



Coronary Artery Disease (CAD)

Guide to Good Health

Healthy Living Guide

- ▶ Asthma
- ▶ Chronic Fatigue Syndrome (CFS)
- ▶ Chronic Obstructive Pulmonary Disease (COPD)
- ▶ Coronary Artery Disease (CAD)
- ▶ Depression
- ▶ Hyperlipidemia
- ▶ Hypertension
- ▶ Osteoarthritis (OA)
- ▶ Osteoporosis
- ▶ Type 2 Diabetes
- ▶ Back Pain
- ▶ Chronic Pain
- ▶ Healthy Eating
- ▶ Healthy Pregnancy
- ▶ Rheumatoid Arthritis (RA)
- ▶ Sleep
- ▶ Smoking Cessation
- ▶ Stress Management
- ▶ Weight Management
- ▶ Bariatric Surgery

What is Coronary Artery Disease (CAD)?

Coronary Artery Disease is the end result of the buildup of fatty deposits called plaque (say "plak") inside the coronary arteries that supply the myocardium (the muscle of the heart) with blood, oxygen and nutrients. It is sometimes also called coronary heart disease (CHD). Although CAD is the most common cause of CHD, it is not the only cause. When plaque builds up, it narrows the arteries and reduces the amount of blood that gets to your heart. This can lead to serious problems, including heart attack.

Overview & Facts

- CAD is the leading cause of death in the US killing over 400,000 men and women each year.
- 1 out of every 5 deaths is due to CAD.
- Over 7 million Americans have suffered a heart attack in their lifetime.
- More than forty percent of those suffering from a heart attack will die.
- Over 12 million Americans are currently living with CAD pain &/or heart problems.



Signs & Symptoms

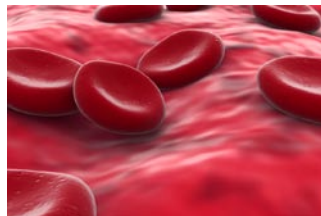
- ✓ Angina (often referred to as chest pain):
 - It can be mistaken for indigestion or heartburn
 - Usually felt in the chest, but may also be felt in the left shoulder, arms, neck, back or jaw
- ✓ Pain or discomfort in other areas of the upper body including the arms, left shoulder, back, neck, jaw, or stomach
- ✓ Difficulty breathing or shortness of breath
- ✓ Sweating or "cold sweat"
- ✓ Fullness, indigestion, or choking feeling (may feel like "heartburn")
- ✓ Nausea or vomiting
- ✓ Light-headedness, dizziness, extreme weakness or anxiety
- ✓ Rapid or irregular heart beats

Most Common Symptoms in Women

- ✓ Pain or pressure over the chest that travels to the arm or jaw
- ✓ A burning sensation in the chest or upper abdomen
- ✓ Shortness of breath, irregular heartbeat, dizziness, sweating, fatigue and nausea

Causes

Coronary artery or heart disease (CAD, CHD)—often simply called heart disease—occurs when the arteries that supply blood to the heart muscle become hardened and narrowed due to a buildup of plaque on the arteries' inner walls.



Plaque is the accumulation of fat, cholesterol, and other substances. As plaque continues to build up in the arteries, blood flow to the heart is reduced.

Heart disease can lead to a heart attack. A heart attack happens when an artery becomes totally blocked with plaque, preventing vital oxygen and nutrients from getting to the heart. A heart attack can cause permanent damage to the heart muscle.

Risk Factors

UNCONTROLLABLE risk factors include:

- Male sex
- Older age
- Family history of heart disease
- Post-menopausal
- Race (African Americans, American Indians, and Mexican Americans are more likely to have heart disease than Caucasians)

CONTROLLABLE risk factors include:

- Smoking
- High LDL, or "bad" cholesterol and low HDL, or "good" cholesterol
- Uncontrolled hypertension (high blood pressure)
- Physical inactivity
- Obesity (more than 20% over one's ideal body weight)
- Uncontrolled diabetes
- High C-reactive protein
- Uncontrolled stress and anger
- Low vitamin D levels
- Poor dental hygiene





Questions to Ask Your Provider

Getting answers to these questions will give you important information about your heart health and what you can do to improve it. You may want to bring this list to your doctor's office.

1. What is my risk for heart disease?
2. For smokers: What can you do to help me quit smoking?
3. How can I tell if I'm having a heart attack?
4. What is my blood sugar level? Does it mean I'm at risk for diabetes?
5. What is my blood pressure? What does it mean for me and what do I need to do about it?
6. What are my body mass index (BMI) and waist measurement? Do they indicate that I need to lose weight for my health?
7. What is a heart healthy eating plan for me? Should I see a registered dietitian to learn more about healthy eating?
8. What are my cholesterol numbers? (These include total cholesterol, low-density lipoprotein (LDL) "bad" cholesterol, high-density lipoprotein (HDL) "good" cholesterol, and triglycerides.) What do they mean for me and what do I need to do about them?
9. What other screening tests for heart disease do I need? What is my vitamin D level? How often should I return for checkups for my heart health?
10. How much physical activity do I need to help protect my heart? What kinds of activities are helpful?

Diagnostic Workup

Main Tests

Blood pressure. High blood pressure increases your risk for heart disease.

Cholesterol (a blood test). High cholesterol increases your risk for heart disease.



Other Helpful Tests

C-reactive protein (CRP) test. High CRP levels are linked to higher risk for heart disease.

Coronary artery calcium scan. This test uses a special kind of X-ray to check for buildup of calcium in the heart's arteries. The result is a number, or score. If you have a high score, you may need more tests to check for heart disease or to find out how bad it is.



Confirmation Tests

An electrocardiogram (EKG or ECG)

A chest X-ray

Blood tests

An exercise electrocardiogram. This is also called a "stress test."

Cardiac perfusion scan. This test shows if you have enough blood flow to the heart.

Echocardiogram and stress echocardiogram.

This test uses ultrasound to see areas of poor blood flow in the heart. It can also check how well your heart is working after a heart attack. The test can help your doctor find out how much blood your heart is pumping during each heartbeat (ejection fraction).

Coronary angiogram. This is an X-ray test that creates pictures of the blood flow through your coronary arteries. It allows your doctor to see any blockage or narrowing of the artery. It's done using a soft, thin tube (catheter) that is put in a blood vessel in the arm or groin and gently moved into the heart. Most often, the test is only done if bypass surgery or angioplasty is an option.



Treatment and Care

1. Medical

- Control high blood pressure - High blood pressure increases the heart's workload, causing the heart to thicken and become stiffer. It also increases your risk of stroke, heart attack, kidney failure and congestive heart failure. When high blood pressure exists with obesity, smoking, high blood cholesterol levels or diabetes, the risk of heart attack or stroke increases several times.
- Cholesterol reduction - The main goal of cholesterol-lowering treatment is to lower your LDL and Triglyceride level enough to reduce your risk of developing heart disease or having a heart attack. Some medications increase your HDL, your good cholesterol, which you want to raise.
- Avoid smoking and second hand smoke - Smoking and exposure to other people's smoke leads to reduced blood flow in the arteries; reduced blood flow can lead to heart attack; consider an organized program or ask your doctor about medication.
- Maintain blood sugar in the desired range - Diabetes seriously increases your risk of developing cardiovascular disease. Even when glucose (blood sugar) levels are under control, diabetes increases the risk of heart disease and stroke, but the risks are even greater if blood sugar is not well controlled.
- Maintaining vitamin D levels - Your body needs Vitamin D to absorb calcium. Calcium keeps your bones and muscles, including your heart, healthy and strong. If your muscles do not get enough calcium, they can cramp, hurt or feel weak. Research suggests that Vitamin D deficiency may be related to many health concerns that include high blood pressure, heart disease and stroke, inflammation, and weight loss. Check with your healthcare professional about vitamin D testing.
- Surgery - The goals of surgery for coronary artery disease are to:
 - ✓ Improve blood flow to the heart,
 - ✓ Relieve chest pain (angina), and
 - ✓ Improve your chances of living a longer life.
- Many people with heart disease can be treated by lifestyle changes and medicine or angioplasty. However, sometimes coronary artery bypass graft surgery (CABG or "cabbage") is needed. It uses healthy blood vessels to create detours around narrowed or blocked arteries. Most of the time, bypass surgery is an open-chest procedure.



2. Pharmacological

If you have symptoms of coronary artery disease, your doctor may prescribe some of the following medicines to control symptoms and, in some cases, slow the progression of the disease:

- Aspirin and other antiplatelet medications help prevent blood clots in your coronary arteries. This can decrease your risk of heart attack and stroke.
- Anticoagulants may also be used after an angioplasty, atherectomy, or bypass surgery. The anticoagulant warfarin may be used if you have heart disease as well as atrial fibrillation or other complications.
- Beta-blockers slow your heart rate and lower your blood pressure to reduce the amount of work your heart has to do. They also reduce angina.
- Statins lower your cholesterol and may reduce your risk of a future heart attack. Your doctor may use the National Cholesterol Education Program's (NCEP) guidelines to help decide if you need treatment with medicine to lower cholesterol.
- Nitrates (nitroglycerin and long-acting nitrates) relieve chest pain and other symptoms of angina.
- Calcium channel blockers slow your heart rate and lower your blood pressure to reduce your heart's workload. They also help widen (dilate) your coronary arteries and reduce angina.
- Ranolazine (Ranexa) relieves chest pain when nitroglycerin, beta-blockers, and calcium channel blockers do not work. Unlike other medicines used to treat angina, ranolazine does not affect heart rate or blood pressure. Most of the time, it is taken with nitrates or beta-blockers.
- Angiotensin-converting enzyme (ACE) inhibitors lower your blood pressure and reduce the strain on your heart. They may also reduce your risk for a future heart attack or heart failure.
- Angiotensin II receptor blockers (ARBs) lower your blood pressure and reduce the strain on your heart. If you cannot tolerate certain side effects of an ACE inhibitor, your doctor may prescribe an ARB instead.



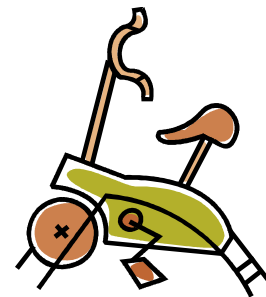
Treatment and Care continued

3. Emotional/Psychological

Stress, both acute and chronic, along with hostility and depression have been linked to high blood pressure, abnormal heartbeat (arrhythmia), blood clots and hardening of the arteries (atherosclerosis), which can lead to coronary artery disease, heart attack and heart failure. Practicing stress management, staying connected with quality social support, and maintaining a sense of humor can help reduce Coronary Artery Disease.

4. Physical

- Good dental hygiene
 - ✓ Brushing your teeth and tongue at least twice daily, flossing every day and getting regular dental checkups and cleanings can help reduce the inflammatory process.
- Regular exercise
 - ✓ Regular physical activity (30 minutes on most, if not all) days is recommended for everyone.
- Get enough rest
 - ✓ Treasure yourself. Allow your body time to rest, repair, de-stress.



5. Nutritional

- Weight loss and Maintaining a Healthy Weight
 - ✓ Excess weight puts significant strain on your heart and worsens several other heart disease risk factors such as diabetes, high blood pressure, and high cholesterol and triglycerides. Research is showing that obesity itself increases heart disease risk.
 - ✓ Losing just 5-10% of current weight will help lower your risk of heart disease.
- Heart Healthy Nutrition
 - ✓ Follow heart healthy nutrition plans like Therapeutic Lifestyle Change (TLC) and dietary approaches to stop Hypertension (DASH). These plans encourage eating fruits, vegetables, hi-fiber, whole grains, fish (those high in Omega 3 fatty acids), avoiding saturated and trans fats, and limiting sodium intake to help decrease Coronary Artery Disease.

Healthy Lifestyle Management

Cardiovascular disease is preventable. You can take action to reduce your risk by focusing on your lifestyle and habits. This is a family endeavor. By making healthy lifestyle changes, you set a good example for your children.

Healthy lifestyle activities practiced today can enhance the quality of life for you and your family for years to come.

Patients with coronary disease or heart failure in the United States who are treated by cardiologists appear more likely to receive evidence-based care and probably have better outcomes.



Resources

- ❖ American Diabetes Association: <http://professional.diabetes.org> - All about Physical Activity for People with Diabetes
- ❖ The American Journal of Medicine: www.amjmed.com - 108:3 (216-226)
- ❖ National Heart Lung and Blood Institute: www.nhlbi.nih.gov - Clinical Guidelines on the Identification, Evaluation and Treatment of Overweight and Obesity in Adults
- ❖ Medline Plus: www.nlm.nih.gov/medlineplus - Coronary Artery Disease
- ❖ Clinical and Diagnostic Laboratory Immunology: www.ncbi.nlm.nih.gov - 9(2): 207-215
- ❖ U.S. Department of Health and Human Services: www.nhlbi.nih.gov - Weight and Waist Measurement and Your Guide to a Healthy Heart
- ❖ WebMD: www.webmd.com/heart-disease - Risk Factors for Heart Disease
- ❖ WebMD: www.webmd.com/balance/stress-management - Stress Management, Effects of Stress
- ❖ World Heart Federation: www.worldheart.org - Psychological Factors and Cardiovascular Disease