your heart's electrical activity at certain times while you're wearing it.</p> <p>You may wear an event monitor for 1 to 2 months, or as long as it takes to get a recording of your heart during symptoms.</p> <p>Electrophysiology Study</p> <p>For some cases of heart block, doctors may do electrophysiology studies (EPS). During this test, a thin, flexible wire is passed through a vein in your groin (upper thigh) or arm to your heart. The wire records your heart's electrical activity.</p> <p>Other Tests</p> <p>To diagnose heart block, your doctor may recommend tests to rule out other types of arrhythmias (irregular heartbeats). For more information, go to "How Are Arrhythmias Diagnosed?"</p>	NHLBI	Heart Block
What are the treatments for Heart Block ?	<p>Treatment depends on the type of heart block you have. If you have first-degree heart block, you may not need treatment.</p> <p>If you have second-degree heart block, you may need a pacemaker. A pacemaker is a small device that's placed under the skin of your chest or abdomen. This device uses electrical pulses to prompt the heart to beat at a normal rate.</p> <p>If you have third-degree heart block, you will need a pacemaker. In an emergency, a temporary pacemaker might be used until you can get a long-term device. Most people who have third-degree heart block need pacemakers.</p> <p>Some people who have third-degree congenital heart block don't need pacemakers for many years. Others may need pacemakers at a young age or during infancy.</p> <p>If a pregnant woman has an autoimmune disease, such as lupus, her fetus is at risk for heart block. If heart block is detected in a fetus, the mother might be given medicine to reduce the fetus' risk of developing serious heart problems.</p> <p>Sometimes acquired heart block goes away if the factor causing it is treated or resolved. For example, heart block that occurs after a heart attack or surgery may go away during recovery.</p> <p>Also, if a medicine is causing heart block, the condition may go away if the medicine is stopped or the dosage is lowered. (Always talk with your doctor before you change the way you take your medicines.)</p>	NHLBI	Heart Block
What is (are) Sudden Cardiac Arrest ?	<p>Sudden cardiac arrest (SCA) is a condition in which the heart suddenly and unexpectedly stops beating. If this happens, blood stops flowing to the brain and other vital organs.</p> <p>SCA usually causes death if it's not treated within minutes.</p> <p>Overview</p> <p>To understand SCA, it helps to understand how the heart works. The heart has an electrical system that controls the rate and rhythm of the heartbeat. Problems with the heart's electrical system can cause irregular heartbeats called arrhythmias.</p> <p>There are many types of arrhythmias. During an arrhythmia, the heart can beat too fast, too slow, or with an irregular rhythm. Some arrhythmias can cause the heart to stop pumping blood to the bodythese arrhythmias cause SCA is not the same as a heart attack. A heart attack occurs if blood flow to part of the heart muscle is blocked. During a heart attack, the heart usually doesn't suddenly stop beating. SCA, however, may happen after or during a heart attack.</p> <p>People who have heart disease are at higher risk for SCA. However, SCA can happen in people who appear healthy and have no known heart disease or other risk factors for SCA.</p> <p>Outlook</p> <p>Most people who have SCA die from itoften within minutes. Rapid treatment of SCA with a defibrillator can be lifesaving. A defibrillator is a device that sends an electric shock to the heart to try to restore its normal rhythm.</p> <p>Automated external defibrillators (AEDs) can be used by bystanders to save the lives of people who are having SCA. These portable devices often are found in public places, such as shopping malls, golf courses, businesses,</p>	NHLBI	Sudden Cardiac Arrest

What causes Sudden Cardiac Arrest ?	<p>Ventricular fibrillation (v-fib) causes most sudden cardiac arrests (SCAs). V-fib is a type of arrhythmia.</p> <p>During v-fib, the ventricles (the heart's lower chambers) don't beat normally. Instead, they quiver very rapidly and irregularly. When this happens, the heart pumps little or no blood to the body. V-fib is fatal if not treated within minutes.</p> <p>Other problems with the heart's electrical system also can cause SCA. For example, SCA can occur if the rate of the heart's electrical signals becomes very slow and stops. SCA also can occur if the heart muscle doesn't respond properly to the heart's electrical signals.</p> <p>Certain diseases and conditions can cause the electrical problems that lead to SCA. Examples include coronary heart disease (CHD), also called coronary artery disease; severe physical stress; certain inherited disorders; and certain drugs.</p> <p>Several research studies are under way to try to find the exact causes of SCA and how to prevent them.</p> <p>Coronary Heart Disease</p> <p>CHD is a disease in which a waxy substance called plaque (plak) builds up in the coronary arteries. These arteries supply oxygen-rich blood to your heart muscle.</p> <p>Plaque narrows the arteries and reduces blood flow to your heart muscle. Eventually, an area of plaque can rupture (break open). This may cause a blood clot to form on the plaque's surface.</p> <p>A blood clot can partly or fully block the flow of oxygen-rich blood to the portion of heart muscle fed by the artery. This causes a heart attack.</p> <p>During a heart attack, some heart muscle cells die and are replaced with scar tissue. The scar tissue damages the heart's electrical system. As a result, electrical signals may spread abnormally throughout the heart. These changes can lead to SCA.</p> <p>CHD seems to cause most cases of SCA in adults. Many of these adults, however, have no signs or symptoms of CHD before having SCA.</p> <p>Physical Stress</p> <p>Certain types of physical stress can cause your heart's electrical system to fail. Examples include:</p> <ul style="list-style-type: none">Intense physical activity. The hormone adrenaline is released during intense physical activity. This hormone can trigger SCA in people who have heart problems.Very low blood levels of potassium or magnesium. These minerals play an important role in your heart's electrical signaling.Major blood loss.Severe lack of oxygen. <p>Inherited Disorders</p> <p>A tendency to have arrhythmias runs in some families. This tendency is inherited, which means it's passed from parents to children through the genes. Members of these families may be at higher risk for SCA.</p> <p>An example of an inherited disorder that makes you more likely to have arrhythmias is long QT syndrome (LQTS). LQTS is a disorder of the heart's electrical activity. Problems with tiny pores on the surface of heart muscle cells can lead to LQTS.</p> <p>People who inherit structural heart problems also may be at higher risk for SCA. These types of problems often are the cause of SCA in children.</p> <p>Structural Changes in the Heart</p> <p>Changes in the heart's normal size or structure may affect its electrical system. Examples of such changes include an enlarged heart due to high blood pressure or advanced heart disease. Heart infections also may cause structural changes.</p>	NHLBI	Sudden Cardiac Arrest
Who is at risk for Sudden Cardiac Arrest? ?	<p>The risk of sudden cardiac arrest (SCA) increases:</p> <ul style="list-style-type: none">With ageIf you are a man. Men are more likely than women to have SCA.Some studies show that blacks/particularly those with underlying conditions such as diabetes, high blood pressure, heart failure, and chronic kidney disease or certain cardiac findings on tests such as an electrocardiogram have a higher risk for SCA. <p>Major Risk Factor</p> <p>The major risk factor for SCA is coronary heart disease. Most people who have SCA have some degree of coronary heart disease; however, many people may not know that they have coronary heart disease until SCA occurs.</p> <p>Many people who have SCA also have silent, or undiagnosed, heart attacks before sudden cardiac arrest happens. These people have no clear signs of heart attack, and they don't even realize that they've had one. Read more about heart attacks.</p> <p>Other Risk Factors</p> <p>Other risk factors for SCA include:</p> <ul style="list-style-type: none">A personal history of arrhythmiasA personal or family history of SCA or inherited disorders that make you prone to arrhythmiasDrug or alcohol abuseHeart attackHeart failure	NHLBI	Sudden Cardiac Arrest
What are the symptoms of Sudden Cardiac Arrest ?	<p>Usually, the first sign of sudden cardiac arrest (SCA) is loss of consciousness (fainting). At the same time, no heartbeat (or pulse) can be felt.</p> <p>Some people may have a racing heartbeat or feel dizzy or light-headed just before they faint. Within an hour before SCA, some people have chest pain, shortness of breath, nausea (feeling sick to the stomach), or vomiting.</p> <p>Sudden cardiac arrest (SCA) happens without warning and requires emergency treatment. Doctors rarely diagnose SCA with medical tests as it's happening. Instead, SCA often is diagnosed after it happens. Doctors do this by looking at the person's medical history and symptoms.</p> <p>Specialists Involved</p> <p>If you're at high risk for SCA, your doctor may refer you to a cardiologist. This is a doctor who specializes in diagnosing and treating heart diseases and conditions. Your cardiologist will work with you to decide whether you need any tests or treatments.</p> <p>Some cardiologists specialize in problems with the heart's electrical system. These specialists are called cardiac electrophysiologists.</p> <p>Diagnostic Tests and Procedures</p> <p>Doctors use several tests to help detect the factors that put people at risk for SCA.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple, painless test that detects and records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical impulses as they travel through the heart.</p> <p>An EKG can show evidence of heart damage due to coronary heart disease (CHD). The test also can show signs of a previous or current heart attack.</p> <p>Echocardiography</p> <p>Echocardiography, or echo, is a painless test that uses sound waves to create pictures of your heart. The test shows the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>Echo also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>There are several types of echo, including stress echo. This test is done both before and after a cardiac stress test. During this test, you exercise (or are given medicine if you're unable to exercise) to make your heart work harder.</p> <p>Stress echo shows whether you have decreased blood flow to your heart (a sign of CHD).</p> <p>MUGA Test or Cardiac MRI</p> <p>A MUGA (multiple gated acquisition) test shows how well your heart is pumping blood. For this test, a small amount of radioactive substance is injected into a vein and travels to your heart.</p> <p>The substance releases energy, which special cameras outside of your body can detect. The cameras use the energy to create pictures of many parts of your heart.</p> <p>Cardiac MRI (magnetic resonance imaging) is a safe procedure that uses radio waves and magnets to create detailed pictures of your heart. The test creates still and moving pictures of your heart and major blood vessels.</p> <p>Doctors use cardiac MRI to get pictures of the beating heart and to look at the structure and function of the heart.</p> <p>Cardiac Catheterization</p> <p>Cardiac catheterization is a procedure used to diagnose and treat certain heart conditions. A long, thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck and threaded to your heart.</p> <p>Sometimes dye is put into the catheter. The dye will flow through your bloodstream to your heart. The dye makes your coronary (heart) arteries visible on x-ray pictures. The dye can show whether plaque has narrowed or blocked your arteries.</p> <p>Electrophysiology Study</p> <p>For an electrophysiology study, doctors use cardiac catheterization to record how your heart's electrical system responds to certain medicines and electrical stimulation. This helps your doctor find where the heart's electrical system has a problem.</p> <p>Blood Tests</p> <p>Your doctor may recommend blood tests to check the levels of potassium, magnesium, and other chemicals in your blood. These chemicals play an important role in your heart's electrical signaling.</p>	NHLBI	Sudden Cardiac Arrest
How to diagnose Sudden Cardiac Arrest ?	<p>Emergency Treatment</p> <p>Sudden cardiac arrest (SCA) is an emergency. A person having SCA needs to be treated with a defibrillator right away. This device sends an electric shock to the heart. The electric shock can restore a normal rhythm to a heart that has stopped beating.</p> <p>To work well, defibrillation must be done within minutes of SCA. With every minute that passes, the chances of surviving SCA drop rapidly.</p> <p>Police, emergency medical technicians, and other first responders usually are trained and equipped to use a defibrillator. Call 911 right away if someone has signs or symptoms of SCA. The sooner you call for help, the sooner treatment can begin.</p> <p>Automated External Defibrillators</p> <p>Automated external defibrillators (AEDs) are special defibrillators that untrained bystanders can use. These portable devices often are found in public places, such as shopping malls, golf courses, businesses, airports, airplanes, and schools.</p> <p>AEDs are programmed to give an electric shock if they detect a dangerous arrhythmia, such as ventricular fibrillation. This prevents giving a shock to someone who may have fainted but isn't having SCA.</p> <p>You should give cardiopulmonary resuscitation (CPR) to a person having SCA until defibrillation can be done.</p> <p>People who are at risk for SCA may want to consider having an AED at home. A 2008 study by the National Heart, Lung, and Blood Institute and the National Institutes of Health found that AEDs in the home are safe and effective.</p> <p>Some people feel that placing these devices in homes will save many lives because many SCAs occur at home. Others note that no evidence supports the idea that home-use AEDs save more lives. These people fear that people might be scared away from using the device.</p> <p>When considering a home-use AED, talk with your doctor. He or she can help you decide whether having an AED in your home will benefit you.</p> <p>Treatment in a Hospital</p> <p>If you survive SCA, you'll likely be admitted to a hospital for ongoing care and treatment. In the hospital, your medical team will closely watch your heart. They may give you medicines to try to reduce the risk of another SCA.</p> <p>While in the hospital, your medical team will try to find out what caused your SCA. If you're diagnosed with coronary heart disease, you may have percutaneous coronary intervention, also known as coronary angioplasty, or coronary artery bypass graft surgery.</p> <p>Often, people who have SCA get a device called an implantable cardioverter defibrillator (ICD). This small device is surgically placed under the skin in your chest or abdomen. An ICD uses electric pulses or shocks to help correct abnormal heart rhythms.</p>	NHLBI	Sudden Cardiac Arrest
What are the treatments for Sudden Cardiac Arrest ?	<p>Emergency Treatment</p> <p>Sudden cardiac arrest (SCA) is an emergency. A person having SCA needs to be treated with a defibrillator right away. This device sends an electric shock to the heart. The electric shock can restore a normal rhythm to a heart that has stopped beating.</p> <p>To work well, defibrillation must be done within minutes of SCA. With every minute that passes, the chances of surviving SCA drop rapidly.</p> <p>Police, emergency medical technicians, and other first responders usually are trained and equipped to use a defibrillator. Call 911 right away if someone has signs or symptoms of SCA. The sooner you call for help, the sooner treatment can begin.</p> <p>Automated External Defibrillators</p> <p>Automated external defibrillators (AEDs) are special defibrillators that untrained bystanders can use. These portable devices often are found in public places, such as shopping malls, golf courses, businesses, airports, airplanes, and schools.</p> <p>AEDs are programmed to give an electric shock if they detect a dangerous arrhythmia, such as ventricular fibrillation. This prevents giving a shock to someone who may have fainted but isn't having SCA.</p> <p>You should give cardiopulmonary resuscitation (CPR) to a person having SCA until defibrillation can be done.</p> <p>People who are at risk for SCA may want to consider having an AED at home. A 2008 study by the National Heart, Lung, and Blood Institute and the National Institutes of Health found that AEDs in the home are safe and effective.</p> <p>Some people feel that placing these devices in homes will save many lives because many SCAs occur at home. Others note that no evidence supports the idea that home-use AEDs save more lives. These people fear that people might be scared away from using the device.</p> <p>When considering a home-use AED, talk with your doctor. He or she can help you decide whether having an AED in your home will benefit you.</p> <p>Treatment in a Hospital</p> <p>If you survive SCA, you'll likely be admitted to a hospital for ongoing care and treatment. In the hospital, your medical team will closely watch your heart. They may give you medicines to try to reduce the risk of another SCA.</p> <p>While in the hospital, your medical team will try to find out what caused your SCA. If you're diagnosed with coronary heart disease, you may have percutaneous coronary intervention, also known as coronary angioplasty, or coronary artery bypass graft surgery.</p> <p>Often, people who have SCA get a device called an implantable cardioverter defibrillator (ICD). This small device is surgically placed under the skin in your chest or abdomen. An ICD uses electric pulses or shocks to help correct abnormal heart rhythms.</p>	NHLBI	Sudden Cardiac Arrest

How to prevent Sudden Cardiac Arrest ?	<p>Ways to prevent death due to sudden cardiac arrest (SCA) differ depending on whether:</p> <p>You've already had SCA</p> <p>You've never had SCA but are at high risk for the condition</p> <p>You've never had SCA and have no known risk factors for the condition</p> <p>For People Who Have Survived Sudden Cardiac Arrest</p> <p>If you've already had SCA, you're at high risk of having it again. Research shows that an implantable cardioverter defibrillator (ICD) reduces the chances of dying from a second SCA. An ICD is surgically placed under the skin.</p> <p>If the ICD detects a dangerous heart rhythm, it gives an electric shock to restore the heart's normal rhythm. Your doctor may give you medicine to limit irregular heartbeats that can trigger the ICD.</p> <p>Implantable Cardioverter Defibrillator</p> <p>An ICD isn't the same as a pacemaker. The devices are similar, but they have some differences. Pacemakers give off low-energy electrical pulses. They're often used to treat less dangerous heart rhythms, such as those that cause fainting.</p> <p>For People at High Risk for a First Sudden Cardiac Arrest</p> <p>If you have severe coronary heart disease (CHD), you're at increased risk for SCA. This is especially true if you've recently had a heart attack.</p> <p>Your doctor may prescribe a type of medicine called a beta blocker to help lower your risk for SCA. Your doctor also may discuss beginning statin treatment if you have an elevated risk for developing heart disease or having heart disease.</p> <p>Diabetes</p> <p>Heart disease or had a prior stroke</p> <p>High LDL cholesterol levels</p> <p>Your doctor also may prescribe other medications to:</p> <p>Decrease your chance of having a heart attack or dying suddenly.</p> <p>Lower blood pressure.</p> <p>Prevent blood clots, which can lead to heart attack or stroke.</p> <p>Prevent or delay the need for a procedure or surgery, such as angioplasty or coronary artery bypass grafting.</p> <p>Reduce your heart's workload and relieve coronary heart disease symptoms.</p> <p>Take all medicines regularly, as your doctor prescribes. Don't change the amount of your medicine or skip a dose unless your doctor tells you to. You should still follow a heart-healthy lifestyle, even if you take medicines to treat heart disease.</p> <p>Other treatments for coronary heart disease, such as percutaneous coronary intervention, also known as coronary angioplasty, or coronary artery bypass grafting, also may lower your risk for SCA. Your doctor also may recommend medicines to help lower your risk for SCA.</p> <p>For People Who Have No Known Risk Factors for Sudden Cardiac Arrest</p> <p>CHD seems to be the cause of most SCAs in adults. CHD also is a major risk factor for angina (chest pain or discomfort) and heart attack, and it contributes to other heart problems.</p> <p>Following a healthy lifestyle can help you lower your risk for CHD, SCA, and other heart problems. A heart-healthy lifestyle includes:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Heart-Healthy Eating</p> <p>Heart-healthy eating is an important part of a heart-healthy lifestyle. Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as skim milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fat found mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids) found in foods made with hydrogenated oils and fats, such as stick margarine; baked goods, such as cookies, cakes, and pies; crackers; frostings; and coffee creamers. Some trans fats also occur naturally in some animal products.</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6 percent of your daily calories should come from saturated fat. Food labels list the amount of saturated fat in a food.</p> <p>If you eat:</p> <p>Try to eat no more than:</p> <p>1,200 calories a day</p> <p>8 grams of saturated fat a day</p> <p>1,500 calories a day</p> <p>10 grams of saturated fat a day</p> <p>1,800 calories a day</p> <p>12 grams of saturated fat a day</p> <p>2,000 calories a day</p> <p>13 grams of saturated fat a day</p> <p>2,500 calories a day</p> <p>17 grams of saturated fat a day</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels. Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>You should try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking.</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are healthy for your heart.</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who don't have high blood pressure. Read more about DASH.</p> <p>Limiting Alcohol</p> <p>Try to limit alcohol intake. Too much alcohol can raise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain.</p> <p>Men should have no more than two drinks containing alcohol a day. Women should have no more than one drink containing alcohol a day. One drink is:</p> <p>12 ounces of beer</p> <p>5 ounces of wine</p> <p>1 ounce of liquor</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for sudden cardiac arrest. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if you're a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood Institute's BMI calculator.</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range</p> <p>Between 25.0 and 29.9 is considered overweight</p> <p>Of 30.0 or higher is considered obese</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, you're at a higher risk for heart disease and type 2 diabetes. This risk may be higher with a larger waist circumference.</p> <p>If you're overweight or obese, try to lose weight. A loss of just 5 percent to 10 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight loss can lead to even greater health benefits.</p> <p>Managing Stress</p> <p>Managing and coping with stress. Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health. Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Regular physical activity can lower your risk for coronary heart disease, sudden cardiac arrest, and other health problems. Everyone should try to participate in moderate-intensity aerobic exercise at least 2 hours and 30 minutes a week.</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services, 2008 Physical Activity Guidelines for Americans</p> <p>Quitting Smoking</p> <p>People who smoke are more likely to have a heart attack than are people who don't smoke. The risk of having a heart attack increases with the number of cigarettes smoked each day. Smoking also raises your risk for stroke.</p> <p>Quitting smoking can greatly reduce your risk for heart and lung diseases. Ask your doctor about programs and products that can help you quit. Also, try to avoid secondhand smoke. If you have trouble quitting smoking on your own, ask your doctor for help.</p>	NHLBI	Sudden Cardiac Arrest
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What is (are) Pericarditis ?	<p>Pericarditis (PER-i-kar-DI-tis) is a condition in which the membrane, or sac, around your heart is inflamed. This sac is called the pericardium (per-i-KAR-de-um).</p> <p>The pericardium holds the heart in place and helps it work properly. The sac is made of two thin layers of tissue that enclose your heart. Between the two layers is a small amount of fluid. This fluid keeps the layers from rubbing together.</p> <p>Pericardium</p> <p>In pericarditis, the layers of tissue become inflamed and can rub against the heart. This causes chest pain, a common symptom of pericarditis.</p> <p>The chest pain from pericarditis may feel like pain from a heart attack. More often, the pain may be sharp and get worse when you inhale, and improve when you are sitting up and leaning forward. If you have chest pain, you should call 911 right away, as you may be having a heart attack.</p> <p>Overview</p> <p>In many cases, the cause of pericarditis is unknown. Viral infections are likely a common cause of pericarditis, although the virus may never be found. Bacterial, fungal, and other infections also can cause pericarditis.</p> <p>Other possible causes include heart attack or heart surgery, other medical conditions, injuries, and certain medicines.</p> <p>Pericarditis can be acute or chronic. "Acute" means that it occurs suddenly and usually doesn't last long. "Chronic" means that it develops over time and may take longer to treat.</p> <p>Both acute and chronic pericarditis can disrupt your heart's normal rhythm or function and possibly (although rarely) lead to death. However, most cases of pericarditis are mild; they clear up on their own or with rest and simple treatments.</p> <p>Other times, more intense treatments are needed to prevent complications. Treatments may include medicines and, less often, procedures or surgery.</p> <p>Outlook</p> <p>It may take from a few days to weeks or even months to recover from pericarditis. With proper and prompt treatment, such as rest and ongoing care, most people fully recover from pericarditis. Proper treatment also can help prevent it from coming back.</p>	NHLBI	Pericarditis
What causes Pericarditis ?	<p>In many cases, the cause of pericarditis (both acute and chronic) is unknown.</p> <p>Viral infections are likely a common cause of pericarditis, although the virus may never be found. Pericarditis often occurs after a respiratory infection. Bacterial, fungal, and other infections also can cause pericarditis.</p> <p>Most cases of chronic, or recurring, pericarditis are thought to be the result of autoimmune disorders. Examples of such disorders include lupus, scleroderma, and rheumatoid arthritis.</p> <p>With autoimmune disorders, the body's immune system makes antibodies (proteins) that mistakenly attack the body's tissues or cells.</p> <p>Other possible causes of pericarditis are:</p> <ul style="list-style-type: none">Heart attack and heart surgeryKidney failure, HIV/AIDS, cancer, tuberculosis, and other health problemsInjuries from accidents or radiation therapy <p>Certain medicines, like phenytoin (an antiseizure medicine), warfarin and heparin (blood-thinning medicines), and procainamide (a medicine to treat irregular heartbeats)</p>	NHLBI	Pericarditis
Who is at risk for Pericarditis? ?	<p>Pericarditis occurs in people of all ages. However, men aged 20 to 50 are more likely to develop it than others.</p> <p>People who are treated for acute pericarditis may get it again. This may happen in 15 to 30 percent of people who have the condition. A small number of these people go on to develop chronic pericarditis.</p>	NHLBI	Pericarditis
What are the symptoms of Pericarditis ?	<p>The most common sign of acute pericarditis is sharp, stabbing chest pain. The pain usually comes on quickly. It often is felt in the middle or left side of the chest or over the front of the chest. You also may feel pain in one or both arms or legs.</p> <p>The pain tends to ease when you sit up and lean forward. Lying down and deep breathing worsens it. For some people, the pain feels like a dull ache or pressure in the chest.</p> <p>The chest pain also may feel like pain from a heart attack. If you have chest pain, you should call 911 right away, as you may be having a heart attack.</p> <p>Some people with acute pericarditis develop a fever. Other symptoms are weakness, palpitations, trouble breathing, and coughing. (Palpitations are feelings that your heart is skipping a beat, fluttering, or beating too hard or too fast.)</p> <p>The most common symptom of chronic pericarditis is chest pain. Chronic pericarditis also often causes tiredness, coughing, and shortness of breath. Severe cases of chronic pericarditis can lead to swelling in the stomach and legs.</p> <p>Complications of Pericarditis</p> <p>Two serious complications of pericarditis are cardiac tamponade (tam-po-NAD) and chronic constrictive pericarditis.</p> <p>Cardiac tamponade occurs if too much fluid collects in the pericardium (the sac around the heart). The extra fluid puts pressure on the heart. This prevents the heart from properly filling with blood. As a result, less blood leaves the heart to pump to the rest of the body.</p> <p>Chronic constrictive pericarditis is a rare disease that develops over time. It leads to scar-like tissue forming throughout the pericardium. The sac becomes stiff and can't move properly. In time, the scarred tissue compresses the heart.</p>	NHLBI	Pericarditis
How to diagnose Pericarditis ?	<p>Your doctor will diagnose pericarditis based on your medical history, a physical exam, and the results from tests.</p> <p>Specialists Involved</p> <p>Primary care doctors such as a family doctor, internist, or pediatrician often diagnose and treat pericarditis. Other types of doctors also may be involved, such as a cardiologist, pediatric cardiologist, and an infectious disease specialist.</p> <p>A cardiologist treats adults who have heart problems. A pediatric cardiologist treats children who have heart problems. An infectious disease specialist treats people who have infections.</p> <p>Medical History</p> <p>Your doctor may ask whether you:</p> <ul style="list-style-type: none">Have had a recent respiratory infection or flu-like illnessHave had a recent heart attack or injury to your chestHave any other medical conditions <p>Your doctor also may ask about your symptoms. If you have chest pain, he or she will ask you to describe how it feels, where it's located, and whether it's worse when you lie down, breathe, or cough.</p> <p>Physical Exam</p> <p>When the pericardium (the sac around your heart) is inflamed, the amount of fluid between its two layers of tissue increases. As part of the exam, your doctor will look for signs of excess fluid in your chest.</p> <p>A common sign is the pericardial rub. This is the sound of the pericardium rubbing against the outer layer of your heart. Your doctor will place a stethoscope on your chest to listen for this sound.</p> <p>Your doctor may hear other chest sounds that are signs of fluid in the pericardium (pericardial effusion) or the lungs (pleural effusion). These are more severe problems related to pericarditis.</p> <p>Diagnostic Tests</p> <p>Your doctor may recommend one or more tests to diagnose your condition and show how severe it is. The most common tests are:</p> <ul style="list-style-type: none">EKG (electrocardiogram). This simple test detects and records your heart's electrical activity. Certain EKG results suggest pericarditis.Chest x ray. A chest x ray creates pictures of the structures inside your chest, such as your heart, lungs, and blood vessels. The pictures can show whether you have an enlarged heart. This is a sign of excess fluid in your pericardium.Echocardiography. This painless test uses sound waves to create pictures of your heart. The pictures show the size and shape of your heart and how well your heart is working. This test can show whether fluid has built up in the pericardium.Cardiac CT (computed tomography (to-MOG-rah-fee)). This is a type of x ray that takes a clear, detailed picture of your heart and pericardium. A cardiac CT helps rule out other causes of chest pain.Cardiac MRI (magnetic resonance imaging). This test uses powerful magnets and radio waves to create detailed pictures of your organs and tissues. A cardiac MRI can show changes in the pericardium. <p>Your doctor also may recommend blood tests. These tests can help your doctor find out whether you've had a heart attack, the cause of your pericarditis, and how inflamed your pericardium is.</p>	NHLBI	Pericarditis
What are the treatments for Pericarditis ?	<p>Most cases of pericarditis are mild; they clear up on their own or with rest and simple treatment. Other times, more intense treatment is needed to prevent complications. Treatment may include medicines and, less often, procedures or surgery.</p> <p>The goals of treatment include:</p> <ul style="list-style-type: none">Reducing pain and inflammationTreating the underlying cause, if it's knownChecking for complications <p>Specific Types of Treatment</p> <p>As a first step in your treatment, your doctor may advise you to rest until you feel better and have no fever. He or she may tell you to take over-the-counter, anti-inflammatory medicines to reduce pain and inflammation. Exam</p> <p>You may need stronger medicine if your pain is severe. If your pain continues to be severe, your doctor may prescribe a medicine called colchicine and, possibly, prednisone (a steroid medicine).</p> <p>If an infection is causing your pericarditis, your doctor will prescribe an antibiotic or other medicine to treat the infection.</p> <p>You may need to stay in the hospital during treatment for pericarditis so your doctor can check you for complications.</p> <p>The symptoms of acute pericarditis can last from a few days to 3 weeks. Chronic pericarditis may last several months.</p> <p>Other Types of Treatment</p> <p>You may need treatment for complications of pericarditis. Two serious complications are cardiac tamponade and chronic constrictive pericarditis.</p> <p>Cardiac tamponade is treated with a procedure called pericardiocentesis (per-i-KAR-de-o-sen-TE-sis). A needle or tube (called a catheter) is inserted into the chest wall to remove excess fluid in the pericardium. This procedure</p> <p>The only cure for chronic constrictive pericarditis is surgery to remove the pericardium. This is known as a pericardiectomy (PER-i-kar-de-EK-to-me).</p> <p>The treatments for these complications require hospital stays.</p>	NHLBI	Pericarditis
How to prevent Pericarditis ?	<p>You usually can't prevent acute pericarditis. You can take steps to reduce your chance of having another acute episode, having complications, or getting chronic pericarditis.</p> <p>These steps include getting prompt treatment, following your treatment plan, and having ongoing medical care (as your doctor advises).</p>	NHLBI	Pericarditis
What is (are) Atrial Fibrillation ?	<p>Atrial fibrillation (A-tre-ah-fri-bri-LA-shun), or AF, is the most common type of arrhythmia (ah-RITH-me-ah). An arrhythmia is a problem with the rate or rhythm of the heartbeat. During an arrhythmia, the heart can beat too fast, too slow, or irregularly.</p> <p>AF occurs if rapid, disorganized electrical signals cause the heart's two upper chambers called the atria (AY-tree-uh-to fibrillate. The term "fibrillate" means to contract very fast and irregularly.</p> <p>In AF, blood pools in the atria. It isn't pumped completely into the heart's two lower chambers, called the ventricles (VEN-trih-kulz). As a result, the heart's upper and lower chambers don't work together as they should.</p> <p>People who have AF may not feel symptoms. However, even when AF isn't noticed, it can increase the risk of stroke. In some people, AF can cause chest pain or heart failure, especially if the heart rhythm is very rapid.</p> <p>AF may happen rarely or every now and then, or it may become an ongoing or long-term heart problem that lasts for years.</p> <p>Understanding the Heart's Electrical System</p> <p>To understand AF, it helps to understand the heart's internal electrical system. The heart's electrical system controls the rate and rhythm of the heartbeat.</p> <p>With each heartbeat, an electrical signal spreads from the top of the heart to the bottom. As the signal travels, it causes the heart to contract and pump blood.</p> <p>Each electrical signal begins in a group of cells called the sinus node or sinoatrial (SA) node. The SA node is located in the right atrium. In a healthy adult heart at rest, the SA node sends an electrical signal to begin a new heartbeat every 60 to 100 beats a minute.</p> <p>From the SA node, the electrical signal travels through the right and left atria. It causes the atria to contract and pump blood into the ventricles.</p> <p>The electrical signal then moves down to a group of cells called the atrioventricular (AV) node, located between the atria and the ventricles. Here, the signal slows down slightly, allowing the ventricles time to finish filling with blood before the next signal arrives.</p> <p>The electrical signal then leaves the AV node and travels to the ventricles. It causes the ventricles to contract and pump blood to the lungs and the rest of the body. The ventricles then relax, and the heartbeat process starts over.</p> <p>For more information about the heart's electrical system and detailed animations, go to the Diseases and Conditions Index How the Heart Works article.</p> <p>Understanding the Electrical Problem in Atrial Fibrillation</p> <p>In AF, the heart's electrical signals don't begin in the SA node. Instead, they begin in another part of the atria or in the nearby pulmonary veins. The signals don't travel normally. They may spread throughout the atria in a rapid, disorganized way.</p> <p>The faulty signals flood the AV node with electrical impulses. As a result, the ventricles also begin to beat very fast. However, the AV node can't send the signals to the ventricles as fast as they arrive. So, even though the ventricles are beating fast, they aren't getting enough blood to pump to the rest of the body.</p> <p>Thus, the atria and ventricles no longer beat in a coordinated way. This creates a fast and irregular heart rhythm. In AF, the ventricles may beat 100 to 175 times a minute, in contrast to the normal rate of 60 to 100 beats a minute.</p> <p>If this happens, blood isn't pumped into the ventricles as well as it should be. Also, the amount of blood pumped out of the ventricles to the body is based on the random atrial beats.</p> <p>The body may get rapid, small amounts of blood and occasional larger amounts of blood. The amount will depend on how much blood has flowed from the atria to the ventricles with each beat.</p> <p>Most of the symptoms of AF are related to how fast the heart is beating. If medicines or age slow the heart rate, the symptoms are minimized.</p> <p>AF may be brief, with symptoms that come and go and end on their own. Or, the condition may be ongoing and require treatment. Sometimes AF is permanent, and medicines or other treatments can't restore a normal heart rhythm.</p> <p>The animation below shows atrial fibrillation. Click the "start" button to play the animation. Written and spoken explanations are provided with each frame. Use the buttons in the lower right corner to pause, restart, or replay the animation.</p> <p>The animation shows how the heart's electrical signal can begin somewhere other than the sinoatrial node. This causes the atria to beat very fast and irregularly.</p> <p>Outlook</p> <p>People who have AF can live normal, active lives. For some people, treatment can restore normal heart rhythms.</p> <p>For people who have permanent AF, treatment can help control symptoms and prevent complications. Treatment may include medicines, medical procedures, and lifestyle changes.</p>	NHLBI	Atrial Fibrillation
What causes Atrial Fibrillation ?	<p>Atrial fibrillation (AF) occurs if the heart's electrical signals don't travel through the heart in a normal way. Instead, they become very rapid and disorganized.</p> <p>Damage to the heart's electrical system causes AF. The damage most often is the result of other conditions that affect the health of the heart, such as high blood pressure and coronary heart disease.</p> <p>The risk of AF increases as you age. Inflammation also is thought to play a role in causing AF.</p> <p>Sometimes, the cause of AF is unknown.</p>	NHLBI	Atrial Fibrillation

Who is at risk for Atrial Fibrillation? ?	<p>Atrial fibrillation (AF) affects millions of people, and the number is rising. Men are more likely than women to have the condition. In the United States, AF is more common among Whites than African Americans or Hispanic Am</p> <p>The risk of AF increases as you age. This is mostly because your risk for heart disease and other conditions that can cause AF also increases as you age. However, about half of the people who have AF are younger than 75.</p> <p>AF is uncommon in children.</p> <p>Major Risk Factors</p> <p>AF is more common in people who have:</p> <p>High blood pressure</p> <p>Coronary heart disease (CHD)</p> <p>Heart failure</p> <p>Rheumatic (ru-MAT-ik) heart disease</p> <p>Structural heart defects, such as mitral valve prolapse</p> <p>Pericarditis (PER-i-kar-DI-tis; a condition in which the membrane, or sac, around your heart is inflamed)</p> <p>Congenital heart defects</p> <p>Sick sinus syndrome (a condition in which the heart's electrical signals don't fire properly and the heart rate slows down; sometimes the heart will switch back and forth between a slow rate and a fast rate)</p> <p>AF also is more common in people who are having heart attacks or who have just had surgery.</p> <p>Other Risk Factors</p> <p>Other conditions that raise your risk for AF include hyperthyroidism (too much thyroid hormone), obesity, diabetes, and lung disease.</p> <p>Certain factors also can raise your risk for AF. For example, drinking large amounts of alcohol, especially binge drinking, raises your risk. Even modest amounts of alcohol can trigger AF in some people. Caffeine or psycholog</p> <p>Some data suggest that people who have sleep apnea are at greater risk for AF. Sleep apnea is a common disorder that causes one or more pauses in breathing or shallow breaths while you sleep.</p> <p>Metabolic syndrome also raises your risk for AF. Metabolic syndrome is the name for a group of risk factors that raises your risk for CHD and other health problems, such as diabetes and stroke.</p> <p>Research suggests that people who receive high-dose steroid therapy are at increased risk for AF. This therapy is used for asthma and some inflammatory conditions. It may act as a trigger in people who have other AF risk f</p> <p>Genetic factors also may play a role in causing AF. However, their role isn't fully known.</p>	NHLBI	Atrial Fibrillation
What are the symptoms of Atrial Fibrillation ?	<p>Atrial fibrillation (AF) usually causes the heart's lower chambers, the ventricles, to contract faster than normal.</p> <p>When this happens, the ventricles can't completely fill with blood. Thus, they may not be able to pump enough blood to the lungs and body. This can lead to signs and symptoms, such as:</p> <p>Palpitations (feelings that your heart is skipping a beat, fluttering, or beating too hard or fast)</p> <p>Shortness of breath</p> <p>Weakness or problems exercising</p> <p>Chest pain</p> <p>Dizziness or fainting</p> <p>Fatigue (tiredness)</p> <p>Confusion</p> <p>Atrial Fibrillation Complications</p> <p>AF has two major complicationstroke and heart failure.</p> <p>Stroke</p> <p>During AF, the heart's upper chambers, the atria, don't pump all of their blood to the ventricles. Some blood pools in the atria. When this happens, a blood clot (also called a thrombus) can form.</p> <p>If the clot breaks off and travels to the brain, it can cause a stroke. (A clot that forms in one part of the body and travels in the bloodstream to another part of the body is called an embolus.)</p> <p>Blood-thinning medicines that reduce the risk of stroke are an important part of treatment for people who have AF.</p> <p>Atrial Fibrillation and Stroke</p> <p>Heart Failure</p> <p>Heart failure occurs if the heart can't pump enough blood to meet the body's needs. AF can lead to heart failure because the ventricles are beating very fast and can't completely fill with blood. Thus, they may not be able to</p> <p>Fatigue and shortness of breath are common symptoms of heart failure. A buildup of fluid in the lungs causes these symptoms. Fluid also can build up in the feet, ankles, and legs, causing weight gain.</p> <p>Lifestyle changes, medicines, and procedures or surgery (rarely, a mechanical heart pump or heart transplant) are the main treatments for heart failure.</p>	NHLBI	Atrial Fibrillation
How to diagnose Atrial Fibrillation ?	<p>Atrial fibrillation (AF) is diagnosed based on your medical and family histories, a physical exam, and the results from tests and procedures.</p> <p>Sometimes AF doesn't cause signs or symptoms. Thus, it may be found during a physical exam or EKG (electrocardiogram) test done for another purpose.</p> <p>If you have AF, your doctor will want to find out what is causing it. This will help him or her plan the best way to treat the condition.</p> <p>Specialists Involved</p> <p>Primary care doctors often are involved in the diagnosis and treatment of AF. These doctors include family practitioners and internists.</p> <p>Doctors who specialize in the diagnosis and treatment of heart disease also may be involved, such as:</p> <p>Cardiologists. These are doctors who diagnose and treat heart diseases and conditions.</p> <p>Electrophysiologists. These are cardiologists who specialize in arrhythmias.</p> <p>Medical and Family Histories</p> <p>Your doctor will likely ask questions about you:</p> <p>Signs and symptoms. What symptoms are you having? Have you had palpitations? Are you dizzy or short of breath? Are your feet or ankles swollen (a possible sign of heart failure)? Do you have any chest pain?</p> <p>Medical history. Do you have other health problems, such as a history of heart disease, high blood pressure, lung disease, diabetes, or thyroid problems?</p> <p>Family's medical history. Does anyone in your family have a history of AF? Has anyone in your family ever had heart disease or high blood pressure? Has anyone had thyroid problems? Does your family have a history of othe</p> <p>Health habits. Do you smoke or use alcohol or caffeine?</p> <p>Physical Exam</p> <p>Your doctor will do a complete cardiac exam. He or she will listen to the rate and rhythm of your heartbeat and take your pulse and blood pressure reading. Your doctor will likely check for any signs of heart muscle or heart v</p> <p>Your doctor also will check for swelling in your legs or feet and look for an enlarged thyroid gland or other signs of hyperthyroidism (too much thyroid hormone).</p> <p>Diagnostic Tests and Procedures</p> <p>EKG</p> <p>An EKG is a simple, painless test that records the heart's electrical activity. It's the most useful test for diagnosing AF.</p> <p>An EKG shows how fast your heart is beating and its rhythm (steady or irregular). It also records the strength and timing of electrical signals as they pass through your heart.</p> <p>A standard EKG only records the heartbeat for a few seconds. It won't detect AF that doesn't happen during the test. To diagnose paroxysmal AF, your doctor may ask you to wear a portable EKG monitor that can record you</p> <p>The two most common types of portable EKGs are Holter and event monitors.</p> <p>Holter and Event Monitors</p> <p>A Holter monitor records the heart's electrical activity for a full 24- or 48-hour period. You wear small patches called electrodes on your chest. Wires connect these patches to a small, portable recorder. The recorder can be c</p> <p>You wear the Holter monitor while you do your normal daily activities. This allows the monitor to record your heart for a longer time than a standard EKG.</p> <p>An event monitor is similar to a Holter monitor. You wear an event monitor while doing your normal activities. However, an event monitor only records your heart's electrical activity at certain times while you're wearing it.</p> <p>For many event monitors, you push a button to start the monitor when you feel symptoms. Other event monitors start automatically when they sense abnormal heart rhythms.</p> <p>You can wear an event monitor for weeks or until symptoms occur.</p> <p>Stress Test</p> <p>Some heart problems are easier to diagnose when your heart is working hard and beating fast. During stress testing, you exercise to make your heart work hard and beat fast while heart tests are done. If you can't exercise, y</p> <p>Echocardiography</p> <p>Echocardiography (echo) uses sound waves to create a moving picture of your heart. The test shows the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>Echo also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>This test sometimes is called transthoracic (trans-thor-AS-ik) echocardiography. It's painless and noninvasive (no instruments are inserted into the body). For the test, a device called a transducer is moved back and forth ove</p> <p>The sound waves bounce off the structures of your heart, and a computer converts them into pictures on a screen.</p> <p>Transesophageal Echocardiography</p> <p>Transesophageal (trans-e-SQF-ah-ge-al) echo, or TEE, uses sound waves to take pictures of your heart through the esophagus. The esophagus is the passage leading from your mouth to your stomach.</p> <p>Your heart's upper chambers, the atria, are deep in your chest. They often can't be seen very well using transthoracic echo. Your doctor can see the atria much better using TEE.</p> <p>During this test, the transducer is attached to the end of a flexible tube. The tube is guided down your throat and into your esophagus. You'll likely be given medicine to help you relax during the procedure.</p> <p>TEE is used to detect blood clots that may be forming in the atria because of AF.</p> <p>Chest X Ray</p> <p>A chest x ray is a painless test that creates pictures of the structures in your chest, such as your heart and lungs. This test can show fluid buildup in the lungs and signs of other AF complications.</p> <p>Blood Tests</p> <p>Blood tests check the level of thyroid hormone in your body and the balance of your body's electrolytes. Electrolytes are minerals that help maintain fluid levels and acid-base balance in the body. They're essential for normal</p>	NHLBI	Atrial Fibrillation

What are the treatments for Atrial Fibrillation ?	<p>Treatment for atrial fibrillation (AF) depends on how often you have symptoms, how severe they are, and whether you already have heart disease. General treatment options include medicines, medical procedures, and lifestyle changes.</p> <p>Goals of Treatment</p> <p>The goals of treating AF include:</p> <ul style="list-style-type: none">Preventing blood clots from forming, thus lowering the risk of stroke.Controlling how many times a minute the ventricles contract. This is called rate control. Rate control is important because it allows the ventricles enough time to completely fill with blood. With this approach, the abnormal heart rhythm continues, but the heart doesn't pump blood as efficiently.Restoring a normal heart rhythm. This is called rhythm control. Rhythm control allows the atria and ventricles to work together to efficiently pump blood to the body. <p>Treating any underlying disorder that's causing or raising the risk of AF, such as hyperthyroidism (too much thyroid hormone).</p> <p>Who Needs Treatment for Atrial Fibrillation?</p> <p>People who have AF but don't have symptoms or related heart problems may not need treatment. AF may even go back to a normal heart rhythm on its own. (This also can occur in people who have AF with symptoms.)</p> <p>In some people who have AF for the first time, doctors may choose to use an electrical procedure or medicine to restore a normal heart rhythm.</p> <p>Repeat episodes of AF tend to cause changes to the heart's electrical system, leading to persistent or permanent AF. Most people who have persistent or permanent AF need treatment to control their heart rate and prevent blood clots.</p> <p>Specific Types of Treatment</p> <p>Blood Clot Prevention</p> <p>People who have AF are at increased risk for stroke. This is because blood can pool in the heart's upper chambers (the atria), causing a blood clot to form. If the clot breaks off and travels to the brain, it can cause a stroke.</p> <p>Preventing blood clots from forming is probably the most important part of treating AF. The benefits of this type of treatment have been proven in multiple studies.</p> <p>Doctors prescribe blood-thinning medicines to prevent blood clots. These medicines include warfarin (Coumadin), dabigatran, heparin, and aspirin.</p> <p>People taking blood-thinning medicines need regular blood tests to check how well the medicines are working.</p> <p>Rate Control</p> <p>Doctors can prescribe medicines to slow down the rate at which the ventricles are beating. These medicines help bring the heart rate to a normal level.</p> <p>Rate control is the recommended treatment for most patients who have AF, even though an abnormal heart rhythm continues and the heart doesn't work as well as it should. Most people feel better and can function well if they have a controlled heart rate.</p> <p>Medicines used to control the heart rate include beta blockers (for example, metoprolol and atenolol), calcium channel blockers (diltiazem and verapamil), and digitalis (digoxin). Several other medicines also are available.</p> <p>Rhythm Control</p> <p>Restoring and maintaining a normal heart rhythm is a treatment approach recommended for people who aren't doing well with rate control treatment. This treatment also may be used for people who have only recently started having AF.</p> <p>Doctors use medicines or procedures to control the heart's rhythm. Patients often begin rhythm control treatment in a hospital so that their hearts can be closely watched.</p> <p>The longer you have AF, the less likely it is that doctors can restore a normal heart rhythm. This is especially true for people who have had AF for 6 months or more.</p> <p>Restoring a normal rhythm also becomes less likely if the atria are enlarged or if any underlying heart disease worsens. In these cases, the chance that AF will recur is high, even if you're taking medicine to help convert AF to a normal heart rhythm.</p> <p>Medicines. Medicines used to control the heart rhythm include amiodarone, sotalol, flecainide, propafenone, dofetilide, and ibutilide. Sometimes older medicines such as quinidine, procainamide, and disopyramide are used.</p> <p>Your doctor will carefully tailor the dose and type of medicines he or she prescribes to treat your AF. This is because medicines used to treat AF can cause a different kind of arrhythmia.</p> <p>These medicines also can harm people who have underlying diseases of the heart or other organs. This is especially true for patients who have an unusual heart rhythm problem called Wolff-Parkinson-White syndrome.</p> <p>Your doctor may start you on a small dose of medicine and then gradually increase the dose until your symptoms are controlled. Medicines used for rhythm control can be given regularly by injection at a doctor's office, clinic, or hospital.</p> <p>If your doctor knows how you'll react to a medicine, a specific dose may be prescribed for you to take on an as-needed basis if you have an episode of AF.</p> <p>Procedures. Doctors use several procedures to restore a normal heart rhythm. For example, they may use electrical cardioversion to treat a fast or irregular heartbeat. For this procedure, low-energy shocks are given to your heart to reset the heart's rhythm.</p> <p>Electrical cardioversion isn't the same as the emergency heart shocking procedure often seen on TV programs. It's planned in advance and done under carefully controlled conditions.</p> <p>Before doing electrical cardioversion, your doctor may recommend transesophageal echocardiography (TEE). This test can rule out the presence of blood clots in the atria. If clots are present, you may need to take blood-thinning medicine before the procedure.</p> <p>Catheter ablation (ab-LA-shun) may be used to restore a normal heart rhythm if medicines or electrical cardioversion don't work. For this procedure, a wire is inserted through a vein in the leg or arm and threaded to the heart.</p> <p>Radio wave energy is sent through the wire to destroy abnormal tissue that may be disrupting the normal flow of electrical signals. An electrophysiologist usually does this procedure in a hospital. Your doctor may recommend catheter ablation if medicines don't work.</p> <p>Sometimes doctors use catheter ablation to destroy the atrioventricular (AV) node. The AV node is where the heart's electrical signals pass from the atria to the ventricles (the heart's lower chambers). This procedure requires general anesthesia.</p> <p>Research on the benefits of catheter ablation as a treatment for AF is still ongoing. (For more information, go to the "Clinical Trials" section of this article.)</p> <p>Another procedure to restore a normal heart rhythm is called maze surgery. For this procedure, the surgeon makes small cuts or burns in the atria. These cuts or burns prevent the spread of disorganized electrical signals.</p> <p>This procedure requires open-heart surgery, so it's usually done when a person requires heart surgery for other reasons, such as for heart valve disease (which can increase the risk of AF).</p> <p>Approaches To Treating Underlying Causes and Reducing Risk Factors</p> <p>Your doctor may recommend treatments for an underlying cause of AF or to reduce AF risk factors. For example, he or she may prescribe medicines to treat an overactive thyroid, lower high blood pressure, or manage high cholesterol.</p> <p>Your doctor also may recommend lifestyle changes, such as following a healthy diet, cutting back on salt intake (to help lower blood pressure), quitting smoking, and reducing stress.</p> <p>Limiting or avoiding alcohol, caffeine, or other stimulants that may increase your heart rate also can help reduce your risk for AF.</p>	NHLBI	Atrial Fibrillation
How to prevent Atrial Fibrillation ?	<p>Following a healthy lifestyle and taking steps to lower your risk for heart disease may help you prevent atrial fibrillation (AF). These steps include:</p> <ul style="list-style-type: none">Following a heart healthy diet that's low in saturated fat, trans fat, and cholesterol. A healthy diet includes a variety of whole grains, fruits, and vegetables daily.Not smoking.Being physically active.Maintaining a healthy weight. <p>If you already have heart disease or other AF risk factors, work with your doctor to manage your condition. In addition to adopting the healthy habits above, which can help control heart disease, your doctor may advise you to take medicines to control your heart rate.</p> <p>Follow the DASH eating plan to help lower your blood pressure.</p> <p>Keep your cholesterol and triglycerides at healthy levels with dietary changes and medicines (if prescribed).</p> <p>Limit or avoid alcohol.</p> <p>Control your blood sugar level if you have diabetes.</p> <p>Get ongoing medical care and take your medicines as prescribed.</p>	NHLBI	Atrial Fibrillation
What is (are) Heart Murmur ?	<p>For more information about following a healthy lifestyle, visit the National Heart, Lung, and Blood Institute's Aim for a Healthy Weight Web site, "Your Guide to a Healthy Heart," "Your Guide to Lowering Your Blood Pressure," and "Your Guide to Living Healthier."</p> <p>A heart murmur is an extra or unusual sound heard during a heartbeat. Murmurs range from very faint to very loud. Sometimes they sound like a whooshing or swishing noise.</p> <p>Normal heartbeats make a "lub-DUPP" or "lub-DUB" sound. This is the sound of the heart valves closing as blood moves through the heart. Doctors can hear these sounds and heart murmurs using a stethoscope.</p> <p>Overview</p> <p>The two types of heart murmurs are innocent (harmless) and abnormal.</p> <p>Innocent heart murmurs aren't caused by heart problems. These murmurs are common in healthy children. Many children will have heart murmurs heard by their doctors at some point in their lives.</p> <p>People who have abnormal heart murmurs may have signs or symptoms of heart problems. Most abnormal murmurs in children are caused by congenital (kon-JEN-ih-tal) heart defects. These defects are problems with the heart's structure that are present at birth.</p> <p>In adults, abnormal heart murmurs most often are caused by acquired heart valve disease. This is heart valve disease that develops as the result of another condition. Infections, diseases, and aging can cause heart valve disease.</p> <p>Outlook</p> <p>A heart murmur isn't a disease, and most murmurs are harmless. Innocent murmurs don't cause symptoms. Having one doesn't require you to limit your physical activity or do anything else special. Although you may have a heart murmur, you can usually live a normal life.</p> <p>The outlook and treatment for abnormal heart murmurs depend on the type and severity of the heart problem causing them.</p>	NHLBI	Heart Murmur
What causes Heart Murmur ?	<p>Innocent Heart Murmurs</p> <p>Why some people have innocent heart murmurs and others do not isn't known. Innocent murmurs are simply sounds made by blood flowing through the heart's chambers and valves, or through blood vessels near the heart.</p> <p>Extra blood flow through the heart also may cause innocent heart murmurs. After childhood, the most common cause of extra blood flow through the heart is pregnancy. This is because during pregnancy, women's bodies move more blood than usual.</p> <p>Abnormal Heart Murmurs</p> <p>Congenital heart defects or acquired heart valve disease often are the cause of abnormal heart murmurs.</p> <p>Congenital Heart Defects</p> <p>Congenital heart defects are the most common cause of abnormal heart murmurs in children. These defects are problems with the heart's structure that are present at birth. They change the normal flow of blood through the heart.</p> <p>Congenital heart defects can involve the interior walls of the heart, the valves inside the heart, or the arteries and veins that carry blood to and from the heart. Some babies are born with more than one heart defect.</p> <p>Heart valve problems, septal defects (also called holes in the heart), and diseases of the heart muscle such as hypertrophic cardiomyopathy are common heart defects that cause abnormal heart murmurs.</p> <p>Examples of valve problems are narrow valves that limit blood flow or leaky valves that don't close properly. Septal defects are holes in the wall that separates the right and left sides of the heart. This wall is called the septum.</p> <p>A hole in the septum between the heart's two upper chambers is called an atrial septal defect. A hole in the septum between the heart's two lower chambers is called a ventricular septal defect.</p> <p>Hypertrophic (hi-per-TROF-ik) cardiomyopathy (kar-de-o-mi-OP-ah-thee) (HCM) occurs if heart muscle cells enlarge and cause the walls of the ventricles (usually the left ventricle) to thicken. The thickening may block blood flow from the ventricles to the rest of the body.</p> <p>Heart Defects That Can Cause Abnormal Heart Murmurs</p> <p>For more information, go to the Health Topics Congenital Heart Defects article.</p> <p>Acquired Heart Valve Disease</p> <p>Acquired heart valve disease often is the cause of abnormal heart murmurs in adults. This is heart valve disease that develops as the result of another condition.</p> <p>Many conditions can cause heart valve disease. Examples include heart conditions and other disorders, age-related changes, rheumatic (ru-MAT-ik) fever, and infections.</p> <p>Heart conditions and other disorders. Certain conditions can stretch and distort the heart valves, such as:</p> <ul style="list-style-type: none">Damage and scar tissue from a heart attack or injury to the heart.Advanced high blood pressure and heart failure. These conditions can enlarge the heart or its main arteries. <p>Age-related changes. As you get older, calcium deposits or other deposits may form on your heart valves. These deposits stiffen and thicken the valve flaps and limit blood flow. This stiffening and thickening of the valve is called aortic stenosis.</p> <p>Rheumatic fever. The bacteria that cause strep throat, scarlet fever, and, in some cases, impetigo (im-peh-TI-go) also can cause rheumatic fever. This serious illness can develop if you have an untreated or not fully treated strep infection.</p> <p>Rheumatic fever can damage and scar the heart valves. The symptoms of this heart valve damage often don't occur until many years after recovery from rheumatic fever.</p> <p>Today, most people who have strep infections are treated with antibiotics before rheumatic fever develops. It's very important to take all of the antibiotics your doctor prescribes for strep throat, even if you feel better before the antibiotics are finished.</p> <p>Infections. Common germs that enter the bloodstream and get carried to the heart can sometimes infect the inner surface of the heart, including the heart valves. This rare but sometimes life-threatening infection is called infective endocarditis.</p> <p>IE is more likely to develop in people who already have abnormal blood flow through a heart valve because of heart valve disease. The abnormal blood flow causes blood clots to form on the surface of the valve. The blood clots can break off and travel to other parts of the body.</p> <p>IE can worsen existing heart valve disease.</p> <p>Other Causes</p> <p>Some heart murmurs occur because of an illness outside of the heart. The heart is normal, but an illness or condition can cause blood flow that's faster than normal. Examples of this type of illness include fever, anemia (uh-NY-mee-uh), and hyperthyroidism.</p> <p>Anemia is a condition in which the body has a lower than normal number of red blood cells. Hyperthyroidism is a condition in which the body has too much thyroid hormone.</p>	NHLBI	Heart Murmur
What are the symptoms of Heart Murmur ?	<p>People who have innocent (harmless) heart murmurs don't have any signs or symptoms other than the murmur itself. This is because innocent heart murmurs aren't caused by heart problems.</p> <p>People who have abnormal heart murmurs may have signs or symptoms of the heart problems causing the murmurs. These signs and symptoms may include:</p> <ul style="list-style-type: none">Poor eating and failure to grow normally (in infants)Shortness of breath, which may occur only with physical exertionExcessive sweating with minimal or no exertionChest painDizziness or faintingA bluish color on the skin, especially on the fingertips and lipsChronic coughSwelling or sudden weight gainEnlarged liverEnlarged neck veins <p>Signs and symptoms depend on the problem causing the heart murmur and its severity.</p>	NHLBI	Heart Murmur

How to diagnose Heart Murmur ?	<p>Doctors use a stethoscope to listen to heart sounds and hear heart murmurs. They may detect heart murmurs during routine checkups or while checking for another condition.</p> <p>If a congenital heart defect causes a murmur, it's often heard at birth or during infancy. Abnormal heart murmurs caused by other heart problems can be heard in patients of any age.</p> <p>Specialists Involved</p> <p>Primary care doctors usually refer people who have abnormal heart murmurs to cardiologists or pediatric cardiologists for further care and testing.</p> <p>Cardiologists are doctors who specialize in diagnosing and treating heart problems in adults. Pediatric cardiologists specialize in diagnosing and treating heart problems in children.</p> <p>Physical Exam</p> <p>Your doctor will carefully listen to your heart or your child's heart with a stethoscope to find out whether a murmur is innocent or abnormal. He or she will listen to the loudness, location, and timing of the murmur. This will help your doctor decide if the murmur is innocent or abnormal.</p> <p>Your doctor also may:</p> <p>Ask about your medical and family histories.</p> <p>Do a complete physical exam. He or she will look for signs of illness or physical problems. For example, your doctor may look for a bluish color on your skin. In infants, doctors may look for delayed growth and feeding problems.</p> <p>Ask about your symptoms, such as chest pain, shortness of breath (especially with physical exertion), dizziness, or fainting.</p> <p>Evaluating Heart Murmurs</p> <p>When evaluating a heart murmur, your doctor will pay attention to many things, such as:</p> <p>How faint or loud the sound is. Your doctor will grade the murmur on a scale of 1 to 6 (1 is very faint and 6 is very loud).</p> <p>When the sound occurs in the cycle of the heartbeat.</p> <p>Where the sound is heard in the chest and whether it also can be heard in the neck or back.</p> <p>Whether the sound has a high, medium, or low pitch.</p> <p>How long the sound lasts.</p> <p>How breathing, physical activity, or a change in body position affects the sound.</p> <p>Diagnostic Tests and Procedures</p> <p>If your doctor thinks you or your child has an abnormal heart murmur, he or she may recommend one or more of the following tests.</p> <p>Chest X Ray</p> <p>A chest x ray is a painless test that creates pictures of the structures inside your chest, such as your heart, lungs, and blood vessels. This test is done to find the cause of symptoms, such as shortness of breath and chest pain.</p> <p>EKG</p> <p>An EKG (electrocardiogram) is a simple test that detects and records the heart's electrical activity. An EKG shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of the heart's electrical activity.</p> <p>Echocardiography</p> <p>Echocardiography (EK-o-kar-de-OG-ra-fee), or echo, is a painless test that uses sound waves to create pictures of your heart. The test shows the size and shape of your heart and how well your heart's chambers and valves are working.</p> <p>Echo also can show areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>There are several types of echo, including a stress echo. This test is done both before and after a stress test. During this test, you exercise to make your heart work hard and beat fast. If you can't exercise, you may be given medicine to make your heart beat faster.</p> <p>Stress echo shows whether you have decreased blood flow to your heart (a sign of coronary heart disease).</p>	NHLBI	Heart Murmur
What are the treatments for Heart Murmur ?	<p>Innocent (Harmless) Heart Murmurs</p> <p>Healthy children who have innocent (harmless) heart murmurs don't need treatment. Their heart murmurs aren't caused by heart problems or other conditions.</p> <p>Pregnant women who have innocent heart murmurs due to extra blood volume also don't need treatment. Their heart murmurs should go away after pregnancy.</p> <p>Abnormal Heart Murmurs</p> <p>If you or your child has an abnormal heart murmur, your doctor will recommend treatment for the disease or condition causing the murmur.</p> <p>Some medical conditions, such as anemia or hyperthyroidism, can cause heart murmurs that aren't related to heart disease. Treating these conditions should make the heart murmur go away.</p> <p>If a congenital heart defect is causing a heart murmur, treatment will depend on the type and severity of the defect. Treatment may include medicines or surgery. For more information about treatments for congenital heart defects, go to "What Causes Heart Murmurs?"</p> <p>If acquired heart valve disease is causing a heart murmur, treatment usually will depend on the type, amount, and severity of the disease.</p> <p>Currently, no medicines can cure heart valve disease. However, lifestyle changes and medicines can treat symptoms and help delay complications. Eventually, though, you may need surgery to repair or replace a faulty heart valve.</p> <p>For more information about treatments for heart valve disease, go to the Health Topics Heart Valve Disease article.</p>	NHLBI	Heart Murmur
What is (are) Heart Palpitations ?	<p>Palpitations (pal-pi-TA-shuns) are feelings that your heart is skipping a beat, fluttering, or beating too hard or too fast. You may have these feelings in your chest, throat, or neck. They can occur during activity or even when you're resting.</p> <p>Overview</p> <p>Many things can trigger palpitations, including:</p> <p>Strong emotions</p> <p>Vigorous physical activity</p> <p>Medicines such as diet pills and decongestants</p> <p>Caffeine, alcohol, nicotine, and illegal drugs</p> <p>Certain medical conditions, such as thyroid disease or anemia (uh-NEE-me-uh)</p> <p>These factors can make the heart beat faster or stronger than usual, or they can cause premature (extra) heartbeats. In these situations, the heart is still working normally. Thus, these palpitations usually are harmless.</p> <p>Some palpitations are symptoms of arrhythmias (ah-RITH-me-ahs). Arrhythmias are problems with the rate or rhythm of the heartbeat.</p> <p>Some arrhythmias are signs of heart conditions, such as heart attack, heart failure, heart valve disease, or heart muscle disease. However, less than half of the people who have palpitations have arrhythmias.</p> <p>You can take steps to reduce or prevent palpitations. Try to avoid things that trigger them (such as stress and stimulants) and treat related medical conditions.</p> <p>Outlook</p> <p>Palpitations are very common. They usually aren't serious or harmful, but they can be bothersome. If you have them, your doctor can decide whether you need treatment or ongoing care.</p>	NHLBI	Heart Palpitations
What causes Heart Palpitations ?	<p>Many things can cause palpitations. You may have these feelings even when your heart is beating normally or somewhat faster than normal.</p> <p>Most palpitations are harmless and often go away on their own. However, some palpitations are signs of a heart problem. Sometimes the cause of palpitations can't be found.</p> <p>If you start having palpitations, see your doctor to have them checked.</p> <p>Causes Not Related to Heart Problems</p> <p>Strong Emotions</p> <p>You may feel your heart pounding or racing during anxiety, fear, or stress. You also may have these feelings if you're having a panic attack.</p> <p>Vigorous Physical Activity</p> <p>Intense activity can make your heart feel like it's beating too hard or too fast, even though it's working normally. Intense activity also can cause occasional premature (extra) heartbeats.</p> <p>Medical Conditions</p> <p>Some medical conditions can cause palpitations. These conditions can make the heart beat faster or stronger than usual. They also can cause premature (extra) heartbeats.</p> <p>Examples of these medical conditions include:</p> <p>An overactive thyroid</p> <p>A low blood sugar level</p> <p>Anemia</p> <p>Some types of low blood pressure</p> <p>Fever</p> <p>Dehydration (not enough fluid in the body)</p> <p>Hormonal Changes</p> <p>The hormonal changes that happen during pregnancy, menstruation, and the perimenopausal period may cause palpitations. The palpitations will likely improve or go away as these conditions go away or change.</p> <p>Some palpitations that occur during pregnancy may be due to anemia.</p> <p>Medicines and Stimulants</p> <p>Many medicines can trigger palpitations because they can make the heart beat faster or stronger than usual. Medicines also can cause premature (extra) heartbeats.</p> <p>Examples of these medicines include:</p> <p>Inhaled asthma medicines.</p> <p>Medicines to treat an underactive thyroid. Taking too much of these medicines can cause an overactive thyroid and lead to palpitations.</p> <p>Medicines to prevent arrhythmias. Medicines used to treat irregular heart rhythms can sometimes cause other irregular heart rhythms.</p> <p>Over-the-counter medicines that act as stimulants also may cause palpitations. These include decongestants (found in cough and cold medicines) and some herbal and nutritional supplements.</p> <p>Caffeine, nicotine (found in tobacco), alcohol, and illegal drugs (such as cocaine and amphetamines) also can cause palpitations.</p> <p>Causes Related to Heart Problems</p> <p>Some palpitations are symptoms of arrhythmias. Arrhythmias are problems with the rate or rhythm of the heartbeat. However, less than half of the people who have palpitations have arrhythmias.</p> <p>During an arrhythmia, the heart can beat too fast, too slow, or with an irregular rhythm. An arrhythmia happens if some part of the heart's electrical system doesn't work as it should.</p> <p>Palpitations are more likely to be related to an arrhythmia if you:</p> <p>Have had a heart attack or are at risk for one.</p> <p>Have coronary heart disease (CHD) or risk factors for CHD.</p> <p>Have other heart problems, such as heart failure, heart valve disease, or heart muscle disease.</p> <p>Have abnormal electrolyte levels. Electrolytes are minerals, such as potassium and sodium, found in blood and body fluids. They're vital for normal health and functioning of the body.</p>	NHLBI	Heart Palpitations
Who is at risk for Heart Palpitations??	<p>Some people may be more likely than others to have palpitations. People at increased risk include those who:</p> <p>Have anxiety or panic attacks, or people who are highly stressed</p> <p>Take certain medicines or stimulants</p> <p>Have certain medical conditions that aren't related to heart problems, such as an overactive thyroid</p> <p>Have certain heart problems, such as arrhythmias (irregular heartbeats), a previous heart attack, heart failure, heart valve disease, or heart muscle disease</p> <p>Women who are pregnant, menstruating, or perimenopausal also may be at higher risk for palpitations because of hormonal changes. Some palpitations that occur during pregnancy may be due to anemia.</p> <p>For more information about these risk factors, go to "What Causes Palpitations?"</p>	NHLBI	Heart Palpitations
What are the symptoms of Heart Palpitations ?	<p>Symptoms of palpitations include feelings that your heart is:</p> <p>Skipping a beat</p> <p>Fluttering</p> <p>Beating too hard or too fast</p> <p>You may have these feelings in your chest, throat, or neck. They can occur during activity or even when you're sitting still or lying down.</p> <p>Palpitations often are harmless, and your heart is working normally. However, these feelings can be a sign of a more serious problem if you also:</p> <p>Feel dizzy or confused</p> <p>Are light-headed, think you may faint, or do faint</p> <p>Have trouble breathing</p> <p>Have pain, pressure, or tightness in your chest, jaw, or arms</p> <p>Feel short of breath</p> <p>Have unusual sweating</p> <p>Your doctor may have already told you that your palpitations are harmless. Even so, see your doctor again if your palpitations:</p> <p>Start to occur more often or are more noticeable or bothersome</p> <p>Occur with other symptoms, such as those listed above</p> <p>Your doctor will want to check whether your palpitations are the symptom of a heart problem, such as an arrhythmia (irregular heartbeat).</p>	NHLBI	Heart Palpitations

How to diagnose Heart Palpitations ?	<p>First, your doctor will want to find out whether your palpitations are harmless or related to a heart problem. He or she will ask about your symptoms and medical history, do a physical exam, and recommend several basic tests.</p> <p>This information may point to a heart problem as the cause of your palpitations. If so, your doctor may recommend more tests. These tests will help show what the problem is, so your doctor can decide how to treat it.</p> <p>The cause of palpitations may be hard to diagnose, especially if symptoms don't occur regularly.</p> <p>Specialists Involved</p> <p>Several types of doctors may work with you to diagnose and treat your palpitations. These include a:</p> <p>Primary care doctor</p> <p>Cardiologist (a doctor who specializes in diagnosing and treating heart diseases and conditions)</p> <p>Electrophysiologist (a cardiologist who specializes in the heart's electrical system)</p> <p>Medical History</p> <p>Your doctor will ask questions about your palpitations, such as:</p> <p>When did they begin?</p> <p>How long do they last?</p> <p>How often do they occur?</p> <p>Do they start and stop suddenly?</p> <p>Does your heartbeat feel steady or irregular during the palpitations?</p> <p>Do other symptoms occur with the palpitations?</p> <p>Do your palpitations have a pattern? For example, do they occur when you exercise or drink coffee? Do they happen at a certain time of day?</p> <p>Your doctor also may ask about your use of caffeine, alcohol, supplements, and illegal drugs.</p> <p>Physical Exam</p> <p>Your doctor will take your pulse to find out how fast your heart is beating and whether its rhythm is normal. He or she also will use a stethoscope to listen to your heartbeat.</p> <p>Your doctor may look for signs of conditions that can cause palpitations, such as an overactive thyroid.</p> <p>Diagnostic Tests</p> <p>Often, the first test that's done is an EKG (electrocardiogram). This simple test records your heart's electrical activity.</p> <p>An EKG shows how fast your heart is beating and its rhythm (steady or irregular). It also records the strength and timing of electrical signals as they pass through your heart.</p> <p>Even if your EKG results are normal, you may still have a medical condition that's causing palpitations. If your doctor suspects this is the case, you may have blood tests to gather more information about your heart's structure.</p> <p>Holter or Event Monitor</p> <p>A standard EKG only records the heartbeat for a few seconds. It won't detect heart rhythm problems that don't happen during the test. To diagnose problems that come and go, your doctor may have you wear a Holter or event monitor.</p> <p>A Holter monitor records the heart's electrical activity for a full 24- or 48-hour period. You wear patches called electrodes on your chest. Wires connect the patches to a small, portable recorder. The recorder can be clipped to your clothing.</p> <p>During the 24- or 48-hour period, you do your usual daily activities. You use a notebook to record any symptoms you have and the time they occur. You then return both the recorder and the notebook to your doctor to read the results.</p> <p>An event monitor is similar to a Holter monitor. You wear an event monitor while doing your normal activities. However, an event monitor only records your heart's electrical activity at certain times while you're wearing it.</p> <p>For many event monitors, you push a button to start the monitor when you feel symptoms. Other event monitors start automatically when they sense abnormal heart rhythms.</p> <p>You can wear an event monitor for weeks or until symptoms occur.</p> <p>Holter or Event Monitor</p> <p>Echocardiography</p> <p>Echocardiography uses sound waves to create a moving picture of your heart. The picture shows the size and shape of your heart and how well your heart chambers and valves are working.</p> <p>The test also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>Stress Test</p> <p>Some heart problems are easier to diagnose when your heart is working hard and beating fast. During stress testing, you exercise to make your heart work hard and beat fast while heart tests are done. If you can't exercise, you may have a stress test while lying down.</p>	NHLBI	Heart Palpitations
What are the treatments for Heart Palpitations ?	<p>Treatment for palpitations depends on their cause. Most palpitations are harmless and often go away on their own. In these cases, no treatment is needed.</p> <p>Avoiding Triggers</p> <p>Your palpitations may be harmless but bothersome. If so, your doctor may suggest avoiding things that trigger them. For examples, your doctor may advise you to:</p> <p>Reduce anxiety and stress. Anxiety and stress (including panic attacks) are a common cause of harmless palpitations. Relaxation exercises, yoga or tai chi, biofeedback or guided imagery, or aromatherapy may help you relax.</p> <p>Avoid or limit stimulants, such as caffeine, nicotine, or alcohol.</p> <p>Avoid illegal drugs, such as cocaine and amphetamines.</p> <p>Avoid medicines that act as stimulants, such as cough and cold medicines and some herbal and nutritional supplements.</p> <p>Treating Medical Conditions That May Cause Palpitations</p> <p>Work with your doctor to control medical conditions that can cause palpitations, such as an overactive thyroid. If you're taking medicine that's causing palpitations, your doctor will try to find a different medicine for you.</p> <p>If your palpitations are caused by an arrhythmia (irregular heartbeat), your doctor may recommend medicines or procedures to treat the problem. For more information, go to the Health Topics Arrhythmia article.</p>	NHLBI	Heart Palpitations
How to prevent Heart Palpitations ?	<p>You can take steps to prevent palpitations. Try to avoid things that trigger them. For example:</p> <p>Reduce anxiety and stress. Anxiety and stress (including panic attacks) are a common cause of harmless palpitations. Relaxation exercises, yoga or tai chi, biofeedback or guided imagery, or aromatherapy may help you relax.</p> <p>Avoid or limit stimulants, such as caffeine, nicotine, or alcohol.</p> <p>Avoid illegal drugs, such as cocaine and amphetamines.</p> <p>Avoid medicines that act as stimulants, such as cough and cold medicines and some herbal and nutritional supplements.</p> <p>Also, work with your doctor to treat medical conditions that can cause palpitations.</p>	NHLBI	Heart Palpitations
What is (are) Cardiogenic Shock ?	<p>Cardiogenic (kar-dee-oh-JE-nik) shock is a condition in which a suddenly weakened heart isn't able to pump enough blood to meet the body's needs. The condition is a medical emergency and is fatal if not treated right away.</p> <p>The most common cause of cardiogenic shock is damage to the heart muscle from a severe heart attack. However, not everyone who has a heart attack has cardiogenic shock. In fact, on average, only about 7 percent of people who have a heart attack develop cardiogenic shock.</p> <p>If cardiogenic shock does occur, it's very dangerous. When people die from heart attacks in hospitals, cardiogenic shock is the most common cause of death.</p> <p>What Is Shock?</p> <p>The medical term "shock" refers to a state in which not enough blood and oxygen reach important organs in the body, such as the brain and kidneys. Shock causes very low blood pressure and may be life threatening.</p> <p>Shock can have many causes. Cardiogenic shock is only one type of shock. Other types of shock include hypovolemic (hy-po-vo-LEE-mik) shock and vasodilatory (VAZ-oh-DILE-ah-toe-e) shock.</p> <p>Hypovolemic shock is a condition in which the heart can't pump enough blood to the body because of severe blood loss.</p> <p>In vasodilatory shock, the blood vessels suddenly relax. When the blood vessels are too relaxed, blood pressure drops and blood flow becomes very low. Without enough blood pressure, blood and oxygen don't reach the body's organs.</p> <p>A bacterial infection in the bloodstream, a severe allergic reaction, or damage to the nervous system (brain and nerves) may cause vasodilatory shock.</p> <p>When a person is in shock (from any cause), not enough blood and oxygen are reaching the body's organs. If shock lasts more than a few minutes, the lack of oxygen starts to damage the body's organs. If shock isn't treated quickly, it can be fatal.</p> <p>Some of the signs and symptoms of shock include:</p> <p>Confusion or lack of alertness</p> <p>Loss of consciousness</p> <p>A sudden and ongoing rapid heartbeat</p> <p>Sweating</p> <p>Pale skin</p> <p>A weak pulse</p> <p>Rapid breathing</p> <p>Decreased or no urine output</p> <p>Cool hands and feet</p> <p>If you think that you or someone else is in shock, call 911 right away for emergency treatment. Prompt medical care can save your life and prevent or limit damage to your body's organs.</p> <p>Outlook</p> <p>In the past, almost no one survived cardiogenic shock. Now, about half of the people who go into cardiogenic shock survive. This is because of prompt recognition of symptoms and improved treatments, such as medicines and surgery.</p> <p>In some cases, devices that take over the pumping function of the heart are used. Implanting these devices requires major surgery.</p>	NHLBI	Cardiogenic Shock
What causes Cardiogenic Shock ?	<p>Immediate Causes</p> <p>Cardiogenic shock occurs if the heart suddenly can't pump enough oxygen-rich blood to the body. The most common cause of cardiogenic shock is damage to the heart muscle from a severe heart attack.</p> <p>This damage prevents the heart's main pumping chamber, the left ventricle (VEN-trih-kuhl), from working well. As a result, the heart can't pump enough oxygen-rich blood to the rest of the body.</p> <p>In about 3 percent of cardiogenic shock cases, the heart's lower right chamber, the right ventricle, doesn't work well. This means the heart can't properly pump blood to the lungs, where it picks up oxygen to bring back to the body.</p> <p>Without enough oxygen-rich blood reaching the body's major organs, many problems can occur. For example:</p> <p>Cardiogenic shock can cause death if the flow of oxygen-rich blood to the organs isn't restored quickly. This is why emergency medical treatment is required.</p> <p>If organs don't get enough oxygen-rich blood, they won't work well. Cells in the organs die, and the organs may never work well again.</p> <p>As some organs stop working, they may cause problems with other bodily functions. This, in turn, can worsen shock. For example: - If the kidneys aren't working well, the levels of important chemicals in the body change. This can lead to fluid buildup and other problems.</p> <p>If the kidneys aren't working well, the levels of important chemicals in the body change. This may cause the heart and other muscles to become even weaker, limiting blood flow even more.</p> <p>If the liver isn't working well, the body stops making proteins that help the blood clot. This can lead to more bleeding if the shock is due to blood loss.</p> <p>How well the brain, kidneys, and other organs recover will depend on how long a person is in shock. The less time a person is in shock, the less damage will occur to the organs. This is another reason why emergency treatment is so important.</p> <p>Underlying Causes</p> <p>The underlying causes of cardiogenic shock are conditions that weaken the heart and prevent it from pumping enough oxygen-rich blood to the body.</p> <p>Heart Attack</p> <p>Most heart attacks occur as a result of coronary heart disease (CHD). CHD is a condition in which a waxy substance called plaque (plak) narrows or blocks the coronary (heart) arteries.</p> <p>Plaque reduces blood flow to your heart muscle. It also makes it more likely that blood clots will form in your arteries. Blood clots can partially or completely block blood flow.</p> <p>Conditions Caused by Heart Attack</p> <p>Heart attacks can cause some serious heart conditions that can lead to cardiogenic shock. One example is ventricular septal rupture. This condition occurs if the wall that separates the ventricles (the heart's two lower chambers) tears.</p> <p>The breakdown happens because cells in the wall have died due to a heart attack. Without the wall to separate them, the ventricles can't pump properly.</p> <p>Heart attacks also can cause papillary muscle infarction or rupture. This condition occurs if the muscles that help anchor the heart valves stop working or break because a heart attack cuts off their blood supply. If this happens, the heart valves can't close properly.</p> <p>Other Heart Conditions</p> <p>Serious heart conditions that may occur with or without a heart attack can cause cardiogenic shock. Examples include:</p> <p>Myocarditis (MI-o-kar-DI-tis). This is inflammation of the heart muscle.</p> <p>Endocarditis (EN-do-kar-DI-tis). This is an infection of the inner lining of the heart chambers and valves.</p> <p>Life-threatening arrhythmias (ah-RITH-me-ahs). These are problems with the rate or rhythm of the heartbeat.</p> <p>Pericardial tamponade (per-ih-KAR-de-ah tam-po-NADE). This is too much fluid or blood around the heart. The fluid squeezes the heart muscle so it can't pump properly.</p> <p>Pulmonary Embolism</p> <p>Pulmonary embolism (PE) is a sudden blockage in a lung artery. This condition usually is caused by a blood clot that travels to the lung from a vein in the leg. PE can damage your heart and other organs in your body.</p>	NHLBI	Cardiogenic Shock
Who is at risk for Cardiogenic Shock? ?	<p>The most common risk factor for cardiogenic shock is having a heart attack. If you've had a heart attack, the following factors can further increase your risk for cardiogenic shock:</p> <p>Older age</p> <p>A history of heart attacks or heart failure</p> <p>Coronary heart disease that affects all of the heart's major blood vessels</p> <p>High blood pressure</p> <p>Diabetes</p> <p>Women who have heart attacks are at higher risk for cardiogenic shock than men who have heart attacks.</p>	NHLBI	Cardiogenic Shock

What are the symptoms of Cardiogenic Shock ?	<p>A lack of oxygen-rich blood reaching the brain, kidneys, skin, and other parts of the body causes the signs and symptoms of cardiogenic shock.</p> <p>Some of the typical signs and symptoms of shock usually include at least two or more of the following:</p> <p>Confusion or lack of alertness</p> <p>Loss of consciousness</p> <p>A sudden and ongoing rapid heartbeat</p> <p>Sweating</p> <p>Pale skin</p> <p>A weak pulse</p> <p>Rapid breathing</p> <p>Decreased or no urine output</p> <p>Cool hands and feet</p> <p>Any of these alone is unlikely to be a sign or symptom of shock.</p> <p>If you or someone else is having these signs and symptoms, call 911 right away for emergency treatment. Prompt medical care can save your life and prevent or limit organ damage.</p>	NHLBI	Cardiogenic Shock
How to diagnose Cardiogenic Shock ?	<p>The first step in diagnosing cardiogenic shock is to identify that a person is in shock. At that point, emergency treatment should begin.</p> <p>Once emergency treatment starts, doctors can look for the specific cause of the shock. If the reason for the shock is that the heart isn't pumping strongly enough, then the diagnosis is cardiogenic shock.</p> <p>Tests and Procedures To Diagnose Shock and Its Underlying Causes</p> <p>Blood Pressure Test</p> <p>Medical personnel can use a simple blood pressure cuff and stethoscope to check whether a person has very low blood pressure. This is the most common sign of shock. A blood pressure test can be done before the person has any other tests.</p> <p>Less serious conditions also can cause low blood pressure, such as fainting or taking certain medicines, such as those used to treat high blood pressure.</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple test that detects and records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular).</p> <p>An EKG also records the strength and timing of electrical signals as they pass through each part of the heart. Doctors use EKGs to diagnose severe heart attacks and monitor the heart's condition.</p> <p>Echocardiography</p> <p>Echocardiography (echo) uses sound waves to create a moving picture of the heart. The test provides information about the size and shape of the heart and how well the heart chambers and valves are working.</p> <p>Echo also can identify areas of poor blood flow to the heart, areas of heart muscle that aren't contracting normally, and previous injury to the heart muscle caused by poor blood flow.</p> <p>Chest X Ray</p> <p>A chest x ray takes pictures of organs and structures in the chest, including the heart, lungs, and blood vessels. This test shows whether the heart is enlarged or whether fluid is present in the lungs. These can be signs of cardiogenic shock.</p> <p>Cardiac Enzyme Test</p> <p>When cells in the heart die, they release enzymes into the blood. These enzymes are called markers or biomarkers. Measuring these markers can show whether the heart is damaged and the extent of the damage.</p> <p>Coronary Angiography</p> <p>Coronary angiography (an-jee-OG-ra-fee) is an x-ray exam of the heart and blood vessels. The doctor passes a catheter (a thin, flexible tube) through an artery in the leg or arm to the heart. The catheter can measure the pressure in the coronary arteries.</p> <p>Dye that can be seen on an x-ray image is injected into the bloodstream through the tip of the catheter. The dye lets the doctor study the flow of blood through the heart and blood vessels and see any blockages.</p> <p>Pulmonary Artery Catheterization</p> <p>For this procedure, a catheter is inserted into a vein in the arm or neck or near the collarbone. Then, the catheter is moved into the pulmonary artery. This artery connects the right side of the heart to the lungs.</p> <p>The catheter is used to check blood pressure in the pulmonary artery. If the blood pressure is too high or too low, treatment may be needed.</p> <p>Blood Tests</p> <p>Some blood tests also are used to help diagnose cardiogenic shock, including:</p> <p>Arterial blood gas measurement. For this test, a blood sample is taken from an artery. The sample is used to measure oxygen, carbon dioxide, and pH (acidity) levels in the blood. Certain levels of these substances are associated with shock.</p> <p>Tests that measure the function of various organs, such as the kidneys and liver. If these organs aren't working well, they may not be getting enough oxygen-rich blood. This could be a sign of cardiogenic shock.</p>	NHLBI	Cardiogenic Shock
What are the treatments for Cardiogenic Shock ?	<p>Cardiogenic shock is life threatening and requires emergency medical treatment. The condition usually is diagnosed after a person has been admitted to a hospital for a heart attack. If the person isn't already in a hospital, emergency medical services will take them to the hospital.</p> <p>The first goal of emergency treatment for cardiogenic shock is to improve the flow of blood and oxygen to the body's organs.</p> <p>Sometimes both the shock and its cause are treated at the same time. For example, doctors may quickly open a blocked blood vessel that's damaging the heart. Often, this can get the patient out of shock with little or no additional treatment.</p> <p>Emergency Life Support</p> <p>Emergency life support treatment is needed for any type of shock. This treatment helps get oxygen-rich blood flowing to the brain, kidneys, and other organs.</p> <p>Restoring blood flow to the organs keeps the patient alive and may prevent long-term damage to the organs. Emergency life support treatment includes:</p> <p>Giving the patient extra oxygen to breathe so that more oxygen reaches the lungs, the heart, and the rest of the body.</p> <p>Providing breathing support if needed. A ventilator might be used to protect the airway and provide the patient with extra oxygen. A ventilator is a machine that supports breathing.</p> <p>Giving the patient fluids, including blood and blood products, through a needle inserted in a vein (when the shock is due to blood loss). This can help get more blood to major organs and the rest of the body. This treatment usually is given through a catheter.</p> <p>Medicines</p> <p>During and after emergency life support treatment, doctors will try to find out what's causing the shock. If the reason for the shock is that the heart isn't pumping strongly enough, then the diagnosis is cardiogenic shock.</p> <p>Treatment for cardiogenic shock will depend on its cause. Doctors may prescribe medicines to:</p> <p>Prevent blood clots from forming</p> <p>Increase the force with which the heart muscle contracts</p> <p>Treat a heart attack</p> <p>Medical Devices</p> <p>Medical devices can help the heart pump and improve blood flow. Devices used to treat cardiogenic shock may include:</p> <p>An intra-aortic balloon pump. This device is placed in the aorta, the main blood vessel that carries blood from the heart to the body. A balloon at the tip of the device is inflated and deflated in a rhythm that matches the heart's rhythm.</p> <p>A left ventricular assist device (LVAD). This device is a battery-operated pump that takes over part of the heart's pumping action. An LVAD helps the heart pump blood to the body. This device may be used if damage to the left ventricle is severe.</p> <p>Medical Procedures and Surgery</p> <p>Sometimes medicines and medical devices aren't enough to treat cardiogenic shock.</p> <p>Medical procedures and surgery can restore blood flow to the heart and the rest of the body, repair heart damage, and help keep a patient alive while he or she recovers from shock.</p> <p>Surgery also can improve the chances of long-term survival. Surgery done within 6 hours of the onset of shock symptoms has the greatest chance of improving survival.</p> <p>The types of procedures and surgery used to treat underlying causes of cardiogenic shock include:</p> <p>Percutaneous coronary intervention (PCI) and stents. PCI, also known as coronary angioplasty, is a procedure used to open narrowed or blocked coronary (heart) arteries and treat an ongoing heart attack. A stent is a small mesh tube that keeps the artery open.</p> <p>Coronary artery bypass grafting. For this surgery, arteries or veins from other parts of the body are used to bypass (that is, go around) narrowed coronary arteries. This creates a new passage for oxygen-rich blood to reach the heart.</p> <p>Surgery to repair damaged heart valves.</p> <p>Surgery to repair a break in the wall that separates the heart's chambers. This break is called a septal rupture.</p> <p>Heart transplant. This type of surgery rarely is done during an emergency situation like cardiogenic shock because of other available options. Also, doctors need to do very careful testing to make sure a patient will benefit from a transplant.</p>	NHLBI	Cardiogenic Shock
How to prevent Cardiogenic Shock ?	<p>The best way to prevent cardiogenic shock is to lower your risk for coronary heart disease (CHD) and heart attack. (For more information, go to the National Heart, Lung, and Blood Institute's "Your Guide to a Healthy Heart.")</p> <p>If you already have CHD, it's important to get ongoing treatment from a doctor who has experience treating heart problems.</p> <p>If you have a heart attack, you should get treatment right away to try to prevent cardiogenic shock and other possible complications.</p> <p>Act in time. Know the warning signs of a heart attack so you can act fast to get treatment. Many heart attack victims wait 2 hours or more after their symptoms begin before they seek medical help. Delays in treatment increase the risk of complications.</p> <p>If you think you're having a heart attack, call 911 for help. Don't drive yourself or have friends or family drive you to the hospital. Call an ambulance so that medical personnel can begin life-saving treatment on the way to the hospital.</p>	NHLBI	Cardiogenic Shock
What is (are) Cardiomyopathy ?	<p>Cardiomyopathy refers to diseases of the heart muscle. These diseases have many causes, signs and symptoms, and treatments.</p> <p>In cardiomyopathy, the heart muscle becomes enlarged, thick, or rigid. In rare cases, the muscle tissue in the heart is replaced with scar tissue.</p> <p>As cardiomyopathy worsens, the heart becomes weaker. It's less able to pump blood through the body and maintain a normal electrical rhythm. This can lead to heart failure or irregular heartbeats called arrhythmias. In turn, the heart's inability to pump blood can cause other complications, such as heart valve problems.</p> <p>Overview</p> <p>The types of cardiomyopathy are:</p> <p>Hypertrophic cardiomyopathy</p> <p>Dilated cardiomyopathy</p> <p>Restrictive cardiomyopathy</p> <p>Arrhythmogenic right ventricular dysplasia</p> <p>Unclassified cardiomyopathy</p> <p>Cardiomyopathy can be acquired or inherited. "Acquired" means you aren't born with the disease, but you develop it due to another disease, condition, or factor. "Inherited" means your parents passed the gene for the disease to you.</p> <p>Cardiomyopathy can affect people of all ages. However, people in certain age groups are more likely to have certain types of cardiomyopathy. This article focuses on cardiomyopathy in adults.</p> <p>Outlook</p> <p>Some people who have cardiomyopathy have no signs or symptoms and need no treatment. For other people, the disease develops quickly, symptoms are severe, and serious complications occur.</p> <p>Treatments for cardiomyopathy include lifestyle changes, medicines, surgery, implanted devices to correct arrhythmias, and a nonsurgical procedure. These treatments can control symptoms, reduce complications, and stop the disease from getting worse.</p>	NHLBI	Cardiomyopathy
What causes Cardiomyopathy ?	<p>Cardiomyopathy can be acquired or inherited. Acquired means you aren't born with the disease, but you develop it due to another disease, condition, or factor.</p> <p>Inherited means your parents passed the gene for the disease on to you. Researchers continue to look for the genetic links to cardiomyopathy and to explore how these links cause or contribute to the various types of the disease.</p> <p>Many times, the cause of cardiomyopathy isn't known. This often is the case when the disease occurs in children.</p> <p>Hypertrophic Cardiomyopathy</p> <p>Hypertrophic cardiomyopathy usually is inherited. It's caused by a mutation or change in some of the genes in heart muscle proteins. Hypertrophic cardiomyopathy also can develop over time because of high blood pressure, obesity, or aging.</p> <p>Dilated Cardiomyopathy</p> <p>The cause of dilated cardiomyopathy often isn't known. About one-third of the people who have dilated cardiomyopathy inherit it from their parents.</p> <p>Certain diseases, conditions, and substances also can cause the disease, such as:</p> <p>Alcohol, especially if you also have a poor diet</p> <p>Certain toxins, such as poisons and heavy metals</p> <p>Complications during the last months of pregnancy</p> <p>Coronary heart disease, heart attack, high blood pressure, diabetes, thyroid disease, viral hepatitis, and HIV</p> <p>Illegal drugs, such as cocaine and amphetamines, and some medicines used to treat cancer</p> <p>Infections, especially viral infections that inflame the heart muscle</p> <p>Restrictive Cardiomyopathy</p> <p>Certain diseases, conditions, and factors can cause restrictive cardiomyopathy, including:</p> <p>Amyloidosis: A disease in which abnormal proteins build up in the body's organs, including the heart</p> <p>Connective tissue disorders</p> <p>Hemochromatosis: A disease in which too much iron builds up in the body. The extra iron is toxic to the body and can damage the organs, including the heart.</p> <p>Sarcoidosis: A disease that causes inflammation and can affect various organs in the body. Researchers believe that an abnormal immune response may cause sarcoidosis. This abnormal response causes tiny lumps of cells to form in the organs.</p> <p>Some cancer treatments, such as radiation and chemotherapy</p> <p>Arrhythmogenic Right Ventricular Dysplasia</p> <p>Researchers think that arrhythmogenic right ventricular dysplasia is an inherited disease.</p>	NHLBI	Cardiomyopathy

Who is at risk for Cardiomyopathy? ?	<p>People of all ages and races can have cardiomyopathy. However, certain types of the disease are more common in certain groups.</p> <p>Dilated cardiomyopathy is more common in African Americans than Whites. This type of the disease also is more common in men than women.</p> <p>Teens and young adults are more likely than older people to have arrhythmogenic right ventricular dysplasia, although it's rare in both groups.</p> <p>Major Risk Factors</p> <p>Certain diseases, conditions, or factors can raise your risk for cardiomyopathy. Major risk factors include:</p> <p>A family history of cardiomyopathy, heart failure, or sudden cardiac arrest (SCA)</p> <p>A disease or condition that can lead to cardiomyopathy, such as coronary heart disease, heart attack, or a viral infection that inflames the heart muscle</p> <p>Diabetes or other metabolic diseases, or severe obesity</p> <p>Diseases that can damage the heart, such as hemochromatosis, sarcoidosis, or amyloidosis</p> <p>Long-term alcoholism</p> <p>Long-term high blood pressure</p>	NHLBI	Cardiomyopathy
What are the symptoms of Cardiomyopathy ?	<p>Some people who have cardiomyopathy never have signs or symptoms. Thus, it's important to identify people who may be at high risk for the disease. This can help prevent future problems, such as serious arrhythmias (irreg</p> <p>Some people who have cardiomyopathy never have signs or symptoms. Others don't have signs or symptoms in the early stages of the disease.</p> <p>As cardiomyopathy worsens and the heart weakens, signs and symptoms of heart failure usually occur. These signs and symptoms include:</p> <p>Shortness of breath or trouble breathing, especially with physical exertion</p> <p>Fatigue (tiredness)</p> <p>Swelling in the ankles, feet, legs, abdomen, and veins in the neck</p> <p>Other signs and symptoms may include dizziness; light-headedness; fainting during physical activity; arrhythmias (irregular heartbeats); chest pain, especially after physical exertion or heavy meals; and heart murmurs. (Heart</p> <p>Your doctor will diagnose cardiomyopathy based on your medical and family histories, a physical exam, and the results from tests and procedures.</p>	NHLBI	Cardiomyopathy
How to diagnose Cardiomyopathy ?	<p>Specialists Involved</p> <p>Often, a cardiologist or pediatric cardiologist diagnoses and treats cardiomyopathy. A cardiologist specializes in diagnosing and treating heart diseases. A pediatric cardiologist is a cardiologist who treats children.</p> <p>Medical and Family Histories</p> <p>Your doctor will want to learn about your medical history. He or she will want to know what signs and symptoms you have and how long you've had them.</p> <p>Your doctor also will want to know whether anyone in your family has had cardiomyopathy, heart failure, or sudden cardiac arrest.</p> <p>Physical Exam</p> <p>Your doctor will use a stethoscope to listen to your heart and lungs for sounds that may suggest cardiomyopathy. These sounds may even suggest a certain type of the disease.</p> <p>For example, the loudness, timing, and location of a heart murmur may suggest obstructive hypertrophic cardiomyopathy. A "crackling" sound in the lungs may be a sign of heart failure. (Heart failure often develops in the late</p> <p>Physical signs also help your doctor diagnose cardiomyopathy. Swelling of the ankles, feet, legs, abdomen, or veins in your neck suggests fluid buildup, a sign of heart failure.</p> <p>Your doctor may notice signs and symptoms of cardiomyopathy during a routine exam. For example, he or she may hear a heart murmur, or you may have abnormal test results.</p> <p>Diagnostic Tests</p> <p>Your doctor may recommend one or more of the following tests to diagnose cardiomyopathy.</p> <p>Blood Tests</p> <p>During a blood test, a small amount of blood is taken from your body. It's often drawn from a vein in your arm using a needle. The procedure usually is quick and easy, although it may cause some short-term discomfort.</p> <p>Blood tests give your doctor information about your heart and help rule out other conditions.</p> <p>Chest X Ray</p> <p>A chest x ray takes pictures of the organs and structures inside your chest, such as your heart, lungs, and blood vessels. This test can show whether your heart is enlarged. A chest x ray also can show whether fluid is buildin</p> <p>EKG (Electrocardiogram)</p> <p>An EKG is a simple test that records the heart's electrical activity. The test shows how fast the heart is beating and its rhythm (steady or irregular). An EKG also records the strength and timing of electrical signals as they pass</p> <p>This test is used to detect and study many heart problems, such as heart attacks, arrhythmias (irregular heartbeats), and heart failure. EKG results also can suggest other disorders that affect heart function.</p> <p>A standard EKG only records the heartbeat for a few seconds. It won't detect problems that don't happen during the test.</p> <p>To diagnose heart problems that come and go, your doctor may have you wear a portable EKG monitor. The two most common types of portable EKGs are Holter and event monitors.</p> <p>Holter and Event Monitors</p> <p>Holter and event monitors are small, portable devices. They record your heart's electrical activity while you do your normal daily activities. A Holter monitor records the heart's electrical activity for a full 24- or 48-hour period.</p> <p>An event monitor records your heart's electrical activity only at certain times while you're wearing it. For many event monitors, you push a button to start the monitor when you feel symptoms. Other event monitors start automa</p> <p>Echocardiography</p> <p>Echocardiography (echo) is a test that uses sound waves to create a moving picture of your heart. The picture shows how well your heart is working and its size and shape.</p> <p>There are several types of echo, including stress echo. This test is done as part of a stress test (see below). Stress echo can show whether you have decreased blood flow to your heart, a sign of coronary heart disease.</p> <p>Another type of echo is transesophageal (tranz-ih-sof-uh-JEE-ul) echo, or TEE. TEE provides a view of the back of the heart.</p> <p>For this test, a sound wave wand is put on the end of a special tube. The tube is gently passed down your throat and into your esophagus (the passage leading from your mouth to your stomach). Because this passage is right</p> <p>Before TEE, you're given medicine to help you relax, and your throat is sprayed with numbing medicine.</p> <p>Stress Test</p> <p>Some heart problems are easier to diagnose when your heart is working hard and beating fast. During stress testing, you exercise (or are given medicine if you're unable to exercise) to make your heart work hard and beat fast</p> <p>These tests may include nuclear heart scanning, echo, and positron emission tomography (PET) scanning of the heart.</p> <p>Diagnostic Procedures</p> <p>You may have one or more medical procedures to confirm a diagnosis or to prepare for surgery (if surgery is planned). These procedures may include cardiac catheterization (KATH-e-ter-i-ZA-shun), coronary angiography (an-</p> <p>Cardiac Catheterization</p> <p>This procedure checks the pressure and blood flow in your heart's chambers. The procedure also allows your doctor to collect blood samples and look at your heart's arteries using x-ray imaging.</p> <p>During cardiac catheterization, a long, thin, flexible tube called a catheter is put into a blood vessel in your arm, groin (upper thigh), or neck and threaded to your heart. This allows your doctor to study the inside of your arterie</p> <p>Coronary Angiography</p> <p>This procedure often is done with cardiac catheterization. During the procedure, dye that can be seen on an x ray is injected into your coronary arteries. The dye lets your doctor study blood flow through your heart and blood</p> <p>Dye also may be injected into your heart chambers. This allows your doctor to study the pumping function of your heart.</p> <p>Myocardial Biopsy</p> <p>For this procedure, your doctor removes a piece of your heart muscle. This can be done during cardiac catheterization. The heart muscle is studied under a microscope to see whether changes in cells have occurred. These c</p> <p>Myocardial biopsy is useful for diagnosing some types of cardiomyopathy.</p> <p>Genetic Testing</p> <p>Some types of cardiomyopathy run in families. Thus, your doctor may suggest genetic testing to look for the disease in your parents, brothers and sisters, or other family members.</p> <p>Genetic testing can show how the disease runs in families. It also can find out the chances of parents passing the genes for the disease on to their children.</p> <p>Genetic testing also may be useful if your doctor thinks you have cardiomyopathy, but you don't yet have signs or symptoms. If the test shows you have the disease, your doctor can start treatment early, when it may work be</p>	NHLBI	Cardiomyopathy

What are the treatments for Cardiomyopathy ?	<p>People who have cardiomyopathy but no signs or symptoms may not need treatment. Sometimes, dilated cardiomyopathy that comes on suddenly may go away on its own. For other people who have cardiomyopathy, treati</p> <p>NHLBI</p> <p>Cardiomyopathy</p> <p>Heart-healthy lifestyle changes</p> <p>Medicines</p> <p>Nonsurgical procedure</p> <p>Surgery and implanted devices</p> <p>The main goals of treating cardiomyopathy include:</p> <p>Controlling signs and symptoms so that you can live as normally as possible</p> <p>Managing any conditions that cause or contribute to the disease</p> <p>Reducing complications and the risk of sudden cardiac arrest</p> <p>Stopping the disease from getting worse</p> <p>Heart-Healthy Lifestyle Changes</p> <p>Your doctor may suggest lifestyle changes to manage a condition thats causing your cardiomyopathy including:</p> <p>Heart-healthy eating</p> <p>Maintaining a healthy weight</p> <p>Managing stress</p> <p>Physical activity</p> <p>Quitting smoking</p> <p>Heart-Healthy Eating</p> <p>Your doctor may recommend heart-healthy eating, which should include:</p> <p>Fat-free or low-fat dairy products, such as fat-free milk</p> <p>Fish high in omega-3 fatty acids, such as salmon, tuna, and trout, about twice a week</p> <p>Fruits, such as apples, bananas, oranges, pears, and prunes</p> <p>Legumes, such as kidney beans, lentils, chickpeas, black-eyed peas, and lima beans</p> <p>Vegetables, such as broccoli, cabbage, and carrots</p> <p>Whole grains, such as oatmeal, brown rice, and corn tortillas</p> <p>When following a heart-healthy diet, you should avoid eating:</p> <p>A lot of red meat</p> <p>Palm and coconut oils</p> <p>Sugary foods and beverages</p> <p>Two nutrients in your diet make blood cholesterol levels rise:</p> <p>Saturated fatfound mostly in foods that come from animals</p> <p>Trans fat (trans fatty acids)found in foods made with hydrogenated oils and fats such as stick margarine;baked goods such as, cookies, cakes, and pies, crackers, frostings, and coffee creamers. Some trans fats also occur n</p> <p>Saturated fat raises your blood cholesterol more than anything else in your diet. When you follow a heart-healthy eating plan, only 5 percent to 6percent of your daily calories should come from saturated fat. Food labels list th</p> <p>Not all fats are bad. Monounsaturated and polyunsaturated fats actually help lower blood cholesterol levels.</p> <p>Some sources of monounsaturated and polyunsaturated fats are:</p> <p>Avocados</p> <p>Corn, sunflower, and soybean oils</p> <p>Nuts and seeds, such as walnuts</p> <p>Olive, canola, peanut, safflower, and sesame oils</p> <p>Peanut butter</p> <p>Salmon and trout</p> <p>Tofu</p> <p>Sodium</p> <p>Try to limit the amount of sodium that you eat. This means choosing and preparing foods that are lower in salt and sodium. Try to use low-sodium and no added salt foods and seasonings at the table or while cooking. Food l</p> <p>Dietary Approaches to Stop Hypertension</p> <p>Your doctor may recommend the Dietary Approaches to Stop Hypertension (DASH) eating plan if you have high blood pressure. The DASH eating plan focuses on fruits, vegetables, whole grains, and other foods that are hea</p> <p>The DASH eating plan is a good heart-healthy eating plan, even for those who dont have high blood pressure. Read more about DASH.</p> <p>Alcohol</p> <p>Talk to your doctor about how much alcohol you drink. Too much alcohol canraise your blood pressure and triglyceride levels, a type of fat found in the blood. Alcohol also adds extra calories, which may cause weight gain. Y</p> <p>Maintaining a Healthy Weight</p> <p>Maintaining a healthy weight is important for overall health and can lower your risk for coronary heart disease. Aim for a Healthy Weight by following a heart-healthy eating plan and keeping physically active.</p> <p>Knowing your body mass index (BMI) helps you find out if youre a healthy weight in relation to your height and gives an estimate of your total body fat. To figure out your BMI, check out the National Heart, Lung, and Blood In</p> <p>Below 18.5 is a sign that you are underweight.</p> <p>Between 18.5 and 24.9 is in the normal range.</p> <p>Between 25 and 29.9 is considered overweight.</p> <p>Of 30 or more is considered obese.</p> <p>A general goal to aim for is a BMI of less than 25. Your doctor or health care provider can help you set an appropriate BMI goal.</p> <p>Measuring waist circumference helps screen for possible health risks. If most of your fat is around your waist rather than at your hips, youre at a higher risk for heart disease and type 2 diabetes. This risk may be high with a v</p> <p>If youre overweight or obese, try to lose weight. A loss of just 3 percent to 5 percent of your current weight can lower your triglycerides, blood glucose, and the risk of developing type 2 diabetes. Greater amounts of weight lo</p> <p>Managing Stress</p> <p>Research shows that the most commonly reported trigger for a heart attack is an emotionally upsetting eventparticularly one involving anger. Also, some of the ways people cope with stresssuch as drinking, smoking, or over</p> <p>Learning how to manage stress, relax, and cope with problems can improve your emotional and physical health.Consider healthy stress-reducing activities, such as:</p> <p>A stress management program</p> <p>Meditation</p> <p>Physical activity</p> <p>Relaxation therapy</p> <p>Talking things out with friends or family</p> <p>Physical Activity</p> <p>Routine physical activity can lower many risk factors for coronary heart disease, including LDL (bad) cholesterol, high blood pressure, and excess weight. Physical activity also can lower your risk for diabetes and raise your H</p> <p>Everyone should try to participate in moderate intensity aerobic exercise at least 2hours and 30minutes per week, or vigorous intensity aerobic exercise for 1hour and 15minutes per week. Aerobic exercise, such as brisk walk</p> <p>Read more about physical activity at:</p> <p>Physical Activity and Your Heart</p> <p>U.S. Department of Health and Human Services 2008 Physical Activity Guidelines forAmericans</p> <p>Talk with your doctor before you start a new exercise plan. Ask your doctor how much and what kinds of physical activity are safe for you.</p> <p>Quitting Smoking</p> <p>If you smoke, quit. Smoking can raise your risk for coronary heart disease and heart attack and worsen other coronary heart disease risk factors. Talk with your doctor about programs and products that can help you quit sm</p> <p>If you have trouble quitting smoking on your own, consider joining a support group. Many hospitals, workplaces, and community groups offer classes to help people quit smoking.</p> <p>Read more about quitting smoking at Smoking and Your Heart.</p> <p>Medicines</p> <p>Many medicines are used to treat cardiomyopathy. Your doctor may prescribe medicines to:</p> <p>Balance electrolytes in your body. Electrolytes are minerals that help maintain fluid levels and acid-base balance in the body. They also help muscle and nerve tissues work properly. Abnormal electrolyte levels may be a sign</p> <p>Keep your heart beating with a normal rhythm. These medicines, called antiarrhythmics, help prevent arrhythmias.</p> <p>Lower your blood pressure. ACE inhibitors, angiotensin II receptor blockers, beta blockers, and calcium channel blockers are examples of medicines that lower blood pressure.</p> <p>Prevent blood clots from forming. Anticoagulants, or blood thinners, are an example of a medicine that prevents blood clots. Blood thinners often are used to prevent blood clots from forming in people who have dilated card</p> <p>Reduce inflammation. Corticosteroids are an example of a medicine used to reduce inflammation.</p> <p>Remove excess sodium from your body. Diuretics, or water pills, are an example of medicines that help remove excess sodium from the body, which reduces the amount of fluid in your blood.</p> <p>Slow your heart rate. Beta blockers, calcium channel blockers, and digoxin are examples of medicines that slow the heart rate. Beta blockers and calcium channel blockers also are used to lower blood pressure.</p> <p>Take all medicines regularly, as your doctor prescribes. Dont change the amount of your medicine or skip a dose unless your doctor tells you to.</p> <p>Surgery and Implanted Devices</p> <p>Doctors use several types of surgery to treat cardiomyopathy, including septal myectomy, surgically implanted devices, and heart transplant.</p> <p>Septal Myectomy</p> <p>Septal myectomy is open-heart surgery and is used to treat people who have hypertrophic cardiomyopathy and severe symptoms. This surgery generally is used for younger patients and for people whose medicines arent wo</p> <p>A surgeon removes part of the thickened septum thats bulging into the left ventricle. This improves blood flow through the heart and out to the body. The removed tissue doesnt grow back. If needed, the surgeon also can re</p> <p>Surgically Implanted Devices</p> <p>Surgeons can place several types of devices in the heart to improve function and symptoms, including:</p> <p>Cardiac resynchronization therapy (CRT) device. A CRT device coordinates contractions between the hearts left and right ventricles.</p> <p>Implantable cardioverter defibrillator(ICD). An ICD helps control life-threatening arrhythmias that may lead to sudden cardiac arrest. This small device is implanted in the chest or abdomen and connected to the heart with wire</p> <p>Left ventricular assist device (LVAD). This device helps the heart pump blood to the body. An LVAD can be used as a long-term therapy or as a short-term treatment for people who are waiting for a heart transplant.</p> <p>Pacemaker. This small device is placed under the skin of your chest or abdomen to help control arrhythmias. The device uses electrical pulses to prompt the heart to beat at a normal rate.</p> <p>Heart Transplant</p> <p>For this surgery, a surgeon replaces a persons diseased heart with a healthy heart from a deceased donor. A heart transplant is a last resort treatment for people who have end-stage heart failure. End-stage means the condit</p> <p>Nonsurgical Procedure</p> <p>Doctors may use a nonsurgical procedure called alcohol septal ablation to treat cardiomyopathy. During this procedure, the doctor injects ethanol (a type of alcohol) through a tube into the small artery that supplies blood to t</p>
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How to prevent Cardiomyopathy ?	<p>You can't prevent inherited types of cardiomyopathy. However, you can take steps to lower your risk for diseases or conditions that may lead to or complicate cardiomyopathy. Examples includecoronary heart disease,high bl NHLBI</p> <p>Your doctor may advise you to make heart-healthy lifestyle changes, such as:</p> <p>Avoiding the use of alcohol and illegal drugs</p> <p>Getting enough sleep and rest</p> <p>Heart-healthy eating</p> <p>Physicalactivity</p> <p>Quitting smoking</p> <p>Managing stress</p> <p>Your cardiomyopathy may be due to an underlying disease or condition. If you treat that condition early enough, you may be able to prevent cardiomyopathy complications. For example, to control high blood pressure,high bl</p> <p>Follow your doctors advice about lifestyle changes.</p> <p>Get regular checkups with your doctor.</p> <p>Take all of your medicines as your doctor prescribes.</p>	Cardiomyopathy
What is (are) dilated cardiomyopathy with ataxia syndrome ?	Dilated cardiomyopathy with ataxia (DCMA) syndrome is an inherited condition characterized by heart problems, movement difficulties, and other features affecting multiple body systems. Beginning in infancy to early childh GHR	dilated cardiomyopathy with ataxia syndrome
How many people are affected by dilated cardiomyopathy with ataxia syndrome ?	DCMA syndrome is a very rare disorder. Approximately 30 cases have been identified in the Dariusleut Hutterite population of the Great Plains region of Canada. Only a few affected individuals have been identified outside th GHR	dilated cardiomyopathy with ataxia syndrome
What are the genetic changes related to dilated cardiomyopathy with ataxia syndrome ?	Mutations in the DNAJC19 gene cause DCMA syndrome. The DNAJC19 gene provides instructions for making a protein found in structures called mitochondria, which are the energy-producing centers of cells. While the exa GHR	dilated cardiomyopathy with ataxia syndrome
Is dilated cardiomyopathy with ataxia syndrome inherited ?	This condition is inherited in an autosomal recessive pattern, which means both copies of the gene in each cell have mutations. The parents of an individual with an autosomal recessive condition each carry one copy of the r GHR	dilated cardiomyopathy with ataxia syndrome
What are the treatments for dilated cardiomyopathy with ataxia syndrome ?	These resources address the diagnosis or management of dilated cardiomyopathy with ataxia syndrome: - Ann & Robert H. Lurie Children's Hospital of Chicago: Cardiomyopathy - Baby's First Test - Genetic Testing Regist GHR	dilated cardiomyopathy with ataxia syndrome
What is (are) arrhythmogenic right ventricular cardiomyopathy ?	Arrhythmogenic right ventricular cardiomyopathy (ARVC) is a form of heart disease that usually appears in adulthood. ARVC is a disorder of the myocardium, which is the muscular wall of the heart. This condition causes part GHR	arrhythmogenic right ventricular cardiomyopathy
How many people are affected by arrhythmogenic right ventricular cardiomyopathy ?	ARVC occurs in an estimated 1 in 1,000 to 1 in 1,250 people. This disorder may be underdiagnosed because it can be difficult to detect in people with mild or no symptoms. GHR	arrhythmogenic right ventricular cardiomyopathy
What are the genetic changes related to arrhythmogenic right ventricular cardiomyopathy ?	ARVC can result from mutations in at least eight genes. Many of these genes are involved in the function of desmosomes, which are structures that attach heart muscle cells to one another. Desmosomes provide strength to t GHR	arrhythmogenic right ventricular cardiomyopathy
Is arrhythmogenic right ventricular cardiomyopathy inherited ?	Up to half of all cases of ARVC appear to run in families. Most familial cases of the disease have an autosomal dominant pattern of inheritance, which means one copy of an altered gene in each cell is sufficient to cause the c GHR	arrhythmogenic right ventricular cardiomyopathy
What are the treatments for arrhythmogenic right ventricular cardiomyopathy ?	These resources address the diagnosis or management of ARVC: - Brigham and Women's Hospital - Cleveland Clinic: How Are Arrhythmias Treated? - Gene Review: Gene Review: Arrhythmogenic Right Ventricular Dysplas GHR	arrhythmogenic right ventricular cardiomyopathy
What is (are) familial hypertrophic cardiomyopathy ?	Familial hypertrophic cardiomyopathy is a heart condition characterized by thickening (hypertrophy) of the heart (cardiac) muscle. Thickening usually occurs in the interventricular septum, which is the muscular wall that separ GHR	familial hypertrophic cardiomyopathy
How many people are affected by familial hypertrophic cardiomyopathy ?	Familial hypertrophic cardiomyopathy affects an estimated 1 in 500 people worldwide. It is the most common genetic heart disease in the United States. GHR	familial hypertrophic cardiomyopathy
What are the genetic changes related to familial hypertrophic cardiomyopathy ?	Mutations in one of several genes can cause familial hypertrophic cardiomyopathy; the most commonly involved genes are MYH7, MYBPC3, TNNT2, and TNNI3. Other genes, including some that have not been identified, m GHR	familial hypertrophic cardiomyopathy
Is familial hypertrophic cardiomyopathy inherited ?	This condition is inherited in an autosomal dominant pattern, which means one copy of the altered gene in each cell is sufficient to cause the disorder. Rarely, both copies of the gene are altered, leading to more severe signs GHR	familial hypertrophic cardiomyopathy
What are the treatments for familial hypertrophic cardiomyopathy ?	These resources address the diagnosis or management of familial hypertrophic cardiomyopathy: - Cleveland Clinic - Gene Review: Gene Review: Hypertrophic Cardiomyopathy Overview - Genetic Testing Registry: Familial GHR	familial hypertrophic cardiomyopathy
What is (are) familial dilated cardiomyopathy ?	Familial dilated cardiomyopathy is a genetic form of heart disease. It occurs when heart (cardiac) muscle becomes stretched out in at least one chamber of the heart, causing the open area of the chamber to become enlarge GHR	familial dilated cardiomyopathy
How many people are affected by familial dilated cardiomyopathy ?	It is estimated that 750,000 people in the United States have dilated cardiomyopathy; roughly half of these cases are familial. GHR	familial dilated cardiomyopathy
What are the genetic changes related to familial dilated cardiomyopathy ?	Mutations in more than 30 genes have been found to cause familial dilated cardiomyopathy. These genes provide instructions for making proteins that are found in cardiac muscle cells called cardiomyocytes. Many of these GHR	familial dilated cardiomyopathy
Is familial dilated cardiomyopathy inherited ?	Familial dilated cardiomyopathy has different inheritance patterns depending on the gene involved. In 80 to 90 percent of cases, familial dilated cardiomyopathy is inherited in an autosomal dominant pattern, which means or GHR	familial dilated cardiomyopathy
What are the treatments for familial dilated cardiomyopathy ?	These resources address the diagnosis or management of familial dilated cardiomyopathy: - Cincinnati Children's Hospital - Gene Review: Gene Review: Dilated Cardiomyopathy Overview - Gene Review: Gene Review: Dy GHR	familial dilated cardiomyopathy