

NATIONAL PHILOPTOCHOS SOCIETY COMMUNITY EDUCATIONAL INITIATIVES

Women's Health Initiative

Resources

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Tables of Contents

Section 1: General Facts of Heart Disease

- Women and Heart Disease - Fact Sheet
- Know the Facts About Heart Disease
- What is Cardiovascular Disease?

Section 2: Signs and Symptoms

- Heart disease in women: Understand symptoms and risk factors
- Women and Heart Disease
- Heart Attack Symptoms in Women

Section 3: Profile of a Heart Disease Candidate

- Know Your Numbers? They could just save your life.

Section 4: Contributing Factors – Heredity, Stress, Age, Other

- What Are the Risk Factors for Heart Disease?
- How Do I Find Out if I Am at Risk for Heart Disease?

Section 5: Lifestyle – Diet and Exercise

- The American Heart Association's Diet and Lifestyle Recommendations
- One-Page Guide to a Heart-Healthy Diet
- Heart Healthy Recipes
- Reduce your stress to protect your heart
- No Time for Exercise? Here Are 7 Ways to Move More!
- Why is Walking the Most Popular Form of Exercise?
- Fitness Basics
- What Exercise is Right for Me?
- 10 Tips for Daily Exercise
- 10 Fitness Tips to Help Prevent Heart Disease
- Top Quick Heart-Healthy Fitness Tips
- Abdominal Exercises to Strengthen Your Core
- Exercises to Increase Bone Density
- Health Benefits of Weight Training for Women
- Cookbooks for Delicious, Easy and Heart-Healthy Recipes

Section 6: Diseases and Conditions That Can Contribute to Heart Disease

- Conditions that Increase Risk for Heart Disease
- Heart Disease Death Rates, 2011-2013: Women, Ages 35+, by County
- Heart Disease Facts

- Cardiovascular Disease and Diabetes
- National Diabetes Statistics Report, 2017

Section 7: Medication and Treatments

- Treatment of a Heart Attack
- Heart Disease in Women - Treatment
- Tips for Taking Heart Medications

Section 8: Journey After Diagnosis

- Managing Heart Disease
- Tips to Combat Depression After a Stroke
- How to Stay Social After Heart Disease
- Using Diet and Dancing to Fight Heart Disease
- Recovering from a Stroke: Tai Chi Exercises
- Sex After Heart Attack: Talk with Your Doctor
- Find AHA-Accredited Hospitals Near You

Section 9: Role of Advocacy

- Skills and Abilities to Focus On
- 6 Ways to Be Your Own Health Advocate
- Questions to Ask Your Doctor
- What You Can Do to Stay Safe

Section 10: Prevention and Education

- Silent Heart Attack: Symptoms, Causes and Prevention
- Body Mass Index in Adults (BMI Calculator for Adults)
- Healthy Body, Happy Heart
- How to Prevent Heart Disease
- High Blood Pressure
- The Heart Truth for Women

Section 11: Testimonials from Those Living with Heart Disease

We are soliciting personal testimonials from women who are living with heart disease. Please share your story with us: communications@philoptochos.org

- Testimonial One
- Testimonial Two
- Testimonial Three
- Testimonial Four
- Testimonial Five
- Testimonial Six



Women and Heart Disease Fact Sheet

www.womensheart.org

Prevalence:

- Worldwide, 8.6 million women die from heart disease each year, accounting for a third of all deaths in women. Three million women die from stroke each year. Stroke accounts for more deaths among women than men (11% vs 8.4%) with additional risk for CHD unique to women related to oral contraceptive use in combination with smoking.
- 8 million women in the US are currently living with heart disease; 35,000 are under the age of 65. Four million suffer from angina.
- 435,000 American women have heart attacks annually; 83,000 are under the age of 65 with the average age of 70.4 years.
- 42% of women who have heart attacks die within 1 year, compared to 24% of men.
- Under age 50, women's heart attacks are twice as likely as men's to be fatal.
- 267,000 women die each year from heart attacks, which kill six times as many women as breast cancer. Another 31, 837 women die each year of congestive heart failure, representing 62.6% of all heart failure deaths.

At-Risk:

- 71% of women experience early warning signs of heart attack with sudden onset of extreme weakness that feels like the flu.
- Nearly two-thirds of the deaths from heart attacks in women occur among those who have no history of chest pain.
- Women who smoke risk having a heart attack 19 years earlier than non-smoking women.
- Women with hypertension experience a risk of developing coronary heart disease 3.5 times that of females with normal blood pressure. High blood pressure is more common in women taking oral contraceptives, especially in obese women.
- Women with diabetes have more than double the risk of heart attack than non-diabetic women. Diabetes doubles the risk of a second heart attack in women but not in men.
- 23% of white women, 38% of black women, and 36% Mexican American women are obese. Obesity leads to an increased risk of premature death due to cardiovascular problems like hypertension, stroke and coronary artery disease.
- The age-adjusted rate of heart disease for African American women is 72% higher than for white women. African American women ages 55-64 are twice as likely as white women to have a heart attack and 35% more likely to suffer CAD.
- Marital stress worsens the prognosis in women with heart disease.

Compared to Men:

- Men's plaque distributes in clumps whereas women's distributes evenly throughout artery walls. This results in women's angiographic studies being misinterpreted as "normal".
- Women wait longer than men to go to an emergency room when having a heart attack and physicians are slower to recognize the presence of heart attacks in women because "characteristic" patterns of chest pain and EKG changes are less frequently present.
- After heart attack, women are less likely than men to receive beta blockers, ACE inhibitors and aspirin - therapies known to improve survival. This contributes to a higher rate of complications after heart attacks in women, even after adjusting for age.
- Women are twice as likely as men to die within the first few weeks after suffering a heart attack; 38% of women and 25% of men will die within one year of a first recognized heart attack.
- 46% of women and 22% of men heart attack survivors will be disabled with heart failure within six years.
- Women are two to three times as likely to die following heart bypass surgery. Younger aged women between the ages of 40-59 are up to 4 times more likely to die from heart bypass surgery than men the same age.
- Studies show women who are eligible candidates for life-saving clot-buster drugs are far less likely than men to receive them.
- Since 1984, more women than men have died each year from heart disease each year, and the gap between men and women's survival continues to widen.
- Women receive fewer heart disease procedures than men, however, more is not necessarily better in this setting and the best course of treatment for a woman with heart disease has yet to be established.
- Women's hearts respond better than men's to healthy lifestyle changes, yet 2% of the NIH budget is dedicated to prevention.
- Women comprise of only 24% of participants in all heart-related studies



KNOW THE FACTS ABOUT

Heart Disease



What is heart disease?

Heart disease is the leading cause of death in the United States. More than 600,000 Americans die of heart disease each year. That's one in every four deaths in this country.¹

The term “heart disease” refers to several types of heart conditions. The most common type is coronary artery disease, which can cause heart attack. Other kinds of heart disease may involve the valves in the heart, or the heart may not pump well and cause heart failure. Some people are born with heart disease.

Are you at risk?

Anyone, including children, can develop heart disease. It occurs when a substance called plaque builds up in your arteries. When this happens, your arteries can narrow over time, reducing blood flow to the heart.

Smoking, eating an unhealthy diet, and not getting enough exercise all increase your risk for having heart disease.

Having high cholesterol, high blood pressure, or diabetes also can increase your risk for heart disease. Ask your doctor about preventing or treating these medical conditions.

What are the signs and symptoms?

The symptoms vary depending on the type of heart disease. For many people, chest discomfort or a heart attack is the first sign.

Someone having a heart attack may experience several symptoms, including:

- Chest pain or discomfort that doesn't go away after a few minutes.
- Pain or discomfort in the jaw, neck, or back.
- Weakness, light-headedness, nausea (feeling sick to your stomach), or a cold sweat.
- Pain or discomfort in the arms or shoulder.
- Shortness of breath.

If you think that you or someone you know is having a heart attack, call 9-1-1 immediately.



¹ CDC: Deaths: Final Data for 2009. www.cdc.gov/nchs/data/nvsr/nvsr60/nvsr60_03.pdf

KNOW THE FACTS ABOUT

Heart Disease

How is heart disease diagnosed?

Your doctor can perform several tests to diagnose heart disease, including chest X-rays, coronary angiograms, electrocardiograms (ECG or EKG), and exercise stress tests. Ask your doctor about what tests may be right for you.

Can it be prevented?

You can take several steps to reduce your risk for heart disease:

- Don't smoke. CDC's Office on Smoking and Health Web site has information on quitting smoking.

<http://www.cdc.gov/tobacco>

- Maintain a healthy weight. CDC's Healthy Weight Web site includes information and tools to help you lose weight.

<http://www.cdc.gov/healthyweight/index.html>

- Eat a healthy diet. Tips on reducing saturated fat in your diet are available on the Web site for CDC's Division for Nutrition, Physical Activity, and Obesity.

<http://www.cdc.gov/nutrition/everyone/basics/fat/saturatedfat.html>

- Exercise regularly. Visit CDC's Physical Activity Web site for more information on being active.

<http://www.cdc.gov/physicalactivity/index.html>

- Prevent or treat your other health conditions, especially high blood pressure, high cholesterol, and diabetes.

How is it treated?

If you have heart disease, lifestyle changes, like those just listed, can help lower your risk for complications. Your doctor also may prescribe medication to treat the disease. Talk with your doctor about the best ways to reduce your heart disease risk.

For More Information:

Learn more at the following Web sites.

- Centers for Disease Control and Prevention's Division for Heart Disease and Stroke Prevention:

<http://www.cdc.gov/dhdsp/index.htm>

- Centers for Disease Control and Prevention's National Center on Birth Defects & Developmental Disabilities:

<http://www.cdc.gov/ncbddd/birthdefects/default.htm>

- American Heart Association:

<http://www.americanheart.org>

- National Heart, Lung, and Blood Institute:

<http://www.nhlbi.nih.gov>



What is Cardiovascular Disease?

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Heart and blood vessel disease — also called [heart disease](#) — includes numerous problems, many of which are related to a process called [atherosclerosis](#). Atherosclerosis is a condition that develops when a substance called plaque builds up in the walls of the arteries. This buildup narrows the arteries, making it harder for blood to flow through. If a blood clot forms, it can stop the blood flow. This can cause a heart attack or stroke.



A [heart attack](#) occurs when the blood flow to a part of the heart is blocked by a blood clot. If this clot cuts off the blood flow completely, the part of the heart muscle supplied by that artery begins to die. Most people survive their first heart attack and return to their normal lives to enjoy many more years of productive activity. But having a heart attack does mean you have to make some changes. The doctor will advise you of [medications](#) and [lifestyle changes](#) according to how badly the heart was damaged and what degree of heart disease caused the heart attack. [Learn more about heart attack.](#)

An [ischemic stroke](#) (the most common type) happens when a blood vessel that feeds the brain gets blocked, usually from a blood clot. When the blood supply to a part of the brain is shut off, brain cells will die. The result will be the inability to carry out some of the previous functions as before like walking or talking. A [hemorrhagic stroke](#) occurs when a blood vessel within the brain bursts. The most likely cause is uncontrolled hypertension (blood pressure).

Some effects of stroke are permanent if too many brain cells die after a stroke due to lack of blood and oxygen to the brain. These cells are never replaced. The good news is that some brain cells don't die — they're only temporarily out of order. Injured cells can repair themselves. Over time, as the repair takes place, some body functioning improves. Also, other brain cells may take control of those areas that were injured. In this way, strength may improve, speech may get better and memory may improve. This recovery process is what rehabilitation is all about. [Learn more about stroke.](#)

Other Types of Cardiovascular Disease

Heart failure: This doesn't mean that the heart stops beating. Heart failure, sometimes called congestive heart failure, means the heart isn't pumping blood as well as it should. The heart keeps working, but the body's need for blood and oxygen isn't being met. Heart failure can get worse if it's not treated. If your loved one has heart failure, it's very important to follow the doctor's orders. [Learn more about heart failure.](#)

Arrhythmia: This is an abnormal rhythm of the heart. There are various types of arrhythmias. The heart can beat too slow, too fast or irregularly. Bradycardia is when the [heart rate](#) is less than 60 beats per minute. Tachycardia is when the heart rate is more than 100 beats per minute. An arrhythmia can affect how well the heart works. The heart may not be able to pump enough blood to meet the body's needs. [Learn more about arrhythmia.](#)

Heart valve problems: When heart valves don't open enough to allow the blood to flow through as it should, it's called *stenosis*. When the heart valves don't close properly and allow blood to leak through, it's called *regurgitation*. When the valve leaflets bulge or prolapse back into the upper chamber, it's a condition called *prolapse*. Discover more about the [roles your heart valves play in healthy circulation](#) and learn more about [heart valve disease](#).

Cardiovascular Disease	Treatment
Heart Valve Problems	Medications Heart Valve Surgery
Arrhythmia	Medications Pacemaker
Heart Attack	Medications — clotbusters (should be administered as soon as possible for certain types of heart attacks) Coronary Angioplasty

Cardiovascular Conditions

- [Conditions Home](#)
- [Arrhythmia and Atrial Fibrillation](#)
- [Cardiac Arrest](#)
- [Cardiac Rehab](#)
- [Cardiomyopathy](#)
- [Cardiovascular Conditions of Childhood](#)
- [Cholesterol](#)
- [Congenital Heart Defects](#)
- [Diabetes](#)
- [Heart Attack](#)
- [Heart Failure \(HF\)](#)
- [Heart Valve Problems and Disease](#)
- [High Blood Pressure \(HBP\)](#)
- [Metabolic Syndrome](#)
- [Pericarditis](#)
- [Peripheral Artery Disease \(PAD\)](#)
- [Stroke](#)
- [Vascular Health](#)
- [Venous Thromboembolism \(VTE\)](#)
- [Consumer Healthcare](#)
- [Tools For Your Heart Health](#)
- [Watch, Learn & Live Animations Library](#)

Watch, Learn and Live



Our **Interactive Cardiovascular Library** has detailed animations and illustrations to help you learn about conditions, treatments and procedures related to heart disease and stroke.

START EXPLORING TODAY!

Stroke

[Medications](#) — clotbusters (must be administered within 3 hours from onset of stroke symptoms for certain types of strokes, see [Stroke Treatments](#))
[Carotid Endarterectomy \(PDF\)](#)

Diagnostic Tests, Surgical Procedures and Medications

In the hospital and during the first few weeks at home, your loved one's doctor may perform several tests and procedures. These tests help the doctor determine what caused the stroke or heart attack and how much damage was done. Some tests monitor progress to see if treatment is working. [Learn more about diagnostic tests and procedures.](#)

Your loved one may have undergone additional surgical procedures. [Learn more about cardiac procedures and surgeries.](#)

Your first goal is to help your loved one enjoy life again and work to prevent another stroke or heart attack. As a caregiver, you're responsible for helping your loved one take medications as directed and on time. Find out about the new medications your loved one must take. Know what they're for and what they do. It's important to follow your doctor's directions closely, so ask questions and take notes. [Learn more about cardiac medications.](#)

This content was last reviewed May 2017.

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- [Latest Heart and Stroke News](#)
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- [Go Red Por Tu Corazón](#)
- [Healthy Living](#)
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- [American Stroke Association](#)
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Heart disease in women: Understand symptoms and risk factors

All women face the threat of heart disease. But becoming aware of symptoms and risks unique to women, as well as eating a heart-healthy diet and exercising, can help protect you.

By Mayo Clinic Staff

Although heart disease may often be thought of as a problem for men, heart disease is the most common cause of death for both women and men in the United States. One challenge is that some heart disease symptoms in women may be different from those in men. Fortunately, women can take steps to understand their unique symptoms of heart disease and to begin to reduce their risk of heart disease.

The most common heart attack symptom in women is some type of pain, pressure or discomfort in the chest. But it is not always severe or even the most prominent symptom, particularly in women. And, sometimes, women may have a heart attack without chest pain. Women are more likely than men to have heart attack symptoms unrelated to chest pain, such as:

- Neck, jaw, shoulder, upper back or abdominal discomfort
- Shortness of breath
- Pain in one or both arms
- Nausea or vomiting
- Sweating
- Lightheadedness or dizziness
- Unusual fatigue

These symptoms can be more subtle than the obvious crushing chest pain often associated with heart attacks. Women may describe chest pain as pressure or a tightness. This may be because women tend to have blockages not only in their main arteries but also in the smaller

arteries that supply blood to the heart — a condition called small vessel heart disease or coronary microvascular disease.

Women's symptoms may occur more often when women are resting, or even when they're asleep. Mental stress also may trigger heart attack symptoms in women.

Women tend to show up in emergency rooms after heart damage has already occurred because their symptoms are not those usually associated with a heart attack, and because women may downplay their symptoms. If you experience these symptoms or think you're having a heart attack, call for emergency medical help immediately. Don't drive yourself to the emergency room unless you have no other options.

Although several traditional risk factors for coronary artery disease — such as high cholesterol, high blood pressure and obesity — affect women and men, other factors may play a bigger role in the development of heart disease in women. For example, risk factors may include:

- **Diabetes.** Women with diabetes are at greater risk of heart disease than are men with diabetes.
- **Mental stress and depression.** Women's hearts are affected by stress and depression more than men's. Depression makes it difficult to maintain a healthy lifestyle and follow recommended treatment, so talk to your doctor if you're having symptoms of depression.
- **Smoking.** In women, smoking is a greater risk factor for heart disease in women than it is in men.
- **Inactivity.** A lack of physical activity is a major risk factor for heart disease, and some research has found women to be more inactive than men.
- **Menopause.** Low levels of estrogen after menopause pose a significant risk factor for developing cardiovascular disease in the smaller blood vessels (coronary microvascular disease).
- **Broken heart syndrome.** This condition — often brought on by stressful situations that can cause severe, but usually temporary, heart muscle failure — occurs more commonly in women after menopause. This condition may also be called takotsubo cardiomyopathy, apical ballooning syndrome or stress cardiomyopathy.
- **Certain chemotherapy drugs and radiation therapy for cancer.** Some chemotherapy drugs and radiation therapies, such as those used to treat breast cancer, may increase the risk of cardiovascular disease.
- **Pregnancy complications.** High blood pressure or diabetes during pregnancy can increase women's long-term risk of high blood pressure and diabetes and increase the risk of development of heart disease in the mothers.

Some research has found that if you had pregnancy complications such as high blood pressure or diabetes your children may also have an increased risk of heart disease in the future.

Women with inflammatory diseases, such as rheumatoid arthritis or lupus, may also have a higher risk of heart disease. Research is ongoing in other heart disease risk factors in women.

No. Women of all ages should take heart disease seriously. Women under the age of 65, and especially those with a family history of heart disease, need to pay close attention to heart disease risk factors.

Women can make several lifestyle changes to reduce the risk of heart disease, including:

- Quit or don't start smoking.
- Exercise regularly.
- Maintain a healthy weight.
- Eat a healthy diet that includes whole grains, a variety of fruits and vegetables, low-fat or fat-free dairy products, and lean meats. Avoid saturated or trans fat, added sugars, and high amounts of salt.

Women also need to take prescribed medications appropriately, such as blood pressure medications, blood thinners and aspirin. And they'll need to better manage other conditions that are risk factors for heart disease, such as high blood pressure, high cholesterol and diabetes.

In general, everybody should do moderate exercise, such as walking at a brisk pace, on most days of the week. The Department of Health and Human Services recommends 150 minutes a week of moderate aerobic activity, 75 minutes of vigorous aerobic activity a week, or a combination of moderate and vigorous activity. That's about 30 minutes a day, five days a week.

For even more health benefits, aim for 300 minutes of moderate aerobic activity or 150 minutes of vigorous aerobic activity a week. That's about 60 minutes a day, five days a week. In addition, aim to do strength training exercises two or more days a week.

If you can't get all of your exercise completed in one session, try breaking up your physical activity into several 10-minute sessions during a day. You'll still get the same heart-health benefits.

Interval training — in which you alternate short bursts of intense activity with intervals of lighter activity — is another exercise alternative you might try. For example, you could incorporate short bursts of jogging or fast walking into your regular walks. Interval training may help you burn more calories than continuous exercise, and it can help you maintain a healthy weight and keep your heart healthy.

You can make other small changes to increase your physical activity throughout the day. For example, try taking the stairs instead of the elevator, walking or riding your bicycle to work or to do errands, or doing situps or pushups while watching television.

What's considered a healthy weight varies from person to person, but having a normal body mass index (BMI) is helpful. BMI is a measurement calculated from height and weight. It helps

you see if you have a healthy or unhealthy percentage of body fat. A BMI of 25 or higher can be associated with an increased risk of heart disease.

Waist circumference also is a useful tool to measure whether or not you're overweight. Women are generally considered overweight if their waist measurement is greater than 35 inches (89 centimeters).

Losing even a small amount of weight can help by lowering your blood pressure and reducing your risk of diabetes — both of which increase your risk of heart disease.

Generally, heart disease treatment in women and in men is similar. Treatment may include medications, angioplasty and stenting, or coronary bypass surgery. Angioplasty and stenting, commonly used treatments for heart attack, are effective for both men and women. However, women who don't have typical chest pain are less likely to be offered these potentially lifesaving options.

And, in women, if heart symptoms are mainly caused by coronary microvascular disease, treatment generally includes healthy lifestyle changes and medications.

Doctors may recommend cardiac rehabilitation to improve health and recover from heart disease.

Guidelines from the American Heart Association (AHA) urge women to be more aggressive about cutting their cardiovascular disease risk. For some women, this includes a daily aspirin. But, the routine use of daily aspirin therapy to prevent heart disease in low-risk women younger than 65 years old isn't recommended.

Doctors may recommend that women older than 65 years take a daily 81-milligram aspirin to help prevent heart disease if their blood pressure is controlled and the risk of digestive bleeding is low. Aspirin might also be considered for at-risk women younger than 65 years for stroke prevention.

But, don't start taking aspirin for heart disease prevention on your own. Talk with your doctor about the risks and benefits of taking aspirin based on your individual risk factor.

1. How does heart disease affect women? National Heart, Lung, and Blood Institute. <http://www.nhlbi.nih.gov/health/health-topics/topics/hdw>. Accessed May 18, 2016.
2. Heart attack symptoms in women. American Heart Association. http://www.heart.org/HEARTORG/Conditions/HeartAttack/WarningSignsofaHeartAttack/Heart-Attack-Symptoms-in-Women_UCM_436448_Article.jsp#.V0ciy9j2bcs. Accessed May 18, 2016.
3. Douglas PS. Clinical features and diagnosis of coronary heart disease in women. <http://www.uptodate.com/home>. Accessed May 18, 2016.
4. Douglas PS, et al. Overview of cardiovascular risk factors in women. <http://www.uptodate.com/home>. Accessed May 18, 2016.

5. Douglas PS. Management of coronary heart disease in women. <http://www.uptodate.com/home>. Accessed May 18, 2016.
6. Garcia M, et al. Cardiovascular disease in women: Clinical perspectives. *Circulation Research*. 2016;118:1273.
7. Mosca L, et al. Effectiveness-based guidelines for the prevention of cardiovascular disease in women--2011 update: A guideline from the American Heart Association. *Journal of the American College of Cardiology*. 2011;57:1404.
8. Mehta LS, et al. Acute myocardial infarction in women: A scientific statement from the American Heart Association. *Circulation*. 2016;133:916.
9. 2008 Physical Activity Guidelines for Americans. U.S. Department of Health and Human Services. <http://www.health.gov/PAGUIDELINES/guidelines/default.aspx>. Accessed May 25, 2016.
10. ACSM information on: High-intensity interval training. American College of Sports Medicine. <https://www.acsm.org/access-public-information/brochures-fact-sheets/brochures>. Accessed May 26, 2016.
11. Weston M, et al. Effects of low-volume high-intensity interval training (HIT) on fitness in adults: A meta-analysis of controlled and non-controlled trials. *Sports Medicine*. 2014;44:1005.
12. What is coronary microvascular disease? National Heart, Lung, and Blood Institute. <http://www.nhlbi.nih.gov/health/health-topics/topics/cmd>. Accessed June 1, 2016.
13. Park K, et al. Adverse pregnancy conditions, infertility, and future cardiovascular risk: Implications for mother and child. *Cardiovascular Drugs and Therapy*. 2015;29:391.
14. Mankad R (expert opinion). Mayo Clinic, Rochester, Minn. June 8, 2016.
15. Floyd J, et al. Cardiotoxicity of nonanthracycline cancer chemotherapy drugs. <https://www.uptodate.com/contents/search>. Accessed Feb. 7, 2018.
16. Marks LB, et al. Cardiotoxicity of radiation therapy for breast cancer and other malignancies. <https://www.uptodate.com/contents/search>. Accessed Feb. 7, 2018.

Feb. 23, 2018

Original article: <http://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/heart-disease/ART-20046167>

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Women and Heart Disease

Facts on Women and Heart Disease

- Heart disease is the leading cause of death for women in the United States, killing 289,758 women in 2013—that's about 1 in every 4 female deaths.¹
- Although heart disease is sometimes thought of as a “man’s disease,” around the same number of women and men die each year of heart disease in the United States. Despite increases in awareness over the past decade, only 54% of women recognize that heart disease is their number 1 killer.²
- Heart disease is the leading cause of death for African American and white women in the United States. Among Hispanic women, heart disease and cancer cause roughly the same number of deaths each year. For American Indian or Alaska Native and Asian or Pacific Islander women, heart disease is second only to cancer.³
- About 5.8% of all white women, 7.6% of black women, and 5.6% of Mexican American women have coronary heart disease.⁴
- Almost two-thirds (64%) of women who die suddenly of coronary heart disease have no previous symptoms.⁴ Even if you have no symptoms, you may still be at risk for heart disease.

Symptoms

While some women have no symptoms, others experience angina (dull, heavy to sharp chest pain or discomfort), pain in the neck/jaw/throat or pain in the upper abdomen or back. These may occur during rest, begin during physical activity, or be triggered by mental stress.⁶

Women are more likely to describe chest pain that is sharp, burning and more frequently have pain in the neck, jaw, throat, abdomen or back.⁶

Sometimes heart disease may be silent and not diagnosed until a woman experiences signs or symptoms of a heart attack, heart failure, an arrhythmia, or stroke.

These symptoms may include

- Heart Attack: Chest pain or discomfort, upper back pain, indigestion, heartburn, nausea/vomiting, extreme fatigue, upper body discomfort, and shortness of breath.
- Arrhythmia: Fluttering feelings in the chest (palpitations).⁶
- Heart Failure: Shortness of breath, fatigue, swelling of the feet/ankles/legs/abdomen.
- Stroke: Sudden weakness, paralysis (inability to move) or numbness of the face/arms/legs, especially on one side of the body. Other symptoms may include: confusion, trouble speaking or understanding speech, difficulty seeing in one or both eyes, shortness of breath, dizziness, loss of balance or coordination, loss of consciousness, or sudden and severe headache.⁷

Risk Factors

High blood pressure, high LDL cholesterol, and smoking are key risk factors for heart disease. About half of Americans (49%) have at least one of these three risk factors.⁵

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

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

Screening

To reduce your chances of getting heart disease it's important to

- Know your blood pressure. Having uncontrolled blood pressure can result in heart disease. High blood pressure has no symptoms so it's important to have your blood pressure checked regularly.
- Talk to your healthcare provider about whether you should be tested for diabetes. Having uncontrolled diabetes raises your chances of heart disease.
- Quit smoking.
- Discuss checking your cholesterol and triglycerides with your healthcare provider.
- Make healthy food choices. Being overweight and obese raises your risk of heart disease.
- Limit alcohol intake to one drink a day.
- Lower your stress level and find healthy ways to cope with stress.

CDC's Public Health Efforts Related to Heart Disease

- [State Public Health Actions to Prevent and Control Chronic Diseases](#)
- [Million Hearts®](#)
- [WISEWOMAN](#)

For More Information

For more information on women and heart disease, visit the following Web sites—

- [Centers for Disease Control and Prevention](#)
- [U.S. Department of Health and Human Services, Office on Women's Health](#)
- [American Heart Association](#)
- [National Heart, Lung, and Blood Institute](#)

References

1. Xu, JQ, Murphy, SL., Kochanek, KD, Bastian, BA. [Deaths: Final data for 2013](#)[PDF-7.3M]. National Vital Statistics Report. 2016;64(2).
2. Mosca L, Mochari-Greenberger H, Dolor RJ, Newby LK, Robb KJ. Twelve-year follow-up of American women's awareness of cardiovascular disease risk and barriers to heart health. *Circulation: Cardiovascular Quality Outcomes*. 2010;3:120-7.
3. Heron M. [Deaths: Leading causes for 2008](#)[PDF-2.7M]. National vital statistics reports. 2012;60(6).
4. Roger VL, Go AS, Lloyd-Jones DM, Benjamin EJ, Berry JD, Borden WB, et al. [Heart disease and stroke statistics—2012 update: a report from the American Heart Association](#). *Circulation*. 2012;125(1):e2–220.
5. CDC. [Million Hearts: strategies to reduce the prevalence of leading cardiovascular disease risk factors](#). United States, 2011. *MMWR* 2011;60(36): 1248–51.
6. National Heart, Lung and Blood Institute. What Are the Signs and Symptoms of Heart Disease? [cited 2013 July 19, 2013]; Available from: www.nhlbi.nih.gov/health/health-topics/hdw/signs.html.
7. National Heart Lung and Blood Institute. What are the Signs and Symptoms of a Stroke? [cited 2013 July 19, 2013]; Available from: www.nhlbi.nih.gov/health/health-topics/topics/stroke/signs.html.
8. U.S. Department of Health and Human Services, Office on Women's Health. Heart Disease: Frequently Asked Questions. 2009. [cited 2013 July 19, 2013]; Available from: <http://www.womenshealth.gov/publications/our-publications/fact-sheet/heart-disease.pdf>[PDF-1.7M].



Heart Attack Symptoms in Women

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Heart Attack Signs in Women

1. Uncomfortable pressure, squeezing, fullness or pain in the center of your chest. It lasts more than a few minutes, or goes away and comes back.
2. Pain or discomfort in one or both arms, the back, neck, jaw or stomach.
3. Shortness of breath with or without chest discomfort.
4. Other signs such as breaking out in a cold sweat, nausea or lightheadedness.
5. As with men, women's most common heart attack symptom is [chest pain](#) or discomfort. But women are somewhat more likely than men to experience some of the other common symptoms, particularly shortness of breath, nausea/vomiting and back or jaw pain.

If you have any of these signs, call 9-1-1 and get to a hospital right away.

We've all seen the movie scenes where a man gasps, clutches his chest and falls to the ground. In reality, a heart attack victim could easily be a woman, and the scene may not be that dramatic.

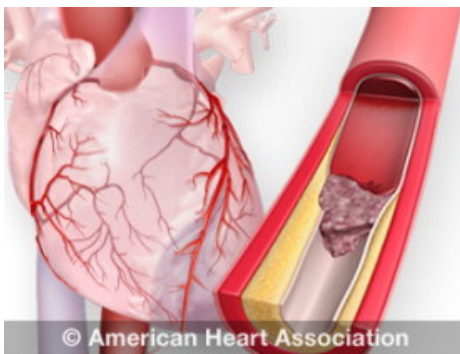
"Although men and women can experience chest pressure that feels like an elephant sitting across the chest, women can experience a heart attack without chest pressure," said Nieca Goldberg, M.D., medical director for the Joan H. Tisch Center for Women's Health at NYU's Langone Medical Center and an American Heart Association volunteer. "Instead they may experience shortness of breath, pressure or pain in the lower chest or upper abdomen, dizziness, lightheadedness or [fainting](#), upper back pressure or extreme fatigue."

Even when the signs are subtle, the consequences can be deadly, especially if the person doesn't get help right away.

'I thought I had the flu'

Even though [heart disease](#) is the No. 1 killer of women in the United States, women often chalk up the symptoms to less life-threatening conditions like acid reflux, the flu or normal aging.

"They do this because they are scared and because they put their families first," Goldberg said. "There are still many women who are shocked that they could be having a heart attack."



A [heart attack](#) strikes someone about every 43 seconds. It occurs when the blood flow that brings oxygen to the heart muscle is severely reduced or cut off completely. This happens because the arteries that supply the heart with blood can slowly narrow from a buildup of fat, [cholesterol](#) and other substances (plaque).

[Watch an animation of a heart attack.](#)

Many women think the signs of a heart attack are unmistakable — the image of the elephant comes to mind — but in fact they can be subtler and sometimes confusing.

You could feel so short of breath, "as though you ran a marathon, but you haven't made a move," Goldberg said.

Some women experiencing a heart attack describe upper back pressure that feels like squeezing or a rope being tied around them, Goldberg said. Dizziness, lightheadedness or actually fainting are other symptoms to look for.

"Many women I see take an aspirin if they think they are having a heart attack and never call 9-1-1," Goldberg said. "But if they think about taking an aspirin for their heart attack, they should also call 9-1-1."

Take care of yourself

Heart disease is preventable. Here are Goldberg's top tips:

- Schedule an appointment with your healthcare provider to learn your personal risk for heart disease.
- [Quit smoking](#). Did you know that just one year after you quit, you'll cut your risk of [coronary heart disease](#) by 50 percent?
- Start an exercise program. Just [walking 30 minutes a day](#) can lower your risk for heart attack and stroke.
- Modify your family's diet if needed. Check out these [healthy cooking tips](#). You'll learn smart substitutions, healthy snacking ideas and better prep methods. For example, with poultry, use the leaner light meat (breasts) instead of the fatter dark meat (legs and thighs), and be sure to remove the skin.

Heart Attack

• [Home](#)

• [About Heart Attacks](#)

- [Acute Coronary Syndrome \(ACS\)](#)
- [Heart Attack vs. Cardiac Arrest](#)
- [Coronary Artery Dissection: Not Just a Heart Attack](#)

• [Warning Signs of a Heart Attack](#)

- [Heart Attack Symptoms in Women](#)
- ["Can you recognize a heart attack?" Quiz](#)

• [Understand Your Risks to Prevent a Heart Attack](#)

• [Diagnosing a Heart Attack](#)

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- [Menopause and Heart Disease](#)

This content was last reviewed July 2015.

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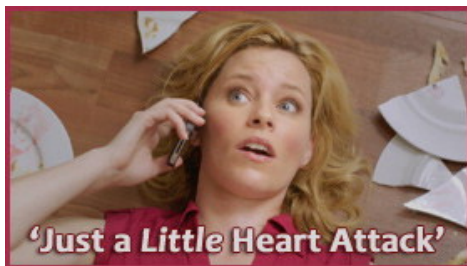
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View our first-ever short film ([opens in new window](#)) by Elizabeth Banks and share with the women you love.

*All health/medical information on this website has been reviewed and approved by the American Heart Association, based on scientific research and American Heart Association guidelines. [Use this link](#) for more information on our content editorial process.

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This site complies with the [HONcode standard for trustworthy health information](#):

[verify here.](#)

Know Your Numbers?

They could just save your life.

01.

RISK FACTORS

WHAT YOU CAN & CAN'T CONTROL

Some risk factors you can't do anything about. But others you can treat, manage or control with the help of your healthcare provider. Those you can't change, like your **Family History**, are still important when assessing your risk for Heart Disease and Stroke.

Additional tools and resources for healthcare professionals can be found [here](#).



RISK FACTORS THAT CAN BE MANAGED

You can control or treat these risk factors with lifestyle changes and your healthcare provider's help:

- | High blood pressure
- | Smoking
- | High blood cholesterol
- | Lack of regular activity
- | Obesity or overweight
- | Diabetes



RISK FACTORS YOU CAN'T CONTROL

You can't change these risk factors:

- | Age
- | Gender
- | Heredity (family health history)
- | Race
- | Previous stroke or heart attack



TAKE THE RISK FACTORS
QUIZ



LEARN MORE ABOUT
WARNING SIGNS



TAKE THE RISK FACTORS
QUIZ
ESPAÑOL



LEARN MORE ABOUT
WARNING SIGNS
ESPAÑOL

02.





KNOW YOUR NUMBERS

Knowing your numbers is important! The American Heart Association recommends that you be aware of five key numbers: **Total Cholesterol**, **HDL (good) Cholesterol**, **Blood Pressure**, **Blood Sugar** and **Body Mass Index (BMI)**.

These numbers are important because they will allow you and your healthcare provider to determine your risk for developing Cardiovascular Disease by Atherosclerosis. This includes conditions such as Angina (chest pain), Heart Attack, Stroke (caused by Blood Clots) and Peripheral Artery Disease (PAD).

Learn about your health numbers by scheduling a Well-Woman Visit with your healthcare provider today. Learn more about Well-Woman Visits [here](#).

Ideal numbers for most adults are:

CATEGORY	IDEAL NUMBER (LESS THAN)
 TOTAL CHOLESTEROL / HDL(GOOD CHOLESTEROL)	GET YOUR CHOLESTEROL CHECKED AND TALK TO YOUR DOCTOR ABOUT YOUR NUMBERS AND HOW THEY IMPACT YOUR HDL (GOOD) CHOLESTEROL AND YOUR OVERALL RISK
 BLOOD PRESSURE	120 / 80 mm Hg
 FASTING BLOOD SUGAR	100 mg / dL
 BODY MASS INDEX (BMI)	25 kg / m ²

LIVE BETTER WITH LIFE'S SIMPLE 7. KNOW YOUR HEART SCORE.



My Life Check® was designed by the American Heart Association with the goal of improved health by educating the public on how best to live. These measures have one unique thing in common: any person can make these changes, the steps are not expensive to take and even modest improvements to your health will make a big difference. Start with one or two. This [simple, seven-step list](#) has been developed to deliver on the hope we all have--to live a long, productive healthy life.

MY HEART SCORE
ENGLISH

MY HEART SCORE
ESPAÑOL

03.

TAKE ACTION WITH LIFE'S SIMPLE

7



1. MANAGE BLOOD PRESSURE

High Blood Pressure is a major risk factor for Heart Disease and Stroke. When your Blood Pressure stays within healthy ranges, you reduce the strain on your heart, arteries, and kidneys, which keeps you healthier longer.

[LEARN HOW TO MANAGE YOUR BLOOD PRESSURE](#)



2. CONTROL CHOLESTEROL

High Cholesterol contributes to plaque, which can clog Arteries and lead to Heart Disease and Stroke. When you control your Cholesterol, you are giving your arteries their best chance to remain clear of blockages.

[LEARN HOW TO CONTROL YOUR CHOLESTEROL](#)



3. REDUCE BLOOD SUGAR

Most of the food we eat is turned into glucose (or blood sugar) that our bodies use for energy. Over time, high levels of Blood Sugar can damage your heart, kidneys, eyes, and nerves.

[LEARN HOW TO REDUCE YOUR BLOOD SUGAR](#)



4. GET ACTIVE

Living an active life is one of the most rewarding gifts you can give yourself and those you love. Simply put, daily physical activity increases your length and quality of life.

[LEARN HOW TO GET ACTIVE](#)



5. EAT BETTER

A healthy diet is one of your best weapons for fighting Cardiovascular Disease. When you eat a heart-healthy diet, you improve your chances for feeling good and staying healthy - for life!

[LEARN HOW TO EAT BETTER](#)



6. LOSE WEIGHT

When you shed extra fat and unnecessary pounds, you reduce the burden on your heart, lungs, blood vessels and skeleton. You give yourself the gift of active living, you lower your Blood Pressure and you help yourself feel better, too.

[LEARN HOW TO LOSE WEIGHT](#)



7. STOP SMOKING

Cigarette smokers have a higher risk of developing Cardiovascular Disease. If you smoke, quitting is the best thing you can do for your health.

[LEARN HOW TO STOP SMOKING](#)

What Are the Risk Factors for Heart Disease?

LOWER HEART DISEASE RISK

What Are the Risk Factors for Heart Disease?

[Back](#)

Risk factors are conditions or habits that make a person more likely to develop a disease. They can also increase the chances that an existing disease will get worse. Important risk factors for heart disease that you can do something about are:

- High blood pressure
- High blood cholesterol
- Diabetes and prediabetes
- Smoking
- Being overweight or obese
- Being physically inactive
- Having a family history of early heart disease
- Having a history of preeclampsia during pregnancy
- Unhealthy diet
- Age (55 or older for women)

Some risk factors, such as age and family history of early heart disease, can't be changed. For women, age becomes a risk factor at 55. After menopause, women are more apt to get heart disease, in part because their body's production of estrogen drops. Women who have gone through early menopause, either naturally or because they have had a hysterectomy, are twice as likely to develop heart disease as women of the same age who have not yet gone through menopause.

Another reason for the increasing risk is that middle age is a time when women tend to develop risk factors for heart disease. Family history of early heart disease is another risk factor that can't be changed. If your father or brother had a heart attack before age 55, or if your mother or sister had one before age 65, you are more likely to get heart disease yourself. Preeclampsia is another heart disease risk factor that you can't control. However, if you've had the condition, you should take extra care to try and control other heart disease risk factors.

You can make the changes gradually, one at a time. But making them is very important. Other women may wonder: If I have just one risk factor for heart disease—say, I'm overweight or I have high blood cholesterol—aren't I more or less "safe"? Absolutely not. Each risk factor greatly increases a woman's chance of developing heart disease. But having more than one risk factor is especially serious, because risk factors tend to "gang up" and worsen each other's effects. So, the message is clear: Every woman needs to take her heart disease risk seriously—and take action now to reduce that risk.

[HTTPS://WWW.NHLBI.NIH.GOV/HEALTH/EDUCATIONAL/HEARTTRUTH/LOWER-RISK/RISK-FACTORS.HTM](https://www.nhlbi.nih.gov/health/educational/hearttruth/lower-risk/risk-factors.htm)

How Do I Find Out if I Am at Risk for Heart Disease?

LOWER HEART DISEASE RISK



How Do I Find Out if I Am at Risk for Heart Disease?

[Back](#)

The first step toward heart health is becoming aware of your own personal risk for heart disease. Some risks, such as smoking cigarettes, are obvious: every woman knows whether or not she smokes. But other risk factors, such as high blood pressure or high blood cholesterol, generally don't have obvious signs or symptoms. So you'll need to gather some information to create your personal "heart profile."

You and Your Doctor: A Heart Healthy Partnership

A crucial step in determining your risk is to see your doctor for a thorough checkup. Your doctor can be an important partner in helping you set and reach goals for heart health. But don't wait for your doctor to mention heart disease or its risk factors. Many doctors don't routinely bring up the subject with women patients. Here are some tips for establishing good, clear communication between you and your doctor:

Speak up. Tell your doctor you want to keep your heart healthy and would like help in achieving that goal. Ask questions about your chances of developing heart disease and how you can lower your risk. See "[Questions To Ask Your Doctor](#)" on page 15 of [The Healthy Heart Handbook for Women](#)  (2.47MB). Also ask for tests that will determine your personal risk factors. (See "[Check It Out](#)"  (46KB) on page 16 of [The Healthy Heart Handbook for Women](#).)

Keep tabs on treatment. If you already are being treated for heart disease or heart disease risk factors, ask your doctor to review your treatment plan with you. Ask: Is what I'm doing in line with the latest recommendations? Are my treatments working? Are my risk factors under control? If your doctor recommends a medical procedure, ask about its benefits and risks. Find out if you will need to be hospitalized and for how long, and what to expect during the recovery period.

Be open. When your doctor asks you questions, answer as honestly and fully as you can. While certain topics may seem quite personal, discussing them openly can help your doctor find out your chances of developing heart disease. It can also help your doctor work with you to reduce your risk. If you already have heart disease, briefly describe each of your symptoms. Include when each symptom started, how often it happens, and whether it has been getting worse.

Keep it simple. If you don't understand something your doctor says, ask for an explanation in simple language. Be especially sure you understand how to take any medication you are given. If you are worried about understanding what the doctor says, or if you have trouble hearing, bring a friend or relative with you to your appointment. You may want to ask that person to write down the doctor's instructions for you.

[HTTPS://WWW.NHLBI.NIH.GOV/HEALTH/EDUCATIONAL/HEARTTRUTH/LOWER-RISK/FIND-OUT.HTM](https://www.nhlbi.nih.gov/health/educational/hearttruth/lower-risk/find-out.htm)

The American Heart Association's Diet and Lifestyle Recommendations



Updated: May 17, 2018

A healthy diet and lifestyle are your best weapons to fight cardiovascular disease. It's not as hard as you may think! Remember, it's the overall pattern of your choices that counts. Make the simple steps below part of your life for long-term benefits to your health and your heart.



Use up at least as many calories as you take in.

- Start by knowing how many calories you should be eating and drinking to maintain your weight. Nutrition and calorie information on food labels is typically based on a 2,000 calorie diet. You may need fewer or more calories depending on several factors including age, gender, and level of physical activity.
- If you are trying not to gain weight, don't eat more calories than you know you can burn up every day.
- Increase the amount and intensity of your physical activity to match the number of calories you take in.
- Aim for at least **150 minutes of moderate physical activity** or 75 minutes of vigorous physical activity – or an equal combination of both – each week.

Regular physical activity can help you maintain your weight, keep off weight that you lose and help you reach physical and cardiovascular fitness. If it's hard to schedule regular exercise sessions, try aiming for sessions of at least 10 minutes spread throughout the week.

If you would benefit from lowering your blood pressure or cholesterol, the American Heart Association recommends 40 minutes of aerobic exercise of moderate to vigorous intensity three to four times a week.

Eat a variety of nutritious foods from all the food groups.

You may be eating plenty of food, but your body may not be getting the nutrients it needs to be healthy. Nutrient-rich foods have minerals, protein, whole grains and other nutrients but are lower in calories. They may help you **control your weight**, cholesterol and blood pressure.

Eat an overall healthy dietary pattern that emphasizes:

- a variety of **fruits and vegetables**,
- **whole grains**,
- low-fat dairy products,
- skinless **poultry and non-fried fish**
- **nuts and legumes**
- **non-tropical vegetable oils**

Limit saturated fat, *trans* fat, sodium, red meat, **sweets and sugar-sweetened beverages**. If you choose to eat red meat, compare labels and select the leanest cuts available.

One of the diets that fits this pattern is the DASH (**Dietary Approaches to Stop Hypertension**) eating plan. Most healthy eating patterns can be adapted based on calorie requirements and personal and cultural food preferences.

Eat less of the nutrient-poor foods.

The right number of calories to eat each day is based on your age and physical activity level and whether you're trying to gain, lose or maintain your weight. You could use your daily allotment of calories on a few high-calorie foods and beverages, but you probably wouldn't get the nutrients your body needs to be healthy. Limit foods and beverages high in calories but low in nutrients. Also limit the amount of [saturated fat](#), [trans fat](#) and [sodium](#) you eat. [Read Nutrition Facts labels](#) carefully — the Nutrition Facts panel tells you the amount of healthy and unhealthy nutrients in a food or beverage.

As you make daily food choices, base your eating pattern on these recommendations:

- Eat a variety of [fresh, frozen and canned vegetables and fruits](#) without high-calorie sauces or added salt and sugars. Replace high-calorie foods with fruits and vegetables.
- Choose fiber-rich [whole grains](#) for most grain servings.
- Choose [poultry and fish](#) without skin and prepare them [in healthy ways](#) without added saturated and [trans fat](#). If you choose to eat meat, look for the leanest cuts available and prepare them in healthy and delicious ways.
- Eat at least 8 ounces of non-fried fish each week, which may be divided over two 3.5- to 4-ounce servings. Choose oily fish such as salmon, trout and herring, which are high in [omega-3 fatty acids](#).
- Select fat-free (skim) and low-fat (1%) dairy products.
- Avoid foods containing partially hydrogenated vegetable oils to reduce [trans fat](#) in your diet.
- Limit saturated fat and trans fat and replace them with the better fats, monounsaturated and polyunsaturated. If you need to lower your blood cholesterol, reduce saturated fat to no more than 5 to 6 percent of total calories. For someone eating 2,000 calories a day, that's about 13 grams of saturated fat.
- Cut back on beverages and foods with [added sugars](#).
- Choose foods with less sodium and prepare foods with little or no salt. To lower [blood pressure](#), aim to eat no more than 2,400 milligrams of [sodium](#) per day. Reducing daily intake to 1,500 mg is desirable because it can lower blood pressure even further. If you can't meet these goals right now, even [reducing sodium intake](#) by 1,000 mg per day can benefit blood pressure.
- If you drink [alcohol](#), drink in moderation. That means no more than one drink per day if you're a woman and no more than two drinks per day if you're a man.
- Follow the American Heart Association recommendations when you eat out, and keep an eye on your [portion sizes](#).

Also, don't smoke tobacco — and avoid secondhand smoke.

http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Nutrition/The-American-Heart-Associations-Diet-and-Lifestyle-Recommendations_UCM_305855_Article.jsp#main

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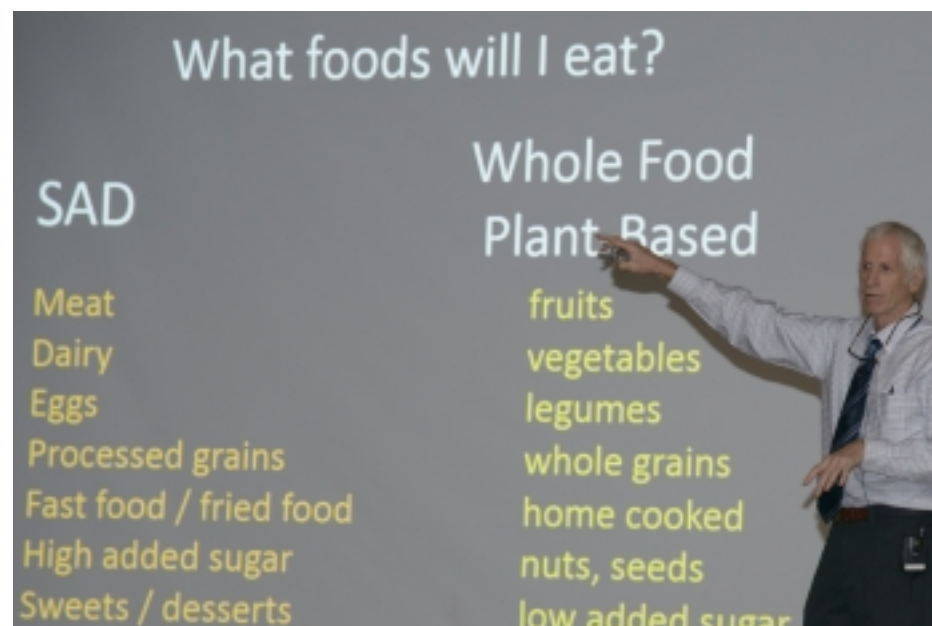
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One-Page Guide to a Heart-Healthy Diet

Do you find the U.S. Dietary Guidelines lacking in specifics on foods to eat or avoid? You're not alone. To help, [Charles Katzenberg, MD \(http://heart.arizona.edu/faculty/faculty_2861\)](http://heart.arizona.edu/faculty/faculty_2861), compiled a one-page list of heart-healthy foods as part of his [Heart Series Dietary Guidelines: \(http://www.heartseries.org/\)](http://www.heartseries.org/)

Walk towards a plant-based diet

1. Real food – meaning it isn't processed
2. Whole food – you can recognize what it is
3. Whole grain breads and pasta, brown rice - multigrain does not mean **whole** grain
4. Legumes – beans, lentils, peanuts, peas
5. Vegetables – fresh or frozen
6. Fruit (whole, not juice)
7. Water
8. Unsweetened drinks from soy, almonds, rice, or flax
9. Quinoa, Chia, Amaranth, nuts, seeds
10. Broiled, baked, steamed, raw
11. Fiber – 25+ grams/day (read the Nutrition Facts label)
12. Be aware of calorie content and portion sizes



Run away from the Western Diet aka Standard American Diet (SAD)

1. Processed food – packaged (crackers, chips, cookies, cake, cereal)
2. Processed grains – white bread, white rice, pasta
3. Trans fats (hydrogenated or interesterified oils – read the ingredients)
4. Processed meat – hot dogs, sausage, lunch meats - turkey, chicken, ham
5. Meat – especially beef, but also pork, lamb, poultry
6. Added sugars – read the ingredients (high fructose corn syrup)
7. Added fats – read the ingredients (plant or animal-derived oils, such as soybean oil or lard)
8. Saturated fats (predominantly in meat and dairy)
9. Fruit juices or soda
10. Fried anything
11. Excess calories, portion sizes, second helpings, grazing, fast foods

Here's a summary of current U.S. Dietary Guidelines and Dr. Katzenberg's simplified translation:

- **“Less than 10% of total calories from saturated fat.”** Translation: decrease intake of all meat (beef, turkey, chicken, pork, lamb) and dairy (milk, butter, cheese)
- **“Less than 10% of total calories from added sugar.”** Translation: decrease soda, fruit juice, and food with added sugar (identified in the nutrition facts label and under ingredients)
- **“Decrease saturated fat and added sugar.”** Translation: decrease foods that are processed and put in packages; cakes, cookies, crackers, ice cream, candy

Dr. Katzenberg is a board-certified cardiologist and clinical professor of medicine at the University of Arizona College of Medicine - Tucson and Sarver Heart Center. For more than 20 years, he has offered the [Heart Series \(http://heartseries.org/\)](http://heartseries.org/), a 12-week intensive program designed to give people the tools they need to improve their overall health and prevent and reduce cardiovascular disease.

For physician appointment information, please call 520-MyHeart (694-3278) or 520-626-2000.

For more health information, please visit our [Heart Health page](http://heart.arizona.edu/heart-health). (<http://heart.arizona.edu/heart-health>)

If you appreciate the content found on our website, please consider a [donation to the Sarver Heart Center](http://heart.arizona.edu/giving). (<http://heart.arizona.edu/giving>)

Heart Healthy Recipes

Believe it or not, eating heart healthy can be equally as delicious as it is good for your body. And if you could save your heart by improving your diet, wouldn't you at least want to give it a try?

There's a common misconception that anything described as healthy is lacking in flavor and satisfaction. To add insult to injury, there's also an automatic assumption that healthy foods are unaffordable. The truth is, there are plenty of creative ways to make a tasty, heart-healthy dish. And you don't have to be a master chef to whip one up, and do it well.

Check out our collection of Go Red recipes below and kick-start your new culinary prowess. Once you start eating this way, you may wonder why you didn't start sooner. And before you know it, you'll be coming up with your own inspired creations. Search for more [delicious recipes from the American Heart Association](#).

Skillet Ham Hash

Ingredients

4 Servings

+ 2 tsp. **olive oil**

+ 1 large **green bell pepper** (diced)

+ 1 large **red bell pepper** (diced)

+ 1 medium **onion** (diced)

+ 1/2 cup lower-sodium, low-fat, diced **ham** (about 4 ounces), all visible fat discarded




+ 3 cups frozen, fat-free southern-style diced **hash brown potatoes**, thawed

+ 1/2 tsp. salt-free **Cajun or Creole seasoning blend**

+ 2 Tbsp. chopped, fresh **parsley**


+ 1/4 tsp. **salt**

+ 1/4 tsp. **pepper**

	205	Calories per serving
	0.5 g	Sat. Fat per serving
	421 mg	Sodium per serving

[VIEW FULL NUTRITION INFO](#)

Directions

Tip:  Click on step to mark as complete.

- 1** In a large nonstick skillet, heat the oil over medium heat, swirling to coat the bottom. Cook the bell peppers and onion for 4 to 5 minutes, or until the onion is soft and the bell pepper is tender, stirring occasionally. Stir in the ham. Cook for 1 to 2 minutes, or until heated through, stirring occasionally.
- 2** Stir in the hash browns and seasoning blend. Cook without stirring for 4 minutes, or until the bottom is golden brown. Stir (the golden-brown pieces will be redistributed). Cook without stirring for 4 minutes, or until the bottom is golden brown and the mixture is heated through.
- 3** Stir in the parsley, salt, and pepper.

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Green Beans and Red Potatoes

Ingredients

6 Servings

+ 8 oz. **green beans** (trimmed, cut into 2-inch pieces)

+ 8 oz. **red potatoes** (cut into 1/2-inch cubes)

+ 2 Tbsp. chopped, fresh **parsley**

+ 1 1/2 tsp. light **tub margarine** (divided use)

+ 1 Tbsp. light **tub margarine**

+ 1/4 tsp. **salt**

+ 1/8 tsp. **pepper** (to taste)

+ 1/8 tsp. **paprika**



49

Calories
per serving



0.0 g

Sat. Fat
per serving



129 mg

Sodium
per serving

[VIEW FULL NUTRITION INFO](#)

Directions

Tip: Click on step to mark as complete.

1 In a large saucepan, steam the green beans and potatoes for 8 minutes, or until the potatoes are tender. Transfer to a medium serving bowl.

2 Add the remaining ingredients, stirring until the paprika is well combined.

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Broiled Asparagus Spears with Lemon

Ingredients


4 Servings

- + 2 medium **lemons** thinly sliced (about 8 slices each)
- + 1 lb medium **asparagus spears** (about 24)
- + **Cooking spray**
- + 2 tsp **olive oil** (extra virgin preferred)
- + 1/4 tsp **salt**
- + 1/8 tsp **pepper**

	51	Calories per serving
	0.5 g	Sat. Fat per serving
	145 mg	Sodium per serving

[VIEW FULL NUTRITION INFO](#)

Directions

Tip:  Click on step to mark as complete.

- 1 Preheat the broiler.
- 2 Line a broiler pan with aluminum foil. Arrange the lemon slices close together in a single layer in the pan. Arrange the asparagus spears in a single layer on the lemon slices. Lightly spray the asparagus with cooking spray.
- 3 Broil about 4 inches from the heat for 6 minutes, or until just tender-crisp.
- 4 Transfer the asparagus to a serving plate. Drizzle the oil over the asparagus. Sprinkle with the salt and pepper. Drizzle with any accumulated juices from the broiler pan. Place the lemon slices on or around the asparagus.




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Vegetable and Goat Cheese Phyllo Pie

Ingredients


4 Servings

- + **Cooking spray**
- + 1 Tbsp. **olive oil** (extra virgin preferred)
- + 4-5 medium **green onions** (about 1 cup), chopped
- + 2 medium **zucchini** (thinly sliced)
- + 10 oz. frozen, chopped **spinach** (thawed, squeezed dry)
- + 1/4 cup chopped, fresh **parsley**
- + 2 Tbsp. chopped, fresh **mint**
- + 2 medium **garlic cloves** (minced)
- + 1 cup fat-free **evaporated milk**
- + 1/2 cup **egg substitute**
- + 1/4 tsp. **pepper**
- + 1/8 tsp. ground **nutmeg**
- + 6 **phyllo dough sheets** (each 14 x 9 inches), thawed
- + 1 1/2 oz. soft **goat cheese**

	230	Calories per serving
	2.0 g	Sat. Fat per serving
	318 mg	Sodium per serving

[VIEW FULL NUTRITION INFO](#)

Directions

Tip:  Click on step to mark as complete.

- 1 Preheat the oven to 375°F. Lightly spray a 9-inch pie pan with cooking spray. Set aside.
- 2 In a large nonstick skillet, heat the oil over medium heat, swirling to coat the bottom. Cook the green onions for 2 minutes, or until softened, stirring frequently.
- 3 Stir in the zucchini. Cook for 4 minutes, or until beginning to brown, stirring frequently.
- 4 Stir in the spinach, parsley, mint, and garlic. Cook for 2 minutes, stirring frequently.
- 5 In a small bowl, whisk together the evaporated milk, egg substitute, pepper, and nutmeg. Set aside.
- 6 Working quickly and keeping the unused phyllo covered with damp paper towels to prevent drying, place one sheet of phyllo in the pie pan, gently pressing on the bottom and side of the pan, letting the ends overhang the pan. Repeat with the remaining phyllo, placing the sheets in a crisscross pattern.
- 7 Spoon the green onion mixture over the phyllo. Pour in the milk mixture, swirling if needed to cover the surface. Dot with the cheese.
- 8 Fold the ends of the phyllo toward the center of the pan, leaving a circle of the filling showing. Lightly spray the phyllo with cooking spray. Gently press the phyllo on the filling so the phyllo will hold its shape.
- 9 Bake for 30 to 40 minutes, or until golden. Transfer to a cooling rack and let cool for 15 minutes. Cut into wedges. Serve warm.

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Pork Tenderloin with Warm Fruit Salsa

Ingredients

1 teaspoon curry powder
1/2 teaspoon ground cumin
1/4 teaspoon ground allspice
1/4 teaspoon salt
1 1-pound pork tenderloin, all visible fat discarded
1 teaspoon canola or corn oil and 1 teaspoon
canola or corn oil, divided use
1/2 medium red bell pepper, finely chopped
1/4 cup red onion, finely chopped 1 medium fresh
jalapeño, seeds and ribs discarded, finely chopped
1 8-ounce can pineapple tidbits in their own juice,
drained well
1/4 cup golden raisins
2 tablespoons chopped cilantro

Nutrition Facts

Calories 251
Total Fat 9.0 g
Saturated Fat 3.0 g
Polyunsaturated Fat 1.0 g
Monounsaturated Fat 4.5 g
Cholesterol 78 mg
Sodium 206 mg
Carbohydrates 17 g
Fiber 2 g
Sugars 13 g
Protein 25 g
Dietary Exchanges: 1 fruit, 3
lean meat

Preparation

1. In a small bowl, stir together the curry powder, cumin, allspice, and salt. Sprinkle the mixture all over the pork. Using your fingertips, gently press the mixture so it adheres to the pork. Let stand for 15 minutes.
2. Meanwhile, preheat the oven to 425°F.
3. In a large nonstick skillet, heat 1 teaspoon oil over medium-high heat, swirling to coat the bottom. Brown the pork for about 1 minute on each side, 4 to 5 minutes total. Transfer to an 11 x 7 x 2-inch glass baking dish.
4. Roast for about 15 minutes, or until the pork registers 145°F on an instant-read thermometer. Transfer to a cutting board. Let stand for 3 minutes. Cut crosswise into slices, saving the juices.
5. While the pork stands, wipe the skillet with a damp paper towel. Heat the remaining 1 teaspoon oil over medium-high heat, swirling to coat the bottom. Cook the bell pepper, onion, and jalapeño for 2 to 3 minutes, or until tender-crisp, stirring frequently. Stir in the pineapple, raisins, and cilantro. Cook for 1 minute, or until thoroughly heated. Remove from the heat.
6. Just before serving, drizzle the pork with the reserved pan juices. Serve the fruit salsa on the side.

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Reduce your stress to protect your heart

A growing body of evidence suggests that psychological factors are — literally — heartfelt, and can contribute to cardiac risk.

Stress from challenging situations and events plays a significant role in cardiovascular symptoms and outcome, particularly heart attack risk. Depression, anxiety, anger, hostility, and social isolation also affect cardiovascular health. Each of these factors heightens your chances of developing heart problems. But emotional issues are often intertwined: people who have one commonly have another.

Many studies have documented that various forms of stress can take a toll on the heart:

Workplace stress. Women whose work is highly stressful have a 40% increased risk of heart disease (including heart attacks and the need for coronary artery surgery) compared with their less-stressed colleagues. These findings come from the Women's Health Study (WHS), which included more than 17,000 female health professionals.

For the study, researchers defined job strain as a combination of demand (the amount, pace, and difficulty of the work) and control (the ability to make work-related decisions or be creative at work). Earlier studies found similar trends among men: one documented a twofold higher risk of newly diagnosed heart disease among men who felt the rewards they received at work weren't compatible with their effort.

More information



[READ MORE](#)

Get your copy of *Diseases of the Heart*

This Special Health Report, *Diseases of the Heart*, brings you important information on various conditions that affect the heart, along with their causes,

Financial stress. Heart attacks rose as the stock market crashed, according to a 2010 report in *The American Journal of Cardiology*. Researchers at Duke University reviewed medical records for 11,590 people who had undergone testing for heart disease during a three-year period, and then compared monthly heart attack rates with stock market levels. Heart attacks increased steadily during one eight-month period — September 2008 to March 2009 — that was particularly bad for the stock market.

Caregiver stress. Women who cared for a disabled spouse for at least nine hours a week were significantly more at risk of having a heart attack or dying from heart disease compared with women who had no caregiving duties, according to findings from the Nurses' Health Study. This large study followed more than 54,000 female nurses over a four-year period.

Disaster-related stress. Following the terrorist attacks of Sept. 11, 2001, researchers asked 2,700 American adults to complete an online survey of physical and mental health. People who had high levels of stress immediately after the attacks were nearly twice as likely to develop high blood pressure and more than three times as likely to develop heart problems during the following two years compared with those who had low stress levels.

Earthquakes also trigger stress-related heart problems — not just in their immediate wake but for years afterward, some research has shown. Sudden cardiac deaths rose sharply immediately after the 1994 earthquake in the Los Angeles area, and hospitalization for heart attacks jumped on the day of the 1995 temblor near Kobe, Japan. A longer-term follow-up of another major earthquake in Japan (Niigata-Chuetsu in 2004) revealed that death rates from heart attacks rose during the three years after the quake compared with rates during the five years prior to the disaster.

Stress-easing strategies

While you can't change the world around you, the following lifestyle changes can help you minimize your stress level:

- **Get enough sleep.** Lack of sound sleep can affect your mood, mental alertness, energy level, and physical health.
- **Exercise.** Physical activity alleviates stress and reduces your risk of becoming depressed — and it is good for your all-around health.
- **Learn relaxation techniques.** Meditation, progressive muscle relaxation, guided imagery, deep breathing exercises, and yoga are mainstays of stress relief. Your local hospital or community center

symptoms, diagnosis, and prevention. You'll learn about major cardiovascular problems such as hardening of the arteries, peripheral artery disease, coronary artery disease, and more. You'll get details on atrial fibrillation, tachycardia, valve problems, aneurysms, and infections and inflammation of the heart, as well as rare conditions and congenital defects.

[Click here to read more »](#)

may offer meditation or yoga classes, or you can learn about these techniques from books or videos.

- **Learn time-management skills.** These skills can help you juggle work and family demands.
- **Confront stressful situations head-on.** Don't let stressful situations fester. Hold family problem-solving sessions and use negotiation skills at work.
- **Nurture yourself.** Treat yourself to a massage. Truly savor an experience: eat slowly, focusing on each bite of that orange, or soak up the warm rays of the sun or the scent of blooming flowers during a walk outdoors. Take a nap. Enjoy the sounds of music you find calming.

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No Time for Exercise? Here Are 7 Easy Ways to Move More!

Too busy to add more exercise to your busy schedule? When you can't seem to make time for a full workout, try these no-sweat ways to simply move more.

Learn how to Take 10

You found your keys. You found the motivation to clean out your closet. Now you can find 30 minutes in your day to get physically active! Don't worry, there are plenty of easy, no-cost ways to do it.

Think there's no way you can find the time? Good news: You don't have to do all 30 minutes at once. You can get health benefits even if you split it into two or three 10- to 15-minute segments a day.

7 no-brainer ways to boost your activity level

- 1. Grab the leash and walk your dog.** Your body — and your pooch — will thank you!
- 2. Take your kid (or your spouse) for a walk.** It's an excellent way to get some face time without screens. Keep it fun by exploring new neighborhoods or turning your walk into a scavenger hunt.
- 3. Hit the mall.** Are you shivering (or sweating) at the idea of walking outside? Take a fast stroll around the mall instead. Window shop, people watch and get active in a climate-controlled environment.
- 4. Walk and talk.** Even if you're glued to your phone for work calls, you don't have to be glued to your chair. Make it a habit to talk and walk. Some workplaces have walking paths to make it even easier to burn while you earn.
- 5. Tune into fitness.** Retrain your inner couch potato. Walk or jog in place, do yoga or lift weights, or walk on the treadmill at the gym while you watch your must-see TV shows.
- 6. Ditch the car.** Spare yourself the parking stress and log some more active time by parking farther away (or even leaving the car at home) and walking or biking to your destination.
- 7. Take the stairs.** The elevator may go up — but it doesn't make your heart rate climb. Take the stairs when you can, even if just for a floor or two. And don't ride the escalator — climb it. Those can be active steps, too!

When you start looking for them, you'll see lots of opportunities to be more active every day and get a few more steps in during everyday activities. Remember, every step counts!

Why is Walking the Most Popular Form of Exercise?



When it comes to simple ways to be healthy, walking is all the rage. Follow these tips getting started and learn more about fitness walking with the AHA.

You can get active in lots of ways, but walking is one of the easiest! For most people, it's safe, easy to stick with, and low- or no-cost. It doesn't require any special skills or equipment. For such a simple activity, it has so many benefits.

For every hour of brisk walking, life expectancy for some people may increase by two hours. Research has shown that walking at least 150 minutes a week can help you:

- Reduce your risk of serious diseases like heart disease, stroke, diabetes and cancer.
 - Improve your blood pressure, blood sugar and blood [cholesterol](#) levels.
 - [Increase your energy](#) and stamina.
 - Improve your mental and emotional well-being.
 - Boost bone strength and reduce your risk of osteoporosis.
 - [Prevent weight gain](#).
-

If 150 minutes sounds like a lot, remember that **even short 10-minute activity sessions can be added up** over the week to reach this goal. And it's easy to fit in 10 minutes of walking a few times a day.

Walking vs. Running

Did you know more Americans walk for fitness than run? Maybe you're not that into running. Or maybe you've had an injury and can't run anymore. Then just walk — every step counts. In fact, walking briskly can help your health as much as running, according to a 2013 research study.

How to walk for fitness

- **Gear up.** All you need to get started are comfortable clothes and supportive shoes. Keep your cool by layering clothing, because exercise raises your body's temperature. Shoes designed for walking or running are best, but not required. Just make sure you have a little wiggle room (about half an inch) between your longest toe and the end of the shoe. Avoid cotton socks because they retain moisture and can lead to blisters. (Who knew?!)
- **Easy does it.** If you're out of shape, begin with short distances. Start with a stroll that feels comfortable (perhaps 10-15 minutes) and gradually increase your time or distance. If it's easier on your body and your schedule, stick with a couple of 10- to 20-minute walks a day instead of one long walk.
- **Focus on form.** Keep your head lifted (no texting!), abs engaged and shoulders relaxed. Swing your arms naturally. Avoid carrying heavy items or hand weights because they can put extra stress on your elbows and shoulders – try a backpack instead. Stick to a comfortable, natural stride.
- **Breathe.** If you can't talk or catch your breath while walking, slow down. At first, forget about speed. Just get out there and walk!
- **Pick up the pace.** To warm up, walk at an easy pace for the first several minutes. Then gradually increase your speed.
- **Add variety and challenge.** Try brisk intervals. For example, walk one block fast, two blocks slow and repeat several times. Over time you'll be able to add more fast intervals with shorter recovery periods. Walking hills or stairs is a great way to increase muscle tone and burn more calories.
- **Stretch.** The end of your walk is a great time to stretch since your body is warmed up. Stretch your hamstrings, calves, chest, shoulders and back. Hold each stretch for 15 to 30 seconds.
- **Track your progress.** Fit walking into your schedule whenever you can. That may mean three 10-minute walks a day. When you can fit it in, longer walks will help you improve your stamina. Just remember your overall goal is at least 150 minutes each week.

Stay safe while walking

- **Be alert.** Listening to music while you walk can help keep you energized. And making phone calls is a good way to multitask. But if you use headphones, keep the volume low and watch out for traffic that you may not hear. Don't text or stare at your device while walking, so you can keep your eyes on the road.
- **Stand out.** Wear light colors or reflective clothing and carry a flashlight or glow stick (it adds to the fun!) if you walk when visibility is low.
- **Be street smart.** Walking on sidewalks is best, but if you have to walk on the street, stick to streets with lower speed limits and make sure drivers can see you.
- **Know the neighborhood.** Note which businesses are open when you'll be walking and the location of emergency telephones. Walk on well-traveled streets rather than taking shortcuts through alleys or parking lots.
- **Stick together.** Walk with a partner or in a group. Or bring your dog along -- you'll both get healthier.
- **Listen to your body.** If you have foot, knee, hip or back pain when walking, STOP and check with your doctor to find out the cause. You may need different shoes or another form of activity like cycling or water exercise. But don't give up! Find the activity that's right for you.

Just Walk

Maybe you haven't been active for a while. No problem! Just get started. It's not all or nothing... it's step by step. Even if you're already active, here are some easy ways you can add more steps into your day:

- Grab the leash and take the dog out for a walk.
- Walk the kids to the park or playground.
- Forget about rock star parking. Park a bit farther from the entrance to your workplace, school, grocery store, restaurants, etc.
- Take the stairs instead of the elevator, even if just for one or two floors.
- Walk to a nearby restaurant for lunch or dinner instead of driving.
- Catch up with a friend by walking around the block while you chat on the phone.

Learn more:

- [Moderate or Vigorous – What's your level of intensity?](#)
- [No time for exercise? Try our Top 10 Tips to get more!](#)
- [AHA Physical Activity Recommendations for Adults](#)

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Fitness Basics



Wondering what you need to know to improve your physical fitness and help reduce your heart disease risk? Let's start with these fitness basics.

Physical activity is *anything* that makes you move your body and burn calories.

For people who would benefit from lowering their blood pressure or cholesterol, the American Heart Association recommends 40 minutes of aerobic exercise of moderate to vigorous intensity three to four times a week to lower the risk for **heart attack** and **stroke**.

Below are several key types of exercise that can all help you improve your level of fitness.

1. Strength and resistance training

Strength and resistance training are important elements of a good physical activity routine. The American Heart Association recommends strength training at least twice per week.

A well-rounded strength-training program provides the following benefits:

- Increased strength of bones, muscles and connective tissues (tendons and ligaments)
- Lower risk of injury
- Increased muscle mass, which makes it easier for your body to burn calories and thus **maintain a healthy weight**
- Better quality of life

2. Walking and running

Walking is a great way to get you moving with minimal impact on your body. It's also low-risk and easy to start. While the AHA recommends that adults get 150 minutes or more of moderate-intensity physical activity or 75 minutes of vigorous activity each week, even short 10 minute activity sessions can be added up over the week to reach this goal.

A regular walking program can also:

- Improve your **cholesterol** profile
- Lower blood pressure
- Increase your energy and stamina
- Boost bone strength
- Prevent weight gain

Do you want to **start jogging or running** but aren't sure how? Dr. Deborah Rohm Young, vice chair of the AHA's Physical Activity Subcommittee, encourages women to start by setting small goals. Begin by walking 15 minutes four times per week, Young suggests. "You can experience an increased sense of wellbeing almost immediately," she says. "From there, you can have more energy to do other things."

3. Yoga

Yoga is an ancient practice with potential mental and physical health benefits for people of all ages.

Practicing yoga—as part of an overall healthy lifestyle—can:

- Help lower **blood pressure**
- Increase lung capacity
- Improve respiratory function
- Boost circulation and
- Tone muscles
- Give you a sense of well-being while building strength

In addition, yoga poses require stretching, increasing flexibility.

Flexibility activities are an appropriate part of a physical activity program. Note however that yoga does not count toward the 150-minutes-per-week of recommended moderate activity. That's due in part because some forms of yoga do not raise the heart rate enough to achieve moderate intensity aerobic activity for a sustained period.

Try these **yoga moves to improve your heart health**.

Learn more about **different types of exercises**, including swimming and bicycling, to find what is right for you.

What Exercise is Right for Me?



Exercise is essential to living heart-healthy. Why? “Our bodies were designed to be physically active, and they don’t do well with long-term exposure to sedentary living. Lack of physical activity is a major risk factor for cardiovascular disease,” says Russell Pate, Ph.D., professor in the Department of Exercise at the University of South Carolina.

In fact, according to the [American Heart Association’s 2013 exercise standards](#), “Exercise can be viewed as a preventative medical treatment, ‘like a pill’ that should be taken on an almost daily basis.”

Physical activity recommendations

How much exercise do you need? The AHA recommends the following amounts of physical activity to maintain cardiovascular health:

For Overall Cardiovascular Health

- At least 30 minutes of moderate-intensity aerobic activity at least 5 days per week for a total of 150 minutes.

OR

- At least 25 minutes of vigorous aerobic activity at least 3 days per week for a total of 75 minutes; or a combination of moderate- and vigorous-intensity aerobic activity.

AND

- Moderate- to high-intensity muscle-strengthening activity at least 2 days per week for additional health benefits.

For Lowering Blood Pressure and Cholesterol

- An average 40 minutes of moderate- to vigorous-intensity aerobic activity 3 or 4 times per week.

Physical activity and calories

There are numerous ways you can exercise every day. Help determine what exercise is right for you using the following information on calories burned by type of workout.

Physical Activity and Calories

The chart below shows the approximate calories spent per hour by a 100-, 150- and 200- pound person doing a particular activity.

Activity	100 lb	150 lb	200 lb
Bicycling, 6 mph	160	240	312
Bicycling, 12 mph	270	410	534
Jogging, 7 mph	610	920	1,230
Jumping rope	500	750	1,000
Running 5.5 mph	440	660	962
Running, 10 mph	850	1,280	1,664
Swimming, 25 yds/min	185	275	358
Swimming, 50 yds/min	325	500	650
Tennis, singles	265	400	535
Walking, 2 mph	160	240	312
Walking, 3 mph	210	320	416
Walking, 4.5 mph	295	440	572

Walking, jogging and running

Do you want to [start jogging or running](#) but don't think you can motivate yourself? Dr. Deborah Rohm Young, vice chair of the AHA's Physical Activity Subcommittee, encourages women to start by setting small goals. Begin by walking 15 minutes four times per week, Young suggests. "You can experience an increased sense of wellbeing almost immediately," she says. "From there, you can have more energy to do other things."

More ways to workout

Almost any physical activity is better than none for your heart. Learn more ways to exercise to determine the type(s) of physical activity that suit you best:

- [Yoga](#)
- [Gardening](#)
- [At-home exercises](#)
- [Exercises with kids](#)
- [Strength training](#)
- [Exercises for seniors](#)
- [Exercises to increase bone density](#)

Learn more [heart healthy exercises](#) on Go Red For Women.

10 Tips for Daily Exercise



You found your keys. You found the motivation to clean out your closet. Now you've got to find 30 minutes in your day to get physically active — and there are plenty of easy, no-cost ways to do it.

Think you don't have time? You don't have to do all 30 minutes at once.

You'll get the same benefits if you divide your time into two or three 10- to 15-minute segments a day.

"Building physical activity back into our daily lives is one of the great public health challenges of this century," says Russell Pate, Ph.D., professor in the Department of Exercise at the University of South Carolina. "Our bodies were designed to be physically active, and they don't do well with long-term exposure to sedentary living. Lack of physical activity is a major risk factor for cardiovascular disease."

Here are some of Pate's tips for getting active:

1. Get out the leash and walk your dog.

It's a great activity for both man and man's best friend. Your heart — and your pooch — will thank you!

2. Take your child for a brisk walk.

It's an excellent way to get some one-on-one time (or one-on-three, depending on the size of your brood.) Spice up your routine by exploring new neighborhoods or turning your walk into a scavenger hunt.

3. Mall walk.

Are you sweating (or shivering) at the idea of walking outside? Take a brisk stroll around your local mall instead. Window shop, people watch and give your heart a workout in a climate-controlled environment.

4. Join a team.

Pick an activity you love and round up some friends. Team sports can be fun — and keep you motivated and accountable.

5. Walk and talk.

Even if you're glued to your phone for work calls, you don't have to be glued to your seat. Make it a habit to talk and walk. Some workplaces have walking paths to make it even easier to burn while you earn.

6. Tune into fitness during TV time.

Reject your inner couch potato. Walk, jog in place or use the treadmill at the gym while you watch your favorite 30-minute show.

7. Park and walk.

How many times have you circled the parking lot to find "the" spot? Spare yourself the stress and gain more energy by parking far away (or even in a remote lot) and walking farther to your destination.

8. Take the stairs.

The elevator may go up — but it doesn't make your heart rate climb. Take the stairs instead. You may huff and puff at first, but over time, your body will thank you.

9. Dance!

Do it in a ballroom, at a club or even in your living room. You'll burn calories and gain a new hobby.

10. Skip the cake, say goodbye to pie and take a walk after dinner.

You'll get a reward that's sweeter than dessert: more family time.

If these ideas don't work for you, find something that you enjoy. Ditching the excuses can be the first step to a healthier you. Of course, if you have an injury, talk to your doctor first to see if there's a low-impact exercise you can do or find out if you should wait until you're healed.

And here's more food for thought: "Our culture no longer requires us to be hunters and gathers, but our bodies still need the physical activity that is required by that way of life," Pate says. So check out these tips to get moving today!

Keep active with more [heart-healthy exercise](#) ideas on Go Red.

<https://www.goredforwomen.org/live-healthy/heart-healthy-exercises/10-tips-for-daily-exercise/>

10 Fitness Tips to Help Prevent Heart Disease



When it comes to preventing cardiovascular disease, fitness is a powerful weapon. That's because a **sedentary lifestyle** is one of the risk factors for heart disease.

According to Marla Mendelson, MD, cardiologist and medical director of the Program for Women's Cardiovascular Health at Northwestern's Bluhm Cardiovascular Institute in Chicago, Illinois, every woman should make fitness a top priority in her life. "Fitness works on several **risk factors**, keeping weight down, keeping cholesterol down, keeping blood pressure down," says Mendelson. "It actually makes the body more efficient in the extraction of oxygen, and therefore the heart doesn't have to work as hard."

Plus, she adds, it gets you up and moving – something most women in America could use more of. Here, Mendelson shares 10 tips for preventing heart disease through fitness.

1. Talk to your doctor

Before beginning a new routine, ask if you have any limitations and find out if there are types of exercise you should avoid.

2. Find an activity you enjoy

There are countless options out there that raise the heart rate – swimming, dancing, cycling, Zumba and more. While you want the activity to be strenuous, keep it at a level where you can hold a conversation while working out. Aim to exercise three to five hours a week.

3. Walk

Everyone on the planet should be **walking** at least 30 minutes every day. It doesn't have to be all at once – you can do three sets of 10 minutes or two sets of 15 minutes – but this keeps you moving and makes you less sedentary. Plus, it might even keep you from eating something that could raise your **cholesterol**.

4. Reap the rewards

Exercise probably has more benefits above the neck than below. It's a great stress reducer – far better than **smoking**, alcohol and chocolate. Remembering that can be a great motivator to stick with your routine.

5. Fit it into your schedule

Exercise has a half-life. The relaxing benefits, lowered blood pressure and other perks stick around for about 48 hours. After that, you'll need to get another exercise "fix" to keep the perks going.

6. Small steps add up

Working out doesn't have to be an event. It doesn't even have to involve changing your clothes. It can be as simple as walking around during your child's soccer game, rather than sitting in a chair and eating potato chips. Take the stairs instead of an escalator. Park further back at the mall. When you see opportunities to move, take advantage.

7. Set an example

Go on a family bike ride or a family walk. Turn date night into exercise night. Fitness can be contagious. Plus, it's more fun when others join in.

8. There is no exercise bank

So you say you ran a marathon two years ago? What did you do two days ago? The benefits of exercise don't last forever. You've got to keep replenishing your account.

9. Thin people need to exercise too

Those who aren't overweight are often the most resistant to exercise. But just because you don't have excess fat, doesn't mean you're in good shape. People of all sizes should make fitness a priority.

10. Fitness is not an issue of vanity

It's an issue of health. Many women struggle to make time for themselves to exercise because they equate getting in shape with appearance. If you broke your arm, you would go to physical therapy. If you have a cardiac problem and exercise is prescribed to you, it is just as important.

Kate Silver is an award-winning journalist based in Chicago. Her work has appeared in Washington Post, Men's Health, Chicago Tribune and other online and print publications.

Top Quick Heart-Healthy Fitness Tips



You might think that getting fit and boosting your heart health means spending hours upon hours at the gym, sweating and getting on machines that look more like torture devices than anything that's going to help you. Well, I'm here to tell you that's not true. In fact, reaping the heart-healthy benefits of exercise doesn't have to take a huge time commitment – nor does it have to be torturous. It can actually be quite fun!

Here are five fitness tips to get your ticker healthy and happy:

1. Start with activities you love

If you've had problems making exercise a regular part of your life, then I imagine you only think of **exercise** as something you have to do in the gym. But that's just not true! Things like walking, dancing in your living room, bowling and even cleaning the house can count as exercise as long as you're getting a little out of breath when you're doing them.

So sit down and make a list of all of the active things you do and find a way to make at least one of them a part of your day, every day. Then, after a few months of making those activities habits, try new ones or more traditional workouts like a group exercise class. As you get in the habit of being active and start to get more fit, you might just be amazed and what activities you like.

2. Embrace the power of 10

Think you can't get heart-health benefits from just 10-minute bouts of activity? Think again. Ten minutes of walking three times a day has been shown to lower **blood pressure** more effectively than a longer **30-minute bout of walking**. Something as simple as walking before work, over lunch and after dinner is a fabulous way to squeeze in exercise – no gym required!

3. It's not just about cardio

When people think of heart-healthy exercise, they generally think of aerobic or cardio activities like jogging. But did you know that strength training (think lifting weights or doing bodyweight exercises like push-ups and lunges) can improve the health of your ticker, too? When you lift weights at a moderate intensity, you get your heart rate up. This means that you're working both your muscular system and your cardiovascular system. And when you make your muscles stronger, you make your body stronger, which helps everything. So definitely do some resistance training a few times a week.

4. Use exercise to de-stress

Stress plays a critical role in heart health, and exercise is great at kicking stress to the curb. Learn to see exercise not as something that you *have* to do, but instead as something you *want* to do because it makes you feel good. While most workouts will pump up your feel-good endorphins, workouts like yoga, Pilates and Tai Chi are especially good for de-stressing and improving the mind-body connection. Try 'em!

5. Support your efforts with a healthy diet

Working out – as awesome as it is – is only part of the heart-health equation. Eating a **nutritious diet** that's rich in fruits, veggies, whole grains, lean proteins and healthy fats is key to overall health, along with helping to give you the energy you need to power through those workouts and your everyday life.

*Jennipher Walters is the co-founder of **FitBottomedGirls** and has several fitness credentials under her belt: She is an ACE-certified personal trainer, health coach, and advanced health and fitness specialist, and an AFAA-certified group exercise instructor. She has also written for numerous online publications including Shape magazine, Yahoo! Shine, SparkPeople, and Diets in Review.*

Abdominal Exercises to Strengthen Your Core



The abdominal region, or our core, is our bodies' powerhouse. Core exercises, which train the muscles in your pelvis, lower back, hips and abdomen to work together, can help improve balance, stability and overall fitness.

Four major abdominal muscles

The abdominal muscles are made up of four parts:

- Rectus abdominis: A long strip of muscles that runs vertically from the lower chest to the front of the pelvis responsible for forward flexion.
- Transverse abdominis: Sometimes referred to as the lower abs, it runs vertically near the rectus abdominis, protecting the internal organs.
- External obliques: The external oblique is the largest and most superficial abdominal muscle. It runs diagonally near the ribs and is responsible for rotation of the trunk.
- Internal obliques: The internal oblique is underneath the external oblique and runs in the opposite direction. It is primarily responsible for lateral flexion of the trunk.

Exercises to work out your abs, core

Abdominal crunches are often the go-to exercise to target the core; however, if done improperly, they can hurt your neck and/ or back. For alternative workout moves to crunches, here are three simple exercises:

In-and-Outs

These affect mostly the rectus abdominis.

- Start by having a seat on the floor.
- Bend your knees into your chest, wrapping your arms around them, and lift your feet off the floor.
- Focus on tightening your core as you open your arms and extend your legs fully in front of you, without letting your feet touch the floor.
- Bring the knees back into your chest and your arms around your knees to starting position.

Cherry Pickers

These focus mainly on the external obliques.

- Start in a seated position on the floor with knees bent into the chest and feet off the floor.
- Clasp both hands together in front of your chest.
- Keeping your knees where they are, focus on your core and reach your hands to the outside of your right hip and try to touch the floor with your knuckles.
- Quickly switch to the left side and repeat.
- Add resistance and intensity by holding a medicine ball, dumbbell or anything heavy but small lying around the house.

Seated Leg Raises

These tend to affect the hard-to-reach transverse abdominis.

- Again, start in the seated position on the floor, this time with the legs fully extended.
- Place the hands on the floor besides the hips, being careful not to go too far back behind the hips so as to keep the resistance in the abs and not the back.
- Now, take a deep breath. Upon exhale, activate your core muscles and lift both legs, being careful not to hold your breath.
- Slowly lower legs back to starting position (keyword being slowly, without harshly dropping the feet to the floor). As you will soon see, this is a small but significant movement.

You can repeat each move above about 10 to 20 times, then move on to the next exercise, or perform these three moves as part of a 30-minute routine.

30-minute abdominal routine

Try this 30-minute, ab-burning routine.

- Warm up for about five to 10 minutes alternating between jumping jacks, squats and side-bends.
- Sit on the floor and do 20 In-and-Outs followed by holding a plank for 30 seconds, then 20 Cherry Pickers followed by a 30-second plank, and 20 Seated Leg Raises followed by another 30-second plank. Rest for one minute.
- Repeat this set, except you will do 15 reps of each exercise and hold a 45-second plank after each one.
- The final set will consist of 10 reps of each exercise with one-minute planks after each.
- Take about five minutes to stretch afterward. If you're familiar with **yoga**, you can try a cobra pose or even upward dog. Otherwise, you can simply lay flat on your back with your legs extended straight and your arms reaching over your head. Try pushing your lower back into the floor to avoid hyper-flexing the spine.

Exercises to Increase Bone Density

Daily exercise not only helps safeguard our hearts, but also can help strengthen our bones against injury. In fact, the strength of our bones is directly related to living a life without injury. And while the best time for bone growth may be in early adolescence, it is never too late to focus on strengthening activities.

"There have been studies of nursing home residents that have gone through regimented and rigorous strengthening programs and achieved higher levels of bone density, even at advanced ages," says Dr. Deborah Rohm Young, chair of the American Heart Association's Physical Activity Subcommittee.

Cardio

The key, says Rohm Young, is to focus on exercises that use gravity, such as brisk running, walking, playing tennis, gardening and indoor housework. The American Heart Association recommends participating in aerobic activity such as swimming, muscle strengthening such as push-ups and bone strengthening activities, such as brisk walking or weight lifting exercises. The total should add up to at least 150 minutes each week for adults or at least 30 minutes on five days of the week.

Arm weight lifting

Weight lifting is a great exercise for increasing bone density, says Rohm Young. For elderly women, she recommends starting by lifting a can of soup.

"Pick up a can of peaches or soup and try doing 10 bicep curls," she suggests. "If that is easy, do it five more times. Don't stop until you feel some muscle fatigue."

If you don't have soup cans at home, try going to your local sports store and purchasing a few one- or two-pound weights.

Leg weight lifting

How can you strengthen the bones in your legs? Rohm Young recommends trying ankle weights, which you can also purchase at sports stores. These weights are usually encased in fabric and can comfortably fit around your ankles.

"Put your ankle weights on and sit in a stationary chair, one that doesn't have wheels," Rohm Young instructs. "Sit up straight with your legs bent, your feet comfortably touching the ground. Then bend at the knee and bring one foot out straight while the other foot is still down. Alternate legs for several reps until you feel a little tired."

Note: Don't walk around while wearing ankle weights because it can strain your muscles. Only use them when doing targeted exercises or with your doctor's approval.

Learn more [heart-healthy exercises](#) on Go Red.

<https://www.goredforwomen.org/live-healthy/heart-healthy-exercises/exercises-to-increase-bone-density/>

Health Benefits of Weight Training for Women



Some women may tend to shy away from lifting weights for fear of the effect it will have on their appearance. But the health benefits of muscle-strengthening include increased bone strength in addition to muscular fitness, and it can help you maintain muscle during a weight-loss program.

Despite the benefits of building muscle, many women desire a toned figure, but don't want to end up looking "buff."

The truth is, there isn't a huge risk of drastically increasing the size of women's muscles with weight training alone. The majority of women (and I'm sure there are exceptions) don't have the necessary hormones for that kind of growth.

The main hormone that contributes to increasing muscle size is testosterone, which is typically associated with the male body, but isn't generally as abundant in females. In order for a woman to develop "bodybuilder" muscles, it would be necessary to exceed the recommended amount of strength training, take hormones and focus intensely on increasing muscle mass. However, the average woman who lifts moderate weights will not experience that type of muscle growth.

Benefits of resistance and weight training

The fact is, weight training, also known as resistance training, is extremely important, not only for strengthening the body in general, but also for increasing bone density, which is an aspect that should concern all adult women.

Building muscle mass increases one's metabolic rate, which can aid in burning fat and maintaining a healthy weight. Besides lifting weights, examples of other resistance training include:

- Working with resistance bands
- Doing calisthenics that use body weight for resistance (such as push-ups, pull-ups, and sit-ups)
- Carrying heavy loads
- Heavy gardening (such as digging or hoeing)

So, if you want to lose weight, increase bone density, tone-up or simply gain strength, be sure to include resistance training in your regular exercise routine.

Conditions that Increase Risk for Heart Disease



Several medical conditions can increase your risk for heart disease. If you have one of these conditions, you can take steps to control it and lower your risk.

High Blood Pressure

[High blood pressure](#) is a major risk factor for heart disease. It is a medical condition that occurs when the pressure of the blood in your arteries and other blood vessels is too high. The high pressure, if not controlled, can affect your heart and other major organs of your body, including your kidneys and brain.

High blood pressure is often called a “silent killer” because many people do not notice symptoms to signal high blood pressure. Lowering blood pressure by changes in lifestyle or by medication can reduce your risk for heart disease and heart attack.

High Cholesterol

[Cholesterol](#) is a waxy, fat-like substance made by the liver or found in certain foods. Your liver makes enough for your body’s needs, but we often get more cholesterol from the foods we eat. If we take in more cholesterol than the body can use, the extra cholesterol can build up in the walls of the arteries, including those of the heart. This leads to narrowing of the arteries and can decrease the blood flow to the heart, brain, kidneys, and other parts of the body.

Some cholesterol is “good,” and some is “bad.” High cholesterol is the term used for high levels of low-density lipoprotein, or LDL, which are considered “bad” because they can lead to heart disease. A higher level of high-density lipoprotein cholesterol, or HDL, is considered “good” because it provides some protection against heart disease.

A blood test can detect the amount of cholesterol and triglycerides (a related kind of fat) in your blood.

Diabetes

[Diabetes mellitus](#) also increases the risk for heart disease. Your body needs glucose (sugar) for energy. Insulin is a hormone made in the pancreas that helps move glucose from the food you eat to your body’s cells. If you have diabetes, your body doesn’t make enough insulin, can’t use its own insulin as well as it should, or both.

Diabetes causes sugars to build up in the blood. The risk of death from heart disease for adults with diabetes is higher than adults who do not have diabetes.¹ Talk to your doctor about ways to [manage diabetes](#) and control other risk factors.

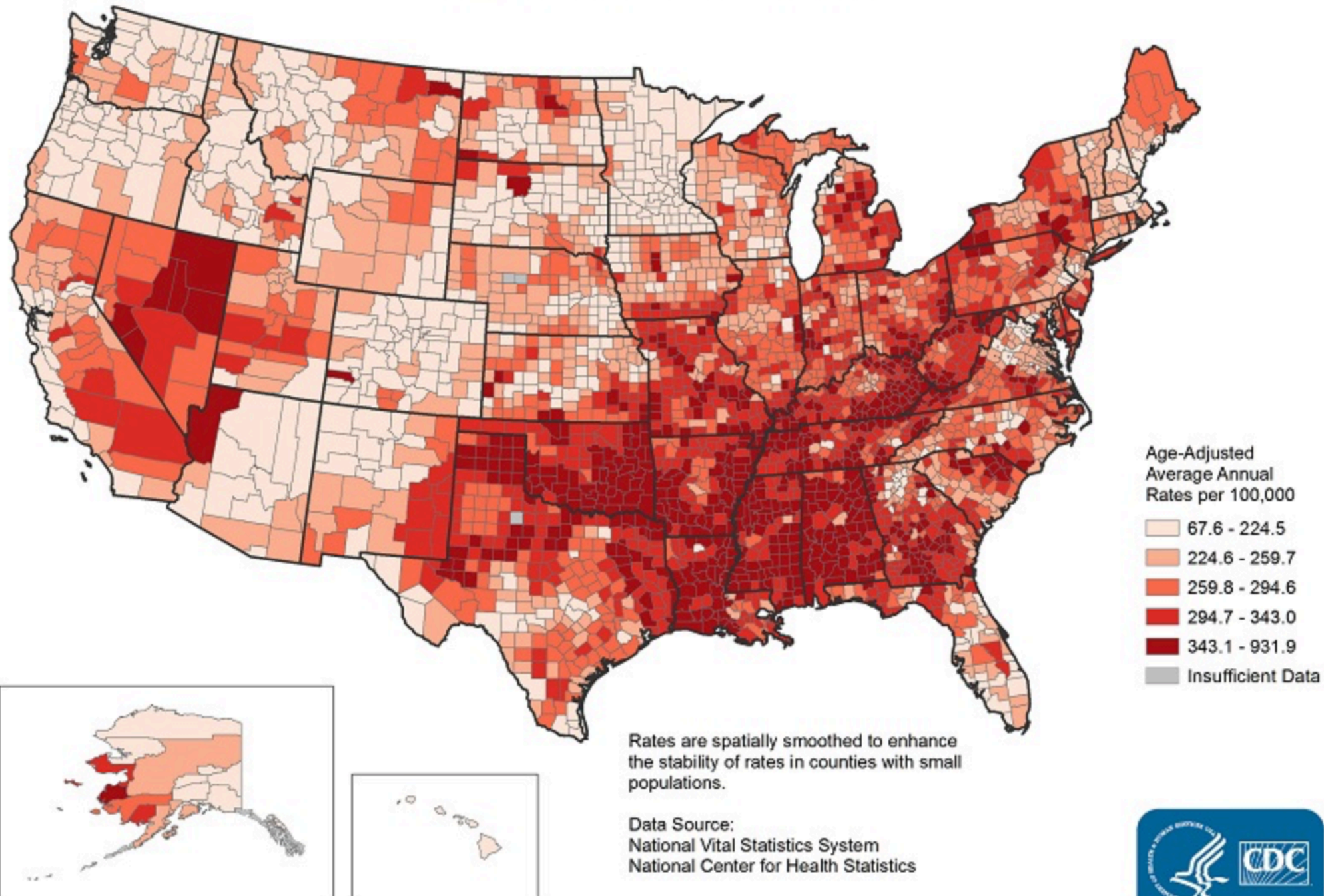
Reference

1. CDC. [National Diabetes Statistics Report, 2017](#). [PDF- 3 MB]. Atlanta, GA: U.S. Department of Health and Human Services, Centers for Disease Control and Preventions, 2017.




High blood pressure is major risk factor for heart disease. It is a condition that occurs when the pressure of the blood in the arteries is too high.

Heart Disease Death Rates, 2011-2013 Women, Ages 35+, by County



Heart Disease Facts



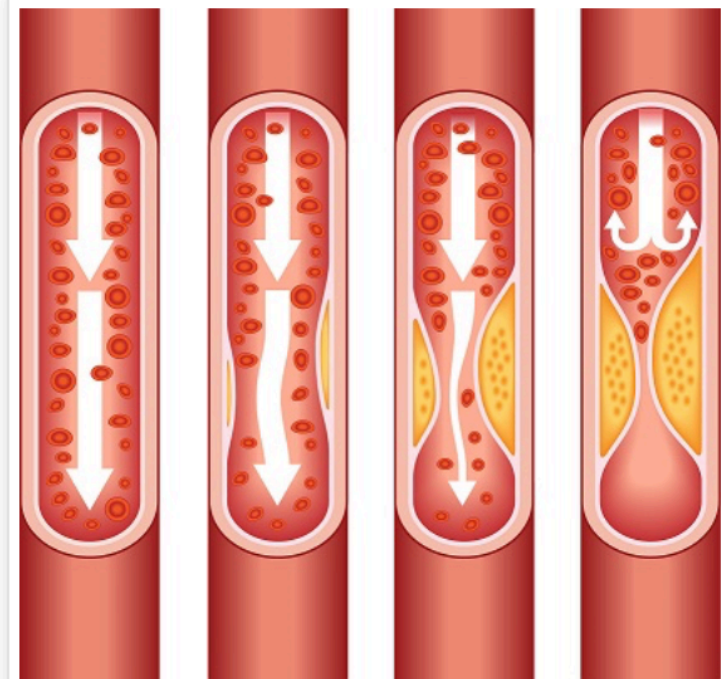
Learn more about heart disease and its risk factors. It's important for everyone to [know the facts about heart disease](#)  [PDF-243K].

Heart Disease in the United States

- About **610,000 people** die of heart disease in the United States every year—that's **1 in every 4 deaths**.¹
- Heart disease is the leading cause of death for both men and women. **More than half** of the deaths due to heart disease in 2009 were in men.¹
- [Coronary heart disease](#) (CHD) is the most common type of heart disease, killing over **370,000 people** annually.¹
- Every year about **735,000 Americans** have a [heart attack](#). Of these, 525,000 are a first heart attack and 210,000 happen in people who have already had a heart attack.²

Heart Disease Deaths Vary by Race and Ethnicity

Heart disease is the leading cause of death for people of most ethnicities in the United States, including African Americans, Hispanics, and whites. For American Indians or Alaska Natives and Asians or Pacific Islanders, heart disease is second only to cancer. Below are the percentages of all deaths caused by heart disease in 2008, listed by ethnicity.⁴



As plaque builds up in the arteries of a person with heart disease, the inside of the arteries begins to narrow, which lessens or blocks the flow of blood. Plaques can also rupture (break open) and when they do a blood clot can form on the plaque, blocking the flow of blood.

Race of Ethnic Group	% of Deaths
American Indians or Alaska Natives	18.4
Asians or Pacific Islanders	22.2
Non-Hispanic Blacks	23.8
Non-Hispanic Whites	23.8
All	23.5

Early Action is Important for Heart Attack

Know the warning [signs and symptoms of a heart attack](#) so that you can act fast if you or someone you know might be having a heart attack. The chances of survival are greater when emergency treatment begins quickly.

- In a 2005 survey, most respondents—92%—recognized chest pain as a symptom of a heart attack. **Only 27%** were aware of all major symptoms and knew to call 9-1-1 when someone was having a heart attack.⁵
- **About 47%** of sudden cardiac deaths occur outside a hospital. This suggests that many people with heart disease don't act on early warning signs.⁶

Heart attacks have several **major warning signs** and symptoms:

- Chest pain or discomfort.
- Upper body pain or discomfort in the arms, back, neck, jaw, or upper stomach.
- Shortness of breath.
- Nausea, lightheadedness, or cold sweats.



[^ Top of Page](#)

Americans at Risk for Heart Disease

[High blood pressure](#), [high cholesterol](#), and smoking are key [risk factors](#) for heart disease. About **half of Americans** (47%) have at least one of these three risk factors.⁷

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


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

[^ Top of Page](#)

CDC Fact Sheets Related to Heart Disease

- [Heart Disease Fact Sheet](#)
- [Men and Heart Disease](#)
- [Women and Heart Disease](#)
- [Atrial Fibrillation](#)
- [Cardiomyopathy](#)
- [Heart Failure](#)
- [Signs and Symptoms of a Heart Attack](#)
- [Aortic Aneurysm](#)

References

1. CDC, NCHS. Underlying Cause of Death 1999-2013 on [CDC WONDER Online Database](#), released 2015. Data are from the Multiple Cause of Death Files, 1999-2013, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed Feb. 3, 2015.
2. Mozaffarian D, Benjamin EJ, Go AS, et al. Heart disease and stroke statistics—2015 update: a report from the American Heart Association. *Circulation*. 2015;131:e29-322.
3. Heidenreich PA, Trogdon JG, Khavjou OA, et al. Forecasting the future of cardiovascular disease in the United States: a policy statement from the American Heart Association. *Circulation*. 2011;123:933-44. Epub 2011 Jan 24.
4. CDC. Deaths, percent of total deaths, and death rates for the 15 leading causes of death in 10-year age groups, by race and sex: United States, 2013.
5. CDC. [Disparities in Adult Awareness of Heart Attack Warning Signs and Symptoms—14 States, 2005](#). *MMWR*. 2008;57(7):175–179.
6. CDC. [State Specific Mortality from Sudden Cardiac Death: United States, 1999](#). *MMWR*. 2002;51(6):123–126.
7. Fryar CD, Chen T, Li X. [Prevalence of Uncontrolled Risk Factors for Cardiovascular Disease: United States, 1999–2010](#)  [PDF-323K]. NCHS data brief, no 103. Hyattsville, MD: National Center for Health Statistics. 2012.

Cardiovascular Disease & Diabetes

The following statistics speak loud and clear that there is a strong correlation between cardiovascular disease (CVD) and diabetes.

- At least 68 percent of people age 65 or older with diabetes die from some form of heart disease; and 16% die of stroke.
- Adults with diabetes are two to four times more likely to die from heart disease than adults without diabetes.
- The American Heart Association considers diabetes to be one of the seven major controllable risk factors for cardiovascular disease.

Why are people with diabetes at increased risk for CVD?

Diabetes is treatable, but even when glucose levels are under control it greatly increases the risk of heart disease and stroke. That's because people with diabetes, particularly type 2 diabetes, may have the following conditions that contribute to their risk for developing cardiovascular disease.

- **High blood pressure (hypertension)**
[High blood pressure](#) has long been recognized as a major risk factor for cardiovascular disease. Studies report a positive association between hypertension and insulin resistance. When patients have both hypertension and diabetes, which is a common combination, their risk for cardiovascular disease doubles.
- **Abnormal cholesterol and high triglycerides**
Patients with diabetes often have unhealthy [cholesterol](#) levels including high LDL ("bad") cholesterol, low HDL ("good") cholesterol, and high triglycerides. This triad of poor lipid counts often occurs in patients with premature coronary heart disease. It is also characteristic of a lipid disorder associated with insulin resistance called atherogenic dyslipidemia, or diabetic dyslipidemia in those patients with diabetes. Learn more about [cholesterol abnormalities](#) as they relate to diabetes.
- **Obesity**
Obesity is a major risk factor for cardiovascular disease and has been strongly associated with insulin resistance. [Weight loss](#) can improve cardiovascular risk, decrease insulin concentration and increase insulin sensitivity. Obesity and insulin resistance also have been associated with other risk factors, including high blood pressure.
- **Lack of physical activity**
Physical inactivity is another modifiable major risk factor for insulin resistance and cardiovascular disease. Exercising and losing weight can prevent or delay the onset of type 2 diabetes, reduce blood pressure and help reduce the risk for heart attack and stroke. It's likely that any type of moderate and/or vigorous intensity, aerobic [physical activity](#)—whether sports, household work, gardening or work-related physical activity—is similarly beneficial. For overall cardiovascular health, the American Heart Association recommends:
 - At least **30 minutes of moderate-intensity** aerobic activity at least **5 days per week for a total of 150****OR**
 - At least **25 minutes of vigorous** aerobic activity at least **3 days per week for a total of 75 minutes**; or a combination of moderate-and vigorous-intensity aerobic activity**AND**
 - Moderate-to high-intensity muscle-strengthening activity** at least **2 days per week** for additional health benefits.
- **Poorly controlled blood sugars (too high) or out of normal range**
Diabetes can cause blood sugar to rise to dangerous levels. [Medications](#) may be needed to manage blood sugar.
- **Smoking**
Smoking puts individuals, whether or not they have diabetes, at higher risk for heart disease and stroke. Learn how to [kick the habit](#).

Individuals with insulin resistance or diabetes in combination with one or more of these risk factors are at even greater risk of heart disease or stroke. However, by managing their risk factors, patients with diabetes may avoid or delay the development of heart and blood vessel disease. Your health care provider will do periodic testing to assess whether you have developed any of these risk factors associated with cardiovascular disease.

[HTTP://WWW.HEART.ORG/HEARTORG/CONDITIONS/MORE/DIABETES/WHYDIABETESMATTERS/CARDIOVASCULAR-DISEASE-DIABETES_UCM_313865_ARTICLE.JSP#.WXXEMY-ZM_U](http://www.heart.org/heartorg/conditions/more/diabetes/whydiabetesmatters/cardiovascular-disease-diabetes_ucm_313865_article.jsp#.wxxemy-zm_u)

National Diabetes Statistics Report, 2017

Estimates of Diabetes and Its Burden in the United States

Background

The *National Diabetes Statistics Report* is a periodic publication of the Centers for Disease Control and Prevention (CDC) that provides updated statistics about diabetes in the United States for a scientific audience. It includes information on prevalence and incidence of diabetes, prediabetes, risk factors for complications, acute and long-term complications, deaths, and costs. These data can help focus efforts to prevent and control diabetes across the United States. This report was previously known as the *National Diabetes Fact Sheet*.

Methods

The estimates in this document (unless otherwise noted) were derived from various data systems of CDC, the Indian Health Service (IHS), the Agency for Healthcare Research and Quality (AHRQ), the U.S. Census Bureau, and published studies. The estimated percentages and the total number of people with diabetes and prediabetes were derived from the National Health and Nutrition Examination Survey (NHANES), National Health Interview Survey (NHIS), IHS National Data Warehouse (NDW), Behavioral Risk Factor Surveillance System (BRFSS), United States Diabetes Surveillance System (USDSS), and U.S. resident population estimates.

Numbers and rates for acute and long-term complications of diabetes were derived from the National Inpatient Sample (NIS) and National Emergency Department Sample (NEDS), as well as NHIS. Diagnosed diabetes was determined by self-report among survey respondents and by diagnostic codes for American Indians and Alaska Natives who accessed IHS, tribal, or Urban Indian health facilities that submitted data to the IHS NDW.

Both fasting glucose and hemoglobin A1C (A1C) levels were used to derive estimates for undiagnosed diabetes and prediabetes. An alpha level of 0.05 was used when assessing statistical differences between groups.

Most estimates of diabetes in this report do not differentiate between type 1 and type 2 diabetes. However, because type 2 diabetes accounts for 90% to 95% of all diabetes cases, the data presented are likely to be more characteristic of type 2 diabetes. More detailed information about [data sources and methods](#) is available in the Appendix.



Fast Facts on Diabetes

30.3 million people have diabetes

(9.4% of the U.S. population)

Diagnosed

23.1 million people

Undiagnosed

7.2 million

(23.8% of people with diabetes are undiagnosed)

National Center for Chronic Disease Prevention and Health Promotion
Division of Diabetes Translation



Results

Prevalence of Both Diagnosed and Undiagnosed Diabetes

- An estimated 30.3 million people of all ages—or 9.4% of the U.S. population—had diabetes in 2015 ([Methods](#)).
- This total included 30.2 million adults aged 18 years or older (12.2% of all U.S. adults), of which 7.2 million (23.8%) were not aware of or did not report having diabetes (Table 1) ([Methods](#)).
- The percentage of adults with diabetes increased with age, reaching a high of 25.2% among those aged 65 years or older (Table 1).
- Compared to non-Hispanic whites, the age-adjusted prevalence of diagnosed and undiagnosed diabetes was higher among Asians, non-Hispanic blacks, and Hispanics during 2011–2014 (see [Table 1a](#) in the Appendix for more details).

Table 1. Estimated number and percentage of diagnosed and undiagnosed diabetes among adults aged ≥18 years, United States, 2015

Characteristic	Diagnosed diabetes No. in millions (95% CI) ^a	Undiagnosed diabetes No. in millions (95% CI) ^a	Total diabetes No. in millions (95% CI) ^a
Total	23.0 (21.1–25.1)	7.2 (6.0–8.6)	30.2 (27.9–32.7)
Age in years			
18–44	3.0 (2.6–3.6)	1.6 (1.1–2.3)	4.6 (3.8–5.5)
45–64	10.7 (9.3–12.2)	3.6 (2.8–4.6)	14.3 (12.7–16.1)
≥65	9.9 (9.0–11.0)	2.1 (1.4–3.0)	12.0 (10.7–13.4)
Sex			
Women	11.7 (10.5–13.1)	3.1 (2.4–4.1)	14.9 (13.5–16.4)
Men	11.3 (10.2–12.4)	4.0 (3.0–5.5)	15.3 (13.8–17.0)
	Percentage (95% CI) ^b	Percentage (95% CI) ^b	Percentage (95% CI) ^b
Total	9.3 (8.5–10.1)	2.9 (2.4–3.5)	12.2 (11.3–13.2)
Age in years			
18–44	2.6 (2.2–3.1)	1.3 (0.9–2.0)	4.0 (3.3–4.8)
45–64	12.7 (11.1–14.5)	4.3 (3.3–5.5)	17.0 (15.1–19.1)
≥65	20.8 (18.8–23.0)	4.4 (3.1–6.3)	25.2 (22.5–28.1)
Sex			
Women	9.2 (8.2–10.3)	2.5 (1.9–3.2)	11.7 (10.6–12.9)
Men	9.4 (8.5–10.3)	3.4 (2.5–4.6)	12.7 (11.5–14.1)

CI = confidence interval.

^a Numbers for subgroups may not add up to the total because of rounding.

^b Data are crude, not age-adjusted.

Data source: 2011–2014 National Health and Nutrition Examination Survey and 2015 U.S. Census Bureau data.

Prevalence of Diagnosed Diabetes

Among people of all ages, 2015 data indicated the following:

- An estimated 23.1 million people—or 7.2% of the U.S. population—had diagnosed diabetes ([Methods](#)) (see [Table 1b](#) in the Appendix for more details).
- This total included:
 - » 132,000 children and adolescents younger than age 18 years (0.18% of the total U.S. population younger than age 18 years).
 - » 193,000 children and adolescents younger than age 20 years (0.24% of the total U.S. population younger than age 20 years).
- About 5% of people with diabetes are estimated to have type 1 diabetes ([Methods](#)).

Among U.S. adults aged 18 years or older, age-adjusted data for 2013–2015 indicated the following:

- American Indians/Alaska Natives had the highest prevalence of diagnosed diabetes for both men (14.9%) and women (15.3%) (Figure 1) ([Methods](#)). Prevalence varied by region, from 6.0% among Alaska Natives to 22.2% among American Indians in certain areas of the Southwest.
- Overall, prevalence was higher among American Indians/Alaska Natives (15.1%), non-Hispanic blacks (12.7%), and people of Hispanic ethnicity (12.1%) than among non-Hispanic whites (7.4%) and Asians (8.0%) (see [Table 1c](#) in the Appendix for more details).
- Among people of Hispanic ethnicity, Mexicans had the highest prevalence (13.8%), followed by Puerto Ricans (12.0%), Cubans (9.0%), and Central/South Americans (8.5%) (see [Table 1c](#) in the Appendix for more details).
- Among Asians, Asian Indians had the highest prevalence (11.2%), followed by Filipinos (8.9%), and Chinese (4.3%). Other Asian groups had a prevalence of 8.5% (see [Table 1c](#) in the Appendix for more details).
- Prevalence varied significantly by education level, which is an indicator of socioeconomic status. Specifically, 12.6% of adults with less than a high school education had diagnosed diabetes versus 9.5% of those with a high school education and 7.2% of those with more than a high school education (see [Table 1c](#) in the Appendix for more details).



Figure 1. Estimated age-adjusted prevalence of diagnosed diabetes by race/ethnicity and sex among adults aged ≥18 years, United States, 2013–2015

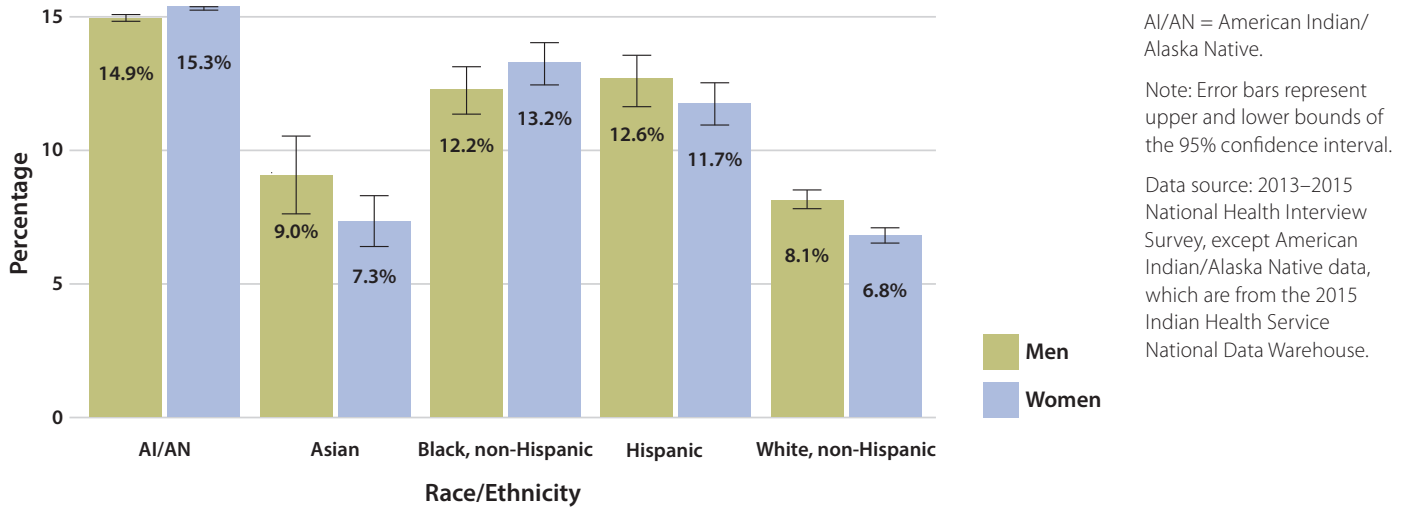
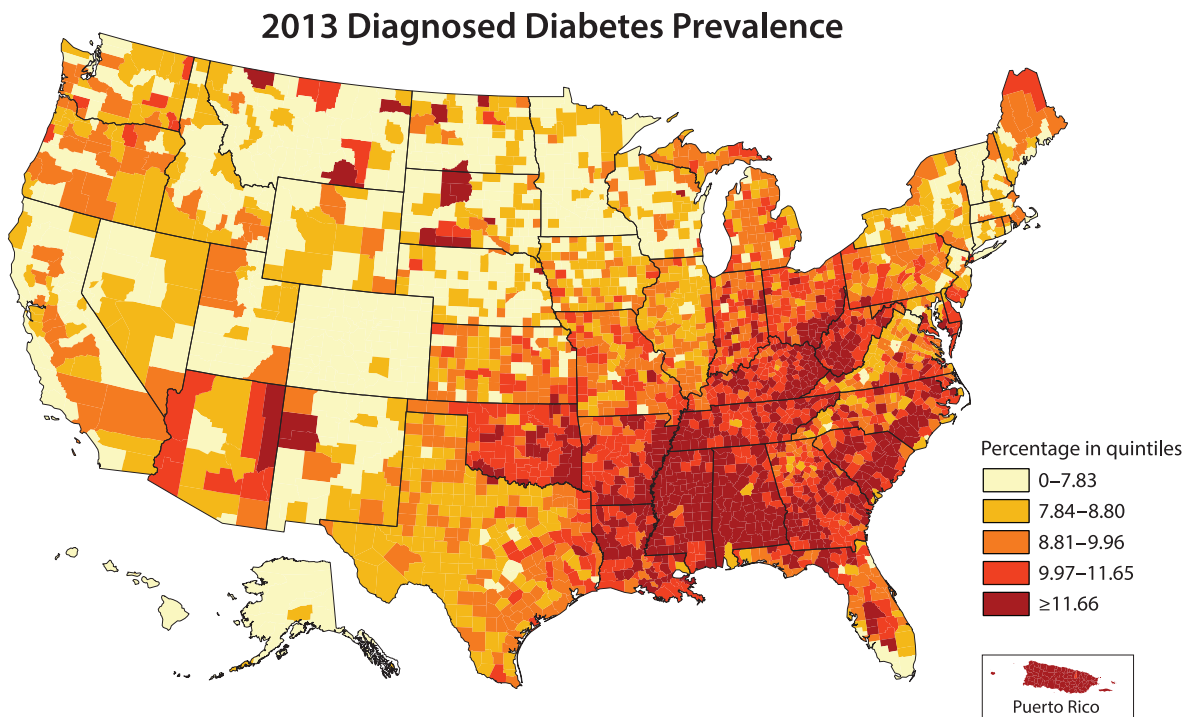


Figure 2 shows model-based county-level estimates of the age-adjusted prevalence of diagnosed diabetes among U.S. adults aged 20 years or older in 2013 (Methods). Specifically, this figure shows that:

- The median age-adjusted county-level prevalence of diagnosed diabetes was 9.4%, with a range of 3.8% to 20.8%.
- Counties in the southern and Appalachian regions of the United States tended to have the highest prevalence of diagnosed diabetes.

Figure 2. Age-adjusted, county-level prevalence of diagnosed diabetes among adults aged ≥20 years, United States, 2013



Data source: United States Diabetes Surveillance System. <https://www.cdc.gov/diabetes/atlas/countydata/atlas.html>

Incidence of Diagnosed Diabetes

Incidence Among Adults

- In 2015, an estimated 1.5 million new cases of diabetes (6.7 per 1,000 persons) were diagnosed among U.S. adults aged 18 years or older (Table 2) ([Methods](#)).
- More than half of these new cases were among adults aged 45 to 64 years, and the numbers were about equal for men and women (Table 2).
- Non-Hispanic blacks (9.0 per 1,000 persons) and people of Hispanic origin (8.4 per 1,000 persons) had a higher age-adjusted incidence compared to non-Hispanic whites (5.7 per 1,000 persons) during 2013–2015 (see [Table 2a](#) in the Appendix for more details).
- Age-adjusted incidence was about 2 times higher for people with less than a high school education (10.4 per 1,000 persons) compared to those with more than a high school education (5.3 per 1,000 persons) during 2013–2015 (see [Table 2a](#) in the Appendix for more details).



Table 2. Estimated incidence of diabetes among adults aged ≥18 years, United States, 2015

Characteristic	No. in thousands (95% CI) ^a	Rate per 1,000 (95% CI) ^b
Total	1,530 (1,402–1,658)	6.7 (6.2–7.3)
Age in years		
18–44	355 (289–420)	3.1 (2.6–3.8)
45–64	809 (714–905)	10.9 (9.6–12.2)
≥65	366 (310–422)	9.4 (8.0–10.9)
Sex		
Women	787 (694–880)	6.8 (6.0–7.6)
Men	743 (645–840)	6.7 (5.9–7.7)

CI = confidence interval.

^a Numbers for subgroups may not add up to the total because of rounding.

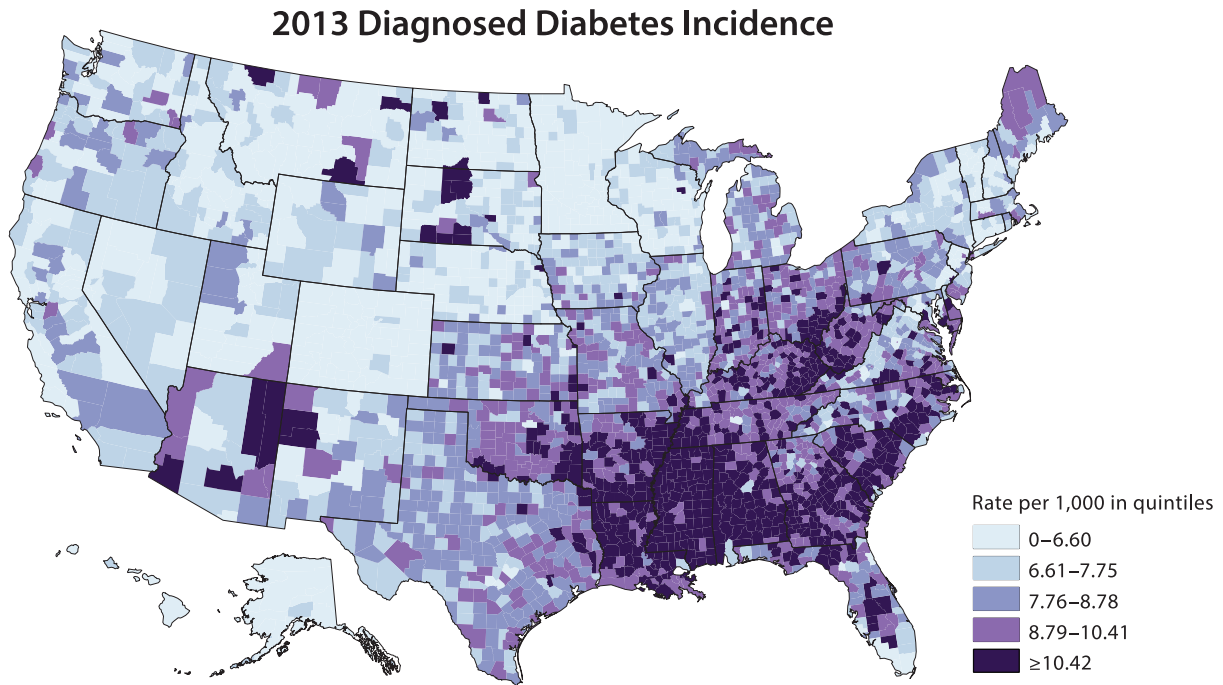
^b Rates are crude, not age-adjusted.

Data source: 2013–2015 National Health Interview Survey, 2011–2014 National Health and Nutrition Examination Survey, and 2015 U.S. Census Bureau data.

Figure 3 shows model-based county-level estimates of the age-adjusted incidence of diagnosed diabetes among U.S. adults aged 20 years or older in 2013 ([Methods](#)). Specifically, this figure shows that:

- The median age-adjusted county-level incidence of diagnosed diabetes was 8.2 per 1,000 persons, with a range of 3.1 to 21.9 per 1,000 persons.
- Similar to the geographic pattern of the prevalence of diagnosed diabetes, counties in the southern and Appalachian regions of the United States tended to have the highest incidence.

Figure 3. Age-adjusted, county-level incidence of diagnosed diabetes among adults aged ≥ 20 years, United States, 2013



Note: Data unavailable for U.S. territories.

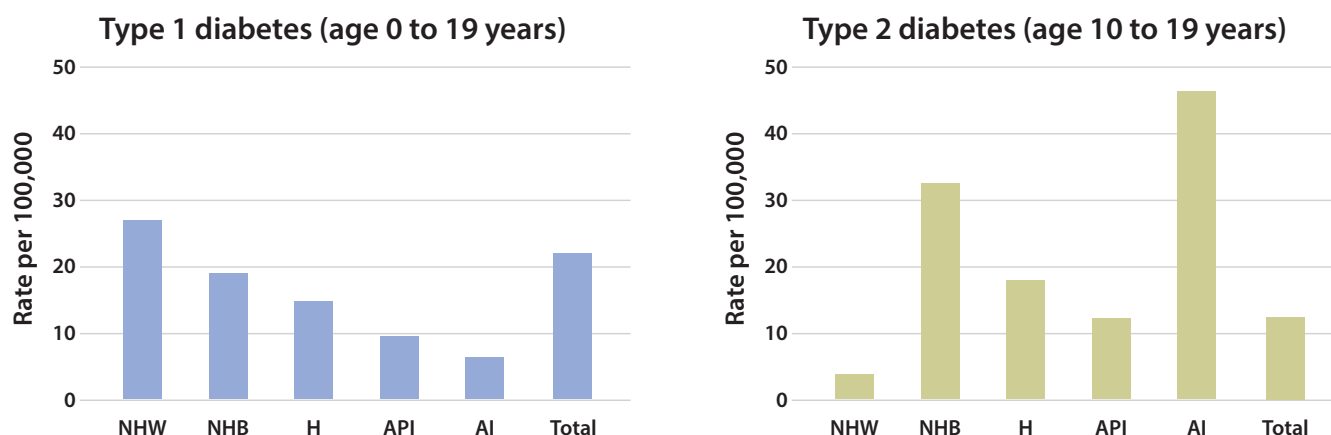
Data source: United States Diabetes Surveillance System. <https://www.cdc.gov/diabetes/atlas/countydata/atlas.html>



Incidence Among Children and Adolescents

Data from the SEARCH for Diabetes in Youth Study¹ indicated that:

- During 2011–2012, the estimated annual number of newly diagnosed cases in the United States included:
 - » 17,900 children and adolescents younger than age 20 years with type 1 diabetes.
 - » 5,300 children and adolescents age 10 to 19 years with type 2 diabetes.
- Among children and adolescents younger than age 20 years, non-Hispanic whites had the highest rate of new cases of type 1 diabetes compared to members of other U.S. racial and ethnic groups (Figure 4).
- Among children and adolescents aged 10 to 19 years, U.S. minority populations had higher rates of new cases of type 2 diabetes compared to non-Hispanic whites (Figure 4).

Figure 4. Incidence of type 1 and type 2 diabetes by race/ethnicity, 2011–2012

NHW = non-Hispanic whites, NHB = non-Hispanic blacks, H = Hispanics, API = Asians/Pacific Islands, AI = American Indians.

Note: American Indian (AI) youth who participated in the SEARCH study are not representative of all AI youth in the United States. Thus, these rates cannot be generalized to all AI youth nationwide.

Data source: SEARCH for Diabetes in Youth Study.

Prevalence of Prediabetes

- An estimated 33.9% of U.S. adults aged 18 years or older (84.1 million people) had prediabetes in 2015, based on their fasting glucose or A1C level. Nearly half (48.3%) of adults aged 65 years or older had prediabetes (Table 3) ([Methods](#)).
- Among adults with prediabetes, 11.6% reported being told by a health professional that they had this condition (Table 3).
- Age-adjusted data for 2011–2014 indicated that more men (36.6%) than women (29.3%) had prediabetes. Prevalence of prediabetes was similar among racial and ethnic groups (see [Table 3a](#) in the Appendix for more details).

Table 3. Estimated number, percentage, and awareness of prediabetes among adults aged ≥18 years, United States, 2015

Characteristic	No. in millions (95% CI) ^a	Percentage (95% CI) ^b	Percentage aware of prediabetes (95% CI) ^{a,c}
Total	84.1 (78.0–90.4)	33.9 (31.5–36.5)	11.6 (9.9–13.6)
Age in years			
18–44	27.4 (24.5–30.6)	23.7 (21.1–26.4)	8.2 (5.8–11.5)
45–64	34.3 (31.5–37.2)	40.9 (37.5–44.3)	12.9 (10.2–16.1)
≥65	23.1 (21.1–25.1)	48.3 (44.2–52.5)	14.1 (10.5–18.6)
Sex			
Women	39.5 (36.0–43.3)	31.1 (28.3–34.0)	14.1 (11.3–17.6)
Men	44.5 (40.5–48.7)	36.9 (33.6–40.4)	9.4 (6.6–13.3)

CI = confidence interval.

^a Numbers for subgroups may not add up to the total because of rounding.

^b Data are crude, not age-adjusted.

^c Among those with prediabetes.

Data source: 2011–2014 National Health and Nutrition Examination Survey and 2015 U.S. Census Bureau data.

Risk Factors for Complications

Risk factor data for 2011–2014 for U.S. adults aged 18 years or older with diagnosed diabetes indicated the following ([Methods](#)):

Smoking

- 15.9% (95% confidence interval [CI], 13.9%–18.1%) of adults were current smokers, and 34.5% (95% CI, 31.7%–37.3%) had quit smoking but had a history of smoking at least 100 cigarettes in their lifetime.

Overweight and Obesity

- 87.5% (95% CI, 84.8%–89.7%) of adults were overweight or obese, defined as a body mass index (BMI) of 25 kg/m² or higher. Specifically:
 - » 26.1% (95% CI, 23.2%–29.3%) of adults were overweight (BMI of 25.0 to less than 30.0 kg/m²).
 - » 43.5% (95% CI, 39.6%–47.6%) of adults had obesity (BMI of 30.0 to less than 40.0 kg/m²).
 - » 17.8% (95% CI, 14.8%–21.3%) of adults had severe obesity (BMI of 40.0 kg/m² or higher).



Physical Inactivity

- 40.8% (95% CI, 36.8%–45.0%) of adults were physically inactive, defined as getting less than 10 minutes a week of moderate or vigorous activity in each of the physical activity categories of work, leisure time, and transportation.

High Blood Pressure

- 73.6% (95% CI, 69.9%–77.1%) of adults had systolic blood pressure of 140 mm Hg or higher or diastolic blood pressure of 90 mm Hg or higher, or they were on prescription medication for high blood pressure.

High Cholesterol (Hyperlipidemia)

- 58.2% (95% CI, 49.7%–66.3%) of adults aged 21 years or older with no self-reported cardiovascular disease but who were eligible for statin therapy were on a lipid-lowering medication (see [Table 4a](#) in the Appendix for more details).
- 66.9% (95% CI, 58.5%–74.4%) of adults aged 21 years or older with self-reported cardiovascular disease who were thus eligible for statin therapy were on a lipid-lowering medication.

High Blood Glucose (Hyperglycemia)

- 15.6% (95% CI, 13.2%–18.3%) of adults had an A1C value higher than 9%.

Coexisting Conditions and Complications

Hospitalizations

In 2014, a total of 7.2 million hospital discharges were reported with diabetes as any listed diagnosis among U.S. adults aged 18 years or older (Table 4) ([Methods](#)). These discharges included the following:

- 1.5 million for major cardiovascular diseases (70.4 per 1,000 persons with diabetes), including:
 - » 400,000 for ischemic heart disease (18.3 per 1,000 persons with diabetes).
 - » 251,000 for stroke (11.5 per 1,000 persons with diabetes).
- 108,000 for a lower-extremity amputation (5.0 per 1,000 persons with diabetes).
- 168,000 for diabetic ketoacidosis (7.7 per 1,000 persons with diabetes).



Table 4. Number and rate of hospitalizations among adults aged ≥18 years with diagnosed diabetes for selected causes, United States, 2014

Cause of hospitalization	No. in thousands	Crude rate per 1,000 persons with diabetes (95% CI)
Diabetes as any listed diagnosis	7,155	327.2 (311.3–343.1)
Major cardiovascular disease	1,539	70.4 (66.8–73.9)
Ischemic heart disease	400	18.3 (17.3–19.3)
Stroke	251	11.5 (10.9–12.1)
Lower-extremity amputation	108	5.0 (4.7–5.2)
Diabetic ketoacidosis	168	7.7 (7.3–8.1)

CI = confidence interval.

Data source: United States Diabetes Surveillance System.

Emergency Department Visits

In 2014, a total of 14.2 million emergency department visits were reported with diabetes as any listed diagnosis among adults aged 18 years or older (Table 5), including:

- 245,000 for hypoglycemia (11.2 per 1,000 persons with diabetes).
- 207,000 for hyperglycemic crisis (9.5 per 1,000 persons with diabetes).

Table 5. Number and rate of emergency department visits among adults aged ≥18 years with diagnosed diabetes, United States, 2014

Cause of emergency department visit	No. in thousands	Crude rate per 1,000 persons with diabetes (95% CI)
Diabetes as any listed diagnosis	14,192	648.9 (600.9–696.9)
Hypoglycemia	245	11.2 (10.4–12.1)
Hyperglycemic crisis	207	9.5 (8.8–10.2)

CI = confidence interval.

Data source: United States Diabetes Surveillance System.

Kidney Disease

- Among U.S. adults aged 20 years or older with diagnosed diabetes, the estimated crude prevalence of chronic kidney disease (stages 1–4) was 36.5% (95% CI, 32.2%–40.8%) during 2011–2012.²
- Among those with diabetes and moderate to severe kidney disease (stage 3 or 4), 19.4% (95% CI, 15.5%–23.2%) were aware of their kidney disease during 1999–2012.³
- In 2014, a total of 52,159 people developed end-stage renal disease with diabetes as the primary cause. Adjusted for age group, sex, and racial or ethnic group, the rate was 154.4 per 1 million persons.⁴

Deaths

- Diabetes was the seventh leading cause of death in the United States in 2015. This finding is based on 79,535 death certificates in which diabetes was listed as the underlying cause of death (crude rate, 24.7 per 100,000 persons).⁵
- Diabetes was listed as any cause of death on 252,806 death certificates in 2015 (crude rate, 78.7 per 100,000 persons).⁵

Cost

- The total direct and indirect estimated cost of diagnosed diabetes in the United States in 2012 was \$245 billion.⁶
- Average medical expenditures for people with diagnosed diabetes were about \$13,700 per year. About \$7,900 of this amount was attributed to diabetes.⁶
- After adjusting for age group and sex, average medical expenditures among people with diagnosed diabetes were about 2.3 times higher than expenditures for people without diabetes.⁶



Acknowledgments

The following organizations provided content and helped compile data for this report:

- [Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Division of Diabetes Translation](#)
- [Indian Health Service, Division of Diabetes Treatment and Prevention](#)
- [National Institutes of Health, National Institute of Diabetes and Digestive and Kidney Diseases](#)

The following organizations collaborated on the content of this report:

- [American Diabetes Association](#)
- [JDRE](#)

References

1. Mayer-Davis EJ, Lawrence JM, Dabelea D, et al. Incidence trends of type 1 and type 2 diabetes among youths, 2002–2012. *N Engl J Med*. 2017;376:1419–1429.
2. Murphy D, McCulloch CE, Lin F, et al. Trends in prevalence of chronic kidney disease in the United States. *Ann Intern Med*. 2016;165:473–481.
3. Centers for Disease Control and Prevention. Chronic Kidney Disease (CKD) Surveillance Project website. <https://nccd.cdc.gov/CKD/default.aspx>. Accessed June 16, 2017.
4. United States Renal Data System. 2016 *USRDS Annual Data Report: Epidemiology of Kidney Disease in the United States*. Bethesda, MD: National Institute of Diabetes and Digestive and Kidney Diseases, National Institutes of Health; 2016.
5. Centers for Disease Control and Prevention. About Underlying Cause of Death 1999–2015. CDC WONDER Database. <http://wonder.cdc.gov/ucd-icd10.html>. Updated December 2016. Accessed April 4, 2017.
6. American Diabetes Association. Economic costs of diabetes in the U.S. in 2012. *Diabetes Care*. 2013;36(4):1033–1046.

Suggested Citation

Centers for Disease Control and Prevention. National Diabetes Statistics Report, 2017. Atlanta, GA: Centers for Disease Control and Prevention, U.S. Dept of Health and Human Services; 2017.

Appendix

Detailed Tables

This section provides additional data for Tables 1–3, Figure 1, and the High Cholesterol (Hyperlipidemia) section under Risk Factors for Complications of the National Diabetes Statistics Report, 2017.

Table 1a. Age-adjusted prevalence of diagnosed and undiagnosed diabetes among adults aged ≥18 years, United States, 2011–2014

Characteristic	Diagnosed diabetes Percentage (95% CI)	Undiagnosed diabetes Percentage (95% CI)	Total Percentage (95% CI)
Total	8.7 (8.1–9.4)	2.7 (2.3–3.3)	11.5 (10.7–12.4)
Sex			
Women	8.5 (7.5–9.5)	2.3 (1.8–3.1)	10.8 (9.8–11.9)
Men	9.1 (8.4–9.9)	3.2 (2.4–4.3)	12.3 (11.3–13.4)
Race/Ethnicity			
Asian, non-Hispanic	10.3 (8.6–12.4)	5.7 (4.0–8.2)	16.0 (13.6–18.9)
Black, non-Hispanic	13.4 (12.2–14.6)	4.4 (3.0–6.2)	17.7 (15.8–19.9)
Hispanic	11.9 (10.3–13.7)	4.5 (3.2–6.2)	16.4 (14.1–18.9)
White, non-Hispanic	7.3 (6.6–8.1)	2.0 (1.5–2.6)	9.3 (8.4–10.2)
Education			
Less than high school	11.4 (9.9–13.1)	4.1 (3.0–5.6)	15.5 (13.5–17.7)
High school	10.3 (8.8–12.0)	3.2 (2.4–4.2)	13.5 (11.9–15.2)
More than high school	7.4 (6.6–8.4)	2.2 (1.6–3.0)	9.6 (8.6–10.7)

CI = confidence interval.

Data source: 2011–2014 National Health and Nutrition Examination Survey.

Table 1b. Estimated prevalence of diagnosed diabetes among the total population and among children and adolescents, United States, 2015

Characteristic	No. (95% CI)	Percentage (95% CI)
Total	23,131,000 (22,555,000–23,706,000)	7.20 (7.02–7.38)
Age in years		
<18	132,000 (92,000–172,000)	0.18 (0.13–0.24)
<20	193,000 (140,000–246,000)	0.24 (0.18–0.31)

CI = confidence interval.

Note: Data rounded to nearest thousand and not age-adjusted.

Data source: 2013–2015 National Health Interview Survey and 2015 U.S. Census Bureau data.

Table 1c. Age-adjusted prevalence of diagnosed diabetes by race/ethnicity, education level, and sex among adults aged ≥18 years, United States, 2013–2015

Characteristic	Total Percentage (95% CI)	Men Percentage (95% CI)	Women Percentage (95% CI)
Race/Ethnicity			
American Indian/Alaska Native	15.1 (15.0–15.2)	14.9 (14.8–15.0)	15.3 (15.2–15.3)
Asian, non-Hispanic, overall	8.0 (7.3–8.9)	9.0 (7.6–10.5)	7.3 (6.4–8.3)
Asian Indian	11.2 (9.1–13.7)	12.2 (9.1–16.2)	10.0 (7.4–13.3)
Chinese	4.3 (3.2–5.9)	6.2 (4.1–9.1)	2.8 (1.8–4.4)
Filipino	8.9 (7.4–10.8)	9.1 (6.8–11.9)	8.9 (7.1–11.2)
Other Asian	8.5 (7.1–10.0)	8.9 (6.9–11.4)	8.2 (6.5–10.2)
Black, non-Hispanic	12.7 (12.1–13.4)	12.2 (11.3–13.1)	13.2 (12.4–14.0)
Hispanic, overall	12.1 (11.4–12.7)	12.6 (11.6–13.5)	11.7 (10.9–12.5)
Central/South American	8.5 (7.3–10.0)	8.5 (6.6–10.8)	8.8 (7.2–10.7)
Cuban	9.0 (7.1–11.4)	11.6 (8.0–16.5)	5.9 (3.7–9.3)
Mexican	13.8 (13.0–14.8)	14.2 (12.9–15.7)	13.5 (12.5–14.7)
Puerto Rican	12.0 (10.5–13.7)	12.2 (10.0–14.9)	11.8 (9.8–14.1)
White, non-Hispanic	7.4 (7.2–7.6)	8.1 (7.8–8.5)	6.8 (6.5–7.1)
Education			
Less than high school	12.6 (11.9–13.2)	12.2 (11.3–13.1)	13.0 (12.2–13.9)
High school	9.5 (9.1–10.0)	10.1 (9.5–10.8)	9.2 (8.6–9.8)
More than high school	7.2 (7.0–7.5)	7.9 (7.5–8.3)	6.6 (6.3–6.9)

CI = confidence interval.

Data source: 2013–2015 National Health Interview Survey, except American Indian/Alaska Native data, which were from the 2015 Indian Health Service National Data Warehouse.

Table 2a. Age-adjusted incidence of diagnosed diabetes among adults aged ≥18 years, United States, 2013–2015

Characteristic	Rate per 1,000 (95% CI)
Race/Ethnicity	
Asian, non-Hispanic	6.0 (4.2–8.6)
Black, non-Hispanic	9.0 (7.4–10.9)
Hispanic	8.4 (7.2–9.8)
White, non-Hispanic	5.7 (5.0–6.4)
Education	
Less than high school	10.4 (8.8–12.4)
High school	7.8 (6.6–9.2)
More than high school	5.3 (4.7–5.9)

CI = confidence interval.

Data source: 2013–2015 National Health Interview Survey and 2015 U.S. Census Bureau data.

Table 3a. Age-adjusted prevalence of prediabetes among adults aged ≥18 years, United States, 2011–2014

Characteristic	Percentage with prediabetes (95% CI)	Percentage reporting awareness of prediabetes (95% CI)
Total	33.0 (30.6–35.5)	10.6 (9.0–12.6)
Sex		
Women	29.3 (26.8–31.8)	13.3 (10.0–17.4)
Men	36.6 (33.2–40.0)	8.9 (6.2–12.4)
Race/Ethnicity		
Asian, non-Hispanic	35.7 (33.0–38.5)	9.0 (5.9–13.6)
Black, non-Hispanic	36.3 (33.3–39.4)	10.5 (7.9–13.9)
Hispanic	31.7 (28.4–35.2)	7.5 (4.4–12.5)
White, non-Hispanic	31.5 (28.3–34.9)	11.3 (8.9–14.1)
Education		
Less than high school	37.6 (33.2–42.3)	9.3 (6.7–12.9)
High school	37.0 (33.8–40.3)	12.4 (8.0–18.8)
More than high school	30.4 (27.6–33.4)	10.4 (8.2–13.0)

CI = confidence interval.

Note: Percentage reporting awareness is a subset of adults with prediabetes.

Data source: 2011–2014 National Health and Nutrition Examination Survey.

Table 4a. Rates of eligibility for statin therapy and treatment with lipid-lowering medication by cardiovascular disease prevention stage among adults aged ≥21 years with diagnosed diabetes, United States, 2011–2014

Cardiovascular disease prevention stage	Percentage (95% CI) of adults who were eligible for statin therapy	Among eligible adults, percentage (95% CI) on lipid-lowering therapy
Primary ^a	75.2 (68.7–80.8)	58.2 (49.7–66.3)
Secondary ^b	23.3 (18.9–28.3)	66.9 (58.5–74.4)

CI = confidence interval.

^a Defined as adults aged 40–75 years with no self-reported cardiovascular disease or adults aged 21–39 years with no self-reported cardiovascular disease and a low-density lipoprotein cholesterol level ≥190 mg/dL, according to 2013 guidelines from the American College of Cardiology and American Heart Association.

^b Defined as adults with self-reported cardiovascular disease, according to 2013 guidelines from the American College of Cardiology and American Heart Association.

Data source: 2011–2014 National Health and Nutrition Examination Survey.

Data Sources and Methods

This section provides additional details about data sources and methods used in the National Diabetes Statistics Report, 2017.

Prevalence of Both Diagnosed and Undiagnosed Diabetes Among People of All Ages, United States, 2015

Data Sources

- 2011–2014 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control and Prevention.
- 2013–2015 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2015, Population Division, U.S. Census Bureau.

Methods

The total number of people with diabetes is the sum of the number of those aged 18 years or older with diagnosed or undiagnosed diabetes and the number of those younger than age 18 years with diagnosed diabetes. Estimates of undiagnosed diabetes for children and adolescents younger than age 18 years are not available. The 2011–2014 NHANES was used to calculate the percentage of adults aged 18 years or older with diagnosed and undiagnosed diabetes (see next section for detail). The 2013–2015 NHIS was used to calculate the percentage of children and adolescents younger than 18 years with diagnosed diabetes. These percentages were then applied to the corresponding July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau to derive the total number of people with diabetes.

Applying 2011–2014 NHANES estimates to the 2015 U.S. resident population estimates has limitations. This methodology assumes that the prevalence of diabetes in 2015 was the same as it was in earlier periods (2011–2014) and that the prevalence of diabetes in the resident population was identical to those in the civilian, noninstitutionalized population (from NHANES). Deviations from these assumptions may result in overestimated or underestimated numbers and rates.

Prevalence of Both Diagnosed and Undiagnosed Diabetes Among Adults Aged 18 Years or Older, United States, 2015

Data Sources

- 2011–2014 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2015, Population Division, U.S. Census Bureau.

Methods

The percentage of adults aged 18 years or older with diabetes (diagnosed or undiagnosed) was obtained using 2011–2014 NHANES data. People who self-reported being told by a doctor or health professional that they had diabetes (other than during pregnancy) were classified as having diagnosed diabetes. Those not reporting a history of diagnosed diabetes but who had either a fasting plasma glucose greater than or equal to 126 mg/dl or an A1C level greater than or equal to 6.5% were classified as having undiagnosed diabetes. For consistency with earlier

estimates, fasting glucose values were adjusted using recommended regression equations. People with missing values for either fasting glucose or A1C and pregnant women were excluded. People with diagnosed diabetes from the interviewed sample were combined with people with undiagnosed diabetes from the fasting plasma glucose subsample. Appropriate sampling weights were used so that the sum of the weights added to the total U.S. population.

The age-specific percentages of diagnosed and undiagnosed diabetes for age groups 18–44, 45–64, and 65 years or older were then applied to the corresponding July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau to derive the age-specific numbers of adults with diagnosed and undiagnosed diabetes. These age-specific numbers of adults were added to obtain the estimated total number of adults with diagnosed and undiagnosed diabetes. The same procedure was used to obtain the total number of adults with diagnosed and undiagnosed diabetes by sex. Age-adjusted percentages of diagnosed and undiagnosed diabetes were calculated among adults aged 18 years or older by sex, race/ethnicity, and education level by the direct method to the 2000 U.S. Census standard population, using age groups 18–44, 45–64, and 65 years or older.

Prevalence of Diagnosed Diabetes, United States, 2015

Data Sources

- 2013–2015 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2015, Population Division, U.S. Census Bureau.

Methods

The percentage of people with diagnosed diabetes was obtained from 2013–2015 NHIS data. Information on diagnosed diabetes (other than during pregnancy) was obtained from a knowledgeable adult family member residing in the household for children and adolescents younger than age 18 years and was self-reported for people aged 18 years or older. The estimate of diagnosed diabetes was applied to the July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau to derive the number of people with diagnosed diabetes for all age groups and for children and adolescents younger than age 18 years and age 20 years.

No validated method exists to distinguish between types of diabetes in surveys. The proportion of type 1 diabetes was estimated from findings reported in the following journal articles:

- Dall TM, Mann SE, Zhang Y, et al. Distinguishing the economic costs associated with type 1 and type 2 diabetes. *Popul Health Manag.* 2009;12:103–110.
- Fitch K, Weisman T, Engel T, et al. Longitudinal commercial claims-based cost analysis of diabetic retinopathy screening patterns. *Am Health Drug Benefits.* 2015;8(6):300–308.
- Johnson JA, Pohar SL, Majumdar SR. Health care use and costs in the decade after identification of type 1 and type 2 diabetes: a population-based study. *Diabetes Care.* 2006;29:2403–2408.
- Menke A, Orchard TJ, Imperatore G, Bullard KM, Mayer-Davis E, Cowie CC. The prevalence of type 1 diabetes in the United States. *Epidemiology.* 2013;24(5):773–774.
- Ng E, Dasgupta K, Johnson JA. An algorithm to differentiate diabetic respondents in the Canadian Community Health Survey. *Health Rep.* 2008;19:71–79.

Prevalence of Diagnosed Diabetes by Race/Ethnicity Among Adults Aged 18 Years or Older, United States, 2013–2015

Data Sources

- 2013–2015 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
- National Data Warehouse (NDW), Indian Health Service (IHS).

Methods

With the exception of American Indian/Alaska Native (AI/AN) people, who are not well-represented in national surveys because of small population size, race/ethnicity-specific estimates of diagnosed diabetes by sex were calculated using 2013–2015 NHIS data. Adults aged 18 years or older who self-reported being told by a doctor or health professional that they had diabetes were classified as having diagnosed diabetes. The estimate of diagnosed diabetes for Native Hawaiians and Other Pacific Islanders was not included because of small sample size.

Prevalence of diagnosed diabetes among AI/AN people was calculated using fiscal year 2015 data from the IHS NDW. This data system includes patient registration and encounter data that are received from IHS facilities, tribally operated programs, and urban and contract health systems (I/T/U). These health care facilities serve about 2.2 million AI/AN people who belong to 567 federally recognized tribes in 36 states. Data for active patients (i.e., those with at least one visit to an I/T/U facility during the preceding 3 years) aged 18 years or older were used to calculate these estimates. Diabetes cases among these patients were identified using *International Classification of Diseases, Ninth Revision, Clinical Modification* (ICD-9-CM) diagnostic codes 250.0–250.93 from patient visit data. Patients were considered to have a diagnosis of diabetes if they had at least two visits with an ICD 250 diagnosis code reported during fiscal year 2015. Estimates may not be comparable because of differences in the methods used to define diabetes in NHIS and IHS NDW.

Percentages for all U.S. racial and ethnic groups estimated using NHIS and IHS NDW data were age-adjusted, using age groups 18–44, 45–64, and 65 years or older, by the direct method to the 2000 U.S. Census standard population.

County-Level Prevalence and Incidence of Diagnosed Diabetes Among Adults Aged 20 Years or Older, United States, 2013

Data Sources

- 2012–2014 Behavioral Risk Factor Surveillance System (BRFSS), National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population for Selected Age Groups by Sex for the United States, States, Counties, and Puerto Rico Commonwealth and Municipios: April 1, 2010 to July 1, 2014, Population Division, U.S. Census Bureau.
- United States Diabetes Surveillance System (USDSS), National Center for Chronic Disease Prevention and Health Promotion, Centers for Disease Control and Prevention.

Methods

Data from the BRFSS and the U.S. Census Bureau's Population Estimates Program were used to obtain county-level estimates of prevalence and incidence of diagnosed diabetes among adults aged 20 years or older. Three years of data were used to improve the precision of the estimates. For 2013, BRFSS survey data for 2012, 2013, and 2014 were used. County-level estimates for the over 3,200 counties or county equivalents (e.g., parish, borough, municipality) in the 50 U.S. states, Puerto Rico, and the District of Columbia were based on indirect model-dependent estimates using Bayesian multilevel modeling techniques. This model-dependent approach uses a statistical model that "borrows strength" in making an estimate for one county from BRFSS data collected in other

counties. Multilevel Poisson regression models with random effects of demographic variables (age groups 20–44, 45–64, and 65 years or older; race; and sex) at the county level were developed. State was included as a county-level covariate. Rates were age adjusted to the 2000 U.S. Census standard population using age groups 20–44, 45–64, and 65 years or older. More detailed methods are available online at www.cdc.gov/diabetes/pdfs/data/calculating-methods-references-county-level-estimates-ranks.pdf. Maps and data are posted on the USDSS website.

Incidence of Diagnosed Diabetes Among Adults Aged 18 Years or Older, United States, 2015

Data Sources

- 2013–2015 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
- 2011–2014 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2015, Population Division, U.S. Census Bureau.

Methods

The rate of new cases of diabetes was calculated using 2013–2015 NHIS data on respondents' age at diagnosis and age at interview. Adults who reported being diagnosed with diabetes were asked at what age they were diagnosed. The number of years since diagnosis was calculated by subtracting the person's age at diagnosis from the person's current age. Adults who had a value of zero were identified as having been diagnosed with diabetes within the last year. In addition, half of the adults who had a value of one were classified as having been diagnosed within the last year. To calculate the rate, the numerator included the number of adults who were diagnosed with diabetes within the last year. The denominator was the estimate of the adult population, excluding those who had been diagnosed for more than 1 year and those who were categorized on the NHIS as "refused" or "don't know" or who had missing values on the diabetes status question.

To estimate the number of new cases of diabetes for adults in each age group in 2015, the age-specific rates of new cases from NHIS were applied to the corresponding July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau after excluding the number of adults who had been diagnosed with diabetes for more than 1 year, estimated from NHANES. Age-adjusted incidence of diagnosed diabetes was calculated among adults aged 18 years or older by race/ethnicity and education level by the direct method to the 2000 U.S. Census standard population, using age groups 18–44, 45–64, and 65 years or older.

Prevalence of Prediabetes Among People Aged 18 Years or Older, United States, 2015

Data Sources

- 2011–2014 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Annual Estimates of the Resident Population by Single Year of Age and Sex for the United States: April 1, 2010 to July 1, 2015, Population Division, U.S. Census Bureau.

Methods

The percentage of adults aged 18 years or older with prediabetes was estimated using 2011–2014 NHANES data. People without diabetes were classified as having prediabetes if they had fasting plasma glucose values of 100 to 125 mg/dL or A1C values of 5.7% to 6.4%. For consistency with earlier estimates, fasting glucose values were

adjusted using recommended regression equations. People with missing values for either fasting glucose or A1C and pregnant women were excluded. The age-specific percentages of prediabetes for age groups 18–44, 45–64, and 65 years or older were then applied to the corresponding July 1, 2015 U.S. resident population estimates from the U.S. Census Bureau to derive the age-specific numbers of adults with prediabetes. These age-specific numbers of adults were added to obtain the estimated total number of adults with prediabetes. The same method was used for sex-specific numbers.

In addition, age-adjusted percentages were calculated by sex, race/ethnicity (non-Hispanic white, non-Hispanic black, Hispanic, and Asian), and education level. Age adjustment was done with age groups 18–44, 45–64, and 65 years or older by the direct method to the 2000 U.S. Census standard population. Among those who tested positive for prediabetes, awareness was defined as (1) answered “yes” to the question, “Have you ever been told by a doctor or other health professional that you have any of the following: prediabetes, impaired fasting glucose, impaired glucose tolerance, borderline diabetes or that your blood sugar is higher than normal but not high enough to be called diabetes or sugar diabetes?” or (2) reported having prediabetes when asked whether they had diabetes.

Reference

American Diabetes Association. Classification and diagnosis of diabetes. *Diabetes Care*. 2017;40(suppl 1):S11–S24.

Risk Factors for Complications Among Adults Aged 18 Years or Older with Diagnosed Diabetes, United States, 2011–2014

Data Source

- 2011–2014 National Health and Nutrition Examination Survey (NHANES), National Center for Health Statistics, Centers for Disease Control and Prevention.

Methods

Smoking

The percentage of adults aged 18 years or older with diagnosed diabetes who had a history of smoking was estimated on the basis of self-reported current smoking or a history of smoking at least 100 cigarettes in a lifetime.

Obesity

The percentage of adults aged 18 years or older with diagnosed diabetes who were overweight or obese was estimated on the basis of a measured body mass index (BMI) of 25.0 to less than 30.0 kg/m² (overweight), 30.0 to less than 40.0 kg/m² (obese), or 40.0 kg/m² or higher (severely obese).

Physical Inactivity

The percentage of adults aged 18 years or older with diagnosed diabetes who were physically inactive was estimated on the basis of self-report of less than 10 minutes per week of moderate or vigorous activity in each of the physical activity categories of work, leisure time, and transportation.

High Blood Pressure

The percentage of adults aged 18 years or older with diagnosed diabetes who had high blood pressure was estimated on the basis of the average measured systolic blood pressure of 140 mm Hg or higher or the average diastolic blood pressure of 90 mm Hg or higher or self-reported current use of prescription medication for high blood pressure.

High Cholesterol (Hyperlipidemia)

The percentage of adults aged 21 years or older with diagnosed diabetes who were eligible for and being treated with a statin was estimated on the basis of the 2013 cholesterol guidelines from the American College of Cardiology and American Heart Association. People with diabetes who were eligible for primary prevention statin therapy were

defined as those aged 40 to 75 years with no history of cardiovascular disease or those aged 21 to 39 years with no history of cardiovascular disease and a low-density lipoprotein cholesterol level of 190 mg/dL or higher. People with diabetes and cardiovascular disease were eligible for secondary prevention statin therapy.

High Blood Glucose (Hyperglycemia)

The percentage of adults aged 18 years or older with diagnosed diabetes who had high blood glucose was estimated on the basis of an A1C value higher than 9%.

Coexisting Conditions and Complications Among Adults Aged 18 Years or Older with Diabetes

Data Sources

- 2014 National Inpatient Sample (NIS), Agency for Healthcare Research and Quality.
- 2014 Nationwide Emergency Department Sample (NEDS), Agency for Healthcare Research and Quality.
- 2013–2015 National Health Interview Survey (NHIS), National Center for Health Statistics, Centers for Disease Control and Prevention.
- Chronic Kidney Disease Surveillance System, Centers for Disease Control and Prevention.
- 2015 United States Renal Data System (USRDS) Annual Report.

Methods

The number of hospitalizations for major cardiovascular diseases, lower-extremity amputation, and diabetic ketoacidosis in 2014 were calculated using NIS. The number of emergency department visits for hypoglycemia and hyperglycemic crisis in 2014 were calculated using NEDS. Crude rates were calculated using the proportion of the population with diabetes from NHIS. Prevalence data for chronic kidney disease awareness were from CDC's Chronic Kidney Disease Surveillance System using NHANES data.

Treatment of a Heart Attack



This is an introduction to the common treatments you may experience following [diagnosis](#) as a heart attack patient. Heart attack treatment is obviously a complex process, but this basic primer will help you talk with your doctors and other healthcare providers about your own needs and questions.

What We Will Cover

- Typical types of heart attack and treatments
- Types of drugs

Common Heart Attack Types & Treatments

The type of heart attack (also called myocardial infarction, or MI) you experienced determines the treatments your medical team will choose. A heart attack occurs when a blockage in one or more coronary arteries reduces or stops blood flow to the heart, which starves part of the heart muscle of oxygen.

The blockage might be complete or partial.

- A complete blockage of a coronary artery means you suffered a 'STEMI' heart attack — which stands for ST-elevation myocardial infarction.
- A partial blockage would be an 'NSTEMI' heart attack — a non-ST-elevation myocardial infarction.

IMPORTANT: Always dial 911 if you think you might be having a heart attack. The EMS crew in your ambulance will route you to the right hospital based on your location.

Treatments differ for a STEMI versus NSTEMI heart attack, although there can be some overlap. Hospitals commonly use techniques to restore blood flow to part of the heart muscle damaged during a heart attack.

- You might receive clot-dissolving drugs (thrombolysis), balloon angioplasty, surgery, or a combination of treatments.
- About 36% of hospitals in the U.S. are equipped to use a procedure called percutaneous coronary intervention (PCI), a mechanical means of treating heart attack.

At a hospital that uses PCI, you would likely be sent to the department that specializes in cardiac catheterization (usually called a cath lab) for a diagnostic angiogram to examine blood flow to your heart and test how well the heart is pumping. Depending on the results of that procedure, you may be routed to one of three treatments: medical therapy only; PCI; or coronary artery bypass grafting (CABG).

A hospital that does not use PCI might transfer you to one that does. Or, it may decide to administer drugs known as fibrinolytic agents to restore blood flow. You might be given an angiography (an imaging technique used to see inside your arteries, veins and heart chambers), possibly followed by an invasive procedure called revascularization to restore blood circulation in your heart.

If the hospital determines you had an NSTEMI heart attack, doctors typically use one of two treatment strategies. One is called an 'ischemia-guided strategy', the other an 'early invasive strategy'. Both may involve a test called [cardiac catheterization](#) to examine the inside of your heart.

- The ischemia-guided strategy uses various drugs (antiplatelet agents and anticoagulants) to inhibit blood clot formation.
- The early invasive strategy will start with the use of various drugs (antiplatelet agents and anticoagulants) to inhibit blood clot formation, but might also proceed to a medical therapy, a PCI with stenting, or coronary artery bypass grafting (CABG), followed by certain types of posthospital care.

If that all sounds complicated, you're right — it is! We don't want to subject you to information overload. But we do want to give you an overview that helps you have an informed discussion with your doctors. They can explain in appropriate detail what treatments they're using for your particular condition, and answer any specific questions you might have.

Here is a list of many common heart attack treatments. For more detailed descriptions and explanations of these treatments, [see our Cardiac Procedures page](#).

- **Angioplasty:** Special tubing with an attached deflated balloon is threaded up to the coronary arteries.
- **Angioplasty, Laser:** Similar to angioplasty except that the catheter has a laser tip that opens the blocked artery.
- **Artificial Heart Valve Surgery:** Replaces an abnormal or diseased heart valve with a healthy one.
- **Atherectomy:** Similar to angioplasty except that the catheter has a rotating shaver on its tip to cut away plaque from the artery.
- **Bypass Surgery:** Treats blocked heart arteries by creating new passages for blood to flow to your heart muscle.
- **Cardiomyoplasty:** An experimental procedure in which skeletal muscles are taken from a patient's back or abdomen.
- **Heart Transplant:** Removes a diseased heart and replaces it with a donated healthy human heart.
- **Minimally Invasive Heart Surgery:** An alternative to standard bypass surgery.
- **Radiofrequency Ablation:** A catheter with an electrode at its tip is guided through the veins to the heart muscle to destroy carefully selected heart muscle cells in a very small area.
- **Stent Procedure:** A stent is a wire mesh tube used to prop open an artery during angioplasty.
- **Transmyocardial Revascularization (TMR):** A laser is used to drill a series of holes from the outside of the heart into the heart's pumping chamber.

In addition to the above treatments, you might hear about implantable medical devices being used to treat certain heart attacks. [We devote a page to these devices here](#).

Types of Drugs

Heart attack treatment involves a variety of drugs. The list below provides a quick overview of the common types. **See more details on our [cardiac medications](#) page.** Your doctor will decide the best treatment combination for your situation.

- *Anticoagulant:* Used to treat certain blood vessel, heart and lung conditions.
- *Antiplatelet agent:* Keeps blood clots from forming by preventing blood platelets from sticking together.
- *Angiotensin-converting enzyme (ACE) inhibitor:* Expands blood vessels and decreases resistance by lowering levels of angiotensin II. Allows blood to flow more easily and makes the heart's work easier or more efficient.
- *Angiotensin II receptor blocker:* Rather than lowering levels of angiotensin II (as ACE inhibitors do) angiotensin II receptor blockers prevent this chemical from having any effects on the heart and blood vessels. This keeps blood pressure from rising.
- *Angiotensin receptor neprilysin inhibitor:* Neprilysin is an enzyme that breaks down natural substances in the body that open narrowed arteries. By limiting the effect of neprilysin, it increases the effects of these substances and improves artery opening and blood flow, reduces sodium (salt) retention, and decreases strain on the heart.
- *Beta blocker:* Decreases the heart rate and cardiac output, which lowers blood pressure and makes the heart beat more slowly and with less force.
- *Combined alpha and beta blocker:* Combined alpha and beta-blockers are used as an IV drip for those patients experiencing a hypertensive crisis. They may be prescribed for outpatient high blood pressure use if the patient is at risk for heart failure.
- *Calcium channel blocker:* Interrupts the movement of calcium into the cells of the heart and blood vessels. May decrease the heart's pumping strength and relax blood vessels.
- *Cholesterol-lowering medication:* Various medications can lower blood cholesterol levels, but drug other than statins should only be used for patients in whom statins are not effective enough or who have serious side effects due to statin therapy.
- *Digitalis preparation:* Increases the force of the heart's contractions, which can be beneficial in heart failure and for irregular heartbeats.
- *Diuretic:* Causes the body to rid itself of excess fluids and sodium through urination. Helps to relieve the heart's workload. Also decreases the buildup of fluid in the lungs and other parts of the body, such as the ankles and legs. Different diuretics remove fluid at varied rates and through different methods.
- *Vasodilator:* Relaxes blood vessels and increases the supply of blood and oxygen to the heart while reducing its workload. Can come in pills to be swallowed, chewable tablets and as a topical application (cream).

Dual Antiplatelet Therapy (DAPT)

Patients who have had heart attacks, patients who are treated with stents in their coronary arteries, and some patients who undergo coronary artery bypass graft surgery (CABG) are treated at the same time with two types of antiplatelet agents to prevent blood clotting. This is called dual antiplatelet therapy (DAPT).

One antiplatelet agent is aspirin. Almost everyone with coronary artery disease, including those who have had a heart attack, stent, or CABG are treated with aspirin for the rest of their lives. A second type of antiplatelet agent, called a P2Y₁₂ inhibitor, is usually prescribed for months or years in addition to the aspirin therapy.

The type of medication and the duration of your treatment will vary based on a discussion with your healthcare provider weighing the risks of potential bleeding complications.

If you had a heart attack and a coronary artery stent placed, or you are being medically managed for your heart attack (specifically non-ST elevation myocardial infarction (NSTEMI), you should **also** be on a P2Y₁₂ inhibitor for approximately 6-12 months. In some cases, it may be advisable to be on DAPT for a longer duration. This will need to be discussed with your healthcare provider. There are three P2Y₁₂ inhibitors that doctors prescribe, which are clopidogrel, prasugrel, and ticagrelor. Studies have shown that two of these drugs (ticagrelor, prasugrel) are "stronger" than clopidogrel, and are a little better at decreasing the complications of blood clots. These two stronger agents, however, slightly increase bleeding. One of these drugs (prasugrel) should not be used by patients who have had a stroke or a transient ischemic attack (TIA). Which one these medications your doctor prescribes will be based on what he or she feels is best for you, based on your risk of blood clots and bleeding. For example, according to the [FDA](#), clopidogrel does decrease the risk of stroke and MI, but does not change the risk of death for specific patients. Ultimately, the type of medication and duration of treatment will be determined in conjunction with your healthcare provider.

This content was last reviewed March 2017.

Heart Disease in Women - Treatment

Treatment for [coronary heart disease](#) (CHD) usually is the same for both women and men. Treatment may include lifestyle changes, medicines, medical and surgical procedures, and [cardiac rehabilitation](#) (rehab).

The goals of treatment are to:

- Relieve symptoms.
- Reduce risk factors in an effort to slow, stop, or reverse the buildup of plaque.
- Lower the risk of blood clots forming. (Blood clots can cause a [heart attack](#).)
- Widen or bypass plaque-clogged coronary (heart) arteries.
- Prevent CHD complications.

Lifestyle Changes

Making lifestyle changes can help prevent or treat CHD. These changes may be the only treatment that some people need.

QUIT SMOKING

If you smoke or use tobacco, try to quit. Smoking can raise your risk for CHD and heart attack and worsen other CHD risk factors. Talk with your doctor about programs and products that can help you quit. Also, try to avoid secondhand smoke.

If you find it hard to quit smoking on your own, consider joining a support group. Many hospitals, workplaces, and community groups offer classes to help people quit smoking.

For more information about how to quit smoking, go to the Health Topics [Smoking and Your Heart](#) article and the National Heart, Lung, and Blood Institute's (NHLBI's) "[Your Guide to a Healthy Heart](#)."

FOLLOW A HEALTHY DIET

A healthy diet is an important part of a healthy lifestyle. A healthy diet includes a variety of vegetables and fruits. These foods can be fresh, canned, frozen, or dried. A good rule is to try to fill half of your plate with vegetables and fruits.

A healthy diet also includes whole grains, fat-free or low-fat dairy products, and protein foods, such as lean meats, poultry without skin, seafood, processed soy products, nuts, seeds, beans, and peas.

Choose and prepare foods with little sodium (salt). Too much salt can raise your risk for [high blood pressure](#). Studies show that following the [Dietary Approaches to Stop Hypertension](#) (DASH) eating plan can lower blood pressure.

Try to avoid foods and drinks that are high in added sugars. For example, drink water instead of sugary drinks, like soda.

Also, try to limit the amount of solid fats and refined grains that you eat. Solid fats are saturated fat and *trans* fatty acids. Refined grains come from processing whole grains, which results in a loss of nutrients (such as dietary fiber).

If you drink alcohol, do so in moderation. Research suggests that regularly drinking small to moderate amounts of alcohol may lower the risk of CHD. Women should have no more than one alcoholic drink a day.

One drink a day can lower your CHD risk by raising your HDL cholesterol level. One drink is a glass of wine, beer, or a small amount of hard liquor.

If you don't drink, this isn't a recommendation to start using alcohol. Also, you shouldn't drink if you're pregnant, if you're planning to become pregnant, or if you have another health condition that could make alcohol use harmful.

Too much alcohol can cause you to gain weight and raise your blood pressure and triglyceride level. In women, even one drink a day may raise the risk of certain types of cancer.

For more information about following a healthy diet, go to the NHLBI's "[Your Guide to Lowering Your Blood Pressure With DASH](#)" and the U.S. Department of Agriculture's [ChooseMyPlate.gov](#) Web site. Both resources provide general information about healthy eating.

BE PHYSICALLY ACTIVE

Regular physical activity can lower many CHD risk factors, including high LDL cholesterol, [high blood pressure](#), and excess weight.

Physical activity also can lower your risk for diabetes and raise your HDL cholesterol level. (HDL cholesterol helps remove cholesterol from your arteries.)

Talk with your doctor before you start a new exercise plan. Ask him or her how much and what kinds of physical activity are safe for you.

People gain health benefits from as little as 60 minutes of moderate-intensity aerobic activity per week. Walking is an excellent heart healthy exercise. The more active you are, the more you will benefit.

For more information about physical activity, go to the U.S. Department of Health and Human Services' "[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](#)."

MAINTAIN A HEALTHY WEIGHT

[Overweight and obesity](#) are risk factors for CHD. If you're overweight or obese, try to lose weight. Cut back your calorie intake and do more physical activity. Eat smaller portions and choose lower calorie foods. Your health care provider may refer you to a dietitian to help you manage your weight.

A BMI of less than 25 and a waist circumference of 35 inches or less is the goal for preventing and treating CHD. BMI measures your weight in relation to your height and gives an estimate of your total body fat. You can use the NHLBI's [online BMI calculator](#) to figure out your BMI, or your doctor can help you.

To measure your waist, stand and place a tape measure around your middle, just above your hipbones. Measure your waist just after you breathe out. Make sure the tape is snug but doesn't squeeze the flesh.

For more information about losing weight or maintaining a healthy weight, go to the NHLBI's [Aim for a Healthy Weight](#) Web site.

STRESS AND DEPRESSION

Research shows that getting upset or angry can trigger a heart attack. Also, some of the ways people cope with stress—such as drinking, smoking, or overeating—aren't heart healthy.

Learning how to [manage stress](#), relax, and cope with problems can improve your emotional and physical health.

Having supportive people in your life with whom you can share your feelings or concerns can help relieve stress. Physical activity, yoga, and relaxation therapy also can help relieve stress. You may want to consider taking part in a stress management program.

Depression can double or triple your risk for CHD. Depression also makes it hard to maintain a heart healthy lifestyle.

Talk with your doctor if you have symptoms of depression, such as feeling hopeless or not taking interest in daily activities. He or she may recommend counseling or prescribe medicines to help you manage the condition.

Medicines

You may need medicines to treat CHD if lifestyle changes aren't enough. Medicines can help:

- Reduce your heart's workload and relieve CHD symptoms
- Decrease your chance of having a heart attack or dying suddenly
- Lower your LDL cholesterol, blood pressure, and other CHD risk factors
- Prevent blood clots
- Prevent or delay the need for a procedure or surgery, such as [angioplasty](#) (AN-jee-oh-plas-tee) or [coronary artery bypass grafting](#) (CABG)

Women who have [coronary microvascular disease](#) and [anemia](#) may benefit from taking medicine to treat the anemia.

Women who have broken heart syndrome also may need medicines. Doctors may prescribe medicines to relieve fluid buildup, treat blood pressure problems, prevent blood clots, and manage stress hormones. Most people who have broken heart syndrome make a full recovery within weeks.

Take all of your medicines as prescribed. If you have side effects or other problems related to your medicines, tell your doctor. He or she may be able to provide other options.

Menopausal Hormone Therapy

Recent studies have shown that menopausal hormone therapy (MHT) doesn't prevent CHD. Some studies have even shown that MHT increases women's risk for CHD, [stroke](#), and breast cancer.

However, these studies tested MHT on women who had been postmenopausal for at least several years. During that time, they could have already developed CHD.

Research is ongoing to see whether MHT helps prevent CHD when taken right when menopause starts. While questions remain, current findings suggest MHT shouldn't routinely be used to prevent or treat CHD.

Ask your doctor about other ways to prevent or treat CHD, including lifestyle changes and medicines. For more information about MHT, go to the NHLBI's [Postmenopausal Hormone Therapy](#) Web site.

Procedures and Surgery

You may need a procedure or surgery to treat CHD. Both angioplasty and CABG are used as treatments. You and your doctor can discuss which treatment is right for you.

PERCUTANEOUS CORONARY INTERVENTION

Percutaneous coronary intervention (PCI), commonly known as angioplasty (AN-jee-oh-plas-tee), 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 a blood vessel to the narrowed or blocked coronary artery. Once in place, the balloon is inflated to compress the plaque against the wall of the artery. This restores blood flow through the artery.

PCI can improve blood flow to your heart and relieve chest pain. A small mesh tube called a [stent](#) usually is placed in the artery to help keep it open after the procedure.

For more information, go to the Health Topics [PCI](#) article.

CORONARY ARTERY BYPASS GRAFTING

CABG is a type of surgery. During CABG, a surgeon removes arteries or veins from other areas in your body and uses them to bypass (that is, go around) narrowed or blocked coronary arteries.

CABG can improve blood flow to your heart, relieve chest pain, and possibly prevent a heart attack.

For more information, go to the Health Topics [Coronary Artery Bypass Grafting](#) article.

Cardiac Rehabilitation

Your doctor may prescribe cardiac rehab for [angina](#) or after angioplasty, CABG, or a heart attack. Almost everyone who has CHD can benefit from cardiac rehab.

Cardiac rehab is a medically supervised program that can improve the health and well-being of people who have heart problems.

The cardiac rehab team may include doctors, nurses, exercise specialists, physical and occupational therapists, dietitians or nutritionists, and psychologists or other mental health specialists.

Cardiac rehab has two parts:

- **Exercise training.** This part of rehab helps you learn how to exercise safely, strengthen your muscles, and improve your stamina. Your exercise plan will be based on your personal abilities, needs, and interests.
- **Education, counseling, and training.** This part of rehab helps you understand your heart condition and find ways to lower your risk for future heart problems. The rehab team will help you learn how to cope with the stress of adjusting to a new lifestyle and with your fears about the future.

For more information, go to the Health Topics [Cardiac Rehabilitation](#) article.

<https://www.nhlbi.nih.gov/health-topics/heart-disease-women>

Tips for Taking Heart Medications

With all of the different medicines available for all of the things that ail us, keeping track of them can be overwhelming. If you have a **heart condition**, managing your medicines can be doubly difficult. Chances are that you take more than one medicine daily, whether it's a prescription or over-the-counter (OTC) drug. Each medicine may treat a different symptom or problem, and each comes with separate instructions.

Try these tips for taking heart medication to help keep you and your heart healthy.

1. Talk with your doctor and pharmacist

You need to take all your medicines as directed for them to be most effective. Your doctor and pharmacist can help you better understand the correct amounts and when and how often to take both prescription and OTC medicines. To be fully informed, talk with your doctor. Whether you're taking prescribed medicines, OTC drugs or both, get the answers to these questions:

- Should I take this medicine instead of another drug that I've been prescribed, or is this an additional treatment?
- What is this medicine supposed to do for me?
- What are some common side effects?
- Are there any interactions with my other prescriptions or OTC medicines?
- Which foods, supplements and activities could interfere with this medicine?
- Are there any special storage requirements?
- What should I do if I miss a dose?
- How long does it take this drug to take effect?

2. Share your information

The American Heart Association recommends making your doctor and pharmacist aware of all the medicines you are taking. This means both prescription and OTC medicines. Let your physician and pharmacist know about any allergies you have. Don't forget to mention which supplements, herbs, or vitamins you use. Some medicines, foods and supplements or vitamins could conflict with each other and cause problems. If possible, try to go to the same pharmacy each time you fill a prescription.

There are benefits to having all of your prescriptions filled at one pharmacy, says Selig D. Corman, R.Ph., director of professional affairs at the Pharmacists Society of the State of New York in Albany. "That provides a complete patient profile so the pharmacist can efficiently counsel proper use of medicines and prevent possible interactions. Also, the pharmacist can determine if the patient is compliant because of intervals between refills." If the interval between refills is too long, it indicates that a patient could be skipping doses.

On the flip side, notes Selig, if the time between refills is too frequent, this could mean that a patient is taking more medicine than the doctor has prescribed. For your safety, your pharmacist can monitor the timeliness of your refills and alert you if anything out of the ordinary raises a red flag.

It's also important to try and buy any OTC medicines at the same pharmacy where you get your prescriptions filled. That way, if you have questions about whether an OTC medicine will interact with prescription medicines you are taking, the pharmacist can let you know because he or she will have access to your prescription records.

3. Mind your meds

Keeping track of your medicines on a daily basis is also important. This can become a challenge if you have to take several different medicines each day. But there are ways to help you remember what you have already taken on any given day and what you still need to take. A plastic pillbox marked with days of the week can be very useful for this purpose. Just be sure to keep it and all medicines up and out of the sight of children who are in, or may visit your home.

You can also keep a list with the names and dosages of all the medicines you're taking, both prescription and OTC. Be sure to include when you should take them. "The list should be kept in [your] wallet," says Sophia De Monte, R.Ph., spokeswoman for the American Pharmacists Association. This way you always have it with you. It's also a good idea to put the list in a visible place at home, like on your fridge.

"For convenience," she adds, "dosing is scheduled with an easily remembered event—at meals, bedtime, first thing in the morning, breakfast and dinner." It's important to follow labeled dosing instructions, so make taking your medicines part of your daily routine. Associate a dose with a daily event.

Upon taking each dose, check off a box on a piece of paper or a calendar. You can even download a medicine tracker app to your smartphone.

Be consistent

"It's very important to take your medicines consistently," says Daniel Spogen, M.D., a professor and chairman of family medicine at the University of Nevada, Reno. "Almost always, you want to take them at the same time of day."

Of course, there are times when you can't. For instance, you may not feel up to taking your medicine when you feel sick to your stomach or have a cold or the flu. When you can't take your medicine at the usual time, you might be able to take it later that day. But be sure to ask your doctor first. This helps keep a steady level of medicine in your bloodstream, Spogen says.

Play it safe

Managing your medicines may be a bit time-consuming. But it's important if you want to avoid problems from getting too much or too little of what you need. Taking some extra time to keep your prescription and OTC medicines safe and properly taking the medicines your doctor recommends will go a long way in helping you stay healthy.

Learn more about [managing your heart medications](#) on Go Red For Women.



Managing Heart Disease

Jamie Napolitano is living proof that heart disease doesn't have to end someone's life, and that women with heart disease can still achieve their dreams. "We're worth it, and we can't do the things that we're passionate about unless we stay healthy and strong," says Jamie. She is among the hundreds of thousands who have learned to make healthy changes in their lives to manage heart disease.

But let's face it, there's a lot to deal with. Doctor appointments on a regular basis. Getting hooked up to a bunch of machines. Hearing the same "How are you doing?" questions over and over. All of these things can take their toll, making the management side of your heart disease diagnosis unsettling.

Tackling your emotions

Getting emotional support from others is an important step on your road to recovery. So cut yourself some slack and learn to be your own biggest cheerleader. Nobody knows the importance of that better than survivor **Migdalia Rivera**, who, since her diagnosis, sports a new attitude that she calls "Latinalicious." Migdalia learned that she has to put herself first, because, as she explains, "I love my children and my family, so I have to make sure that *my* health becomes a priority."

As a woman, you know that the role of caregiver to others often trumps your own needs. But Migdalia, and other women who Go Red, know that when it comes to managing heart disease, all that needs to change.

Toss pride out the window

In theory, that sounds easy. But the reality is: it can be hard to ask for help. If you feel like this is too much to deal with on your own, put your pride aside and seek assistance. Get counseling, turn to **support groups** – whatever feels right for you. Think beyond opening up to those who love and care about you. Having a support system outside of your immediate surroundings will make dealing with heart disease less stressful. And remember: You're not alone.

Go Red with like-minded women

No matter how hard it gets, and no matter how many times you feel like giving up, remember you *can* beat this. And you will. Because with the right information, education and care, heart disease in women can be treated, prevented and even ended. That's because women who Go Red are more likely to make healthy choices, like these:

- Nearly 90 percent have made at least one healthy change in their daily lives
- More than 1/3 have lost weight
- More than 50 percent have increased their exercise
- 6 out of 10 have made healthy changes to their diets
- More than 40 percent have checked their cholesterol levels
- 1/3 have talked with their doctors about developing heart health plans

Take command of your recovery

- **Learn to love labels.** Focus on filling your life with **healthy eating** choices.
- **Find ways to stay active.** You don't have to become a gym rat, but you do have to **get moving**.
- **Go easy on yourself.** Try to manage your own expectations and don't expect miracles overnight.
- **De-stress.** Whatever puts you in a calm and happy zone, find the time to do it.
- **Don't think you have to change your plans.** Ultimately, being a survivor means living. So, try to resume a normal lifestyle.

Tips to Combat Depression After a Stroke



It's not uncommon for depression to follow a stroke, in both the stroke survivor and the caregiving partner. A **recent study on the factors that influence depression after a stroke** finds that optimism and self-esteem in the caregiver can actually help combat the patient's depression.

The study, presented during the annual meeting of the International Stroke Conference, followed 112 depressed survivors and their partners for up to two months. It differed from past studies because it looked at the survivor and caregiver as a team, rather than as individuals.

"We usually have been focused on the outcome of the stroke survivor, but we found that the self-esteem and optimism of the spouse caretaker is related to the patient's depression," says study author Misook Chung, Ph.D., R.N., and associate professor in the University of Kentucky's College of Nursing. "When the spouse has a high level of self-esteem and optimism, the patient has lower levels of depression," Chung says.

Because the spouse or partner plays such a vital role in the stroke victim's recovery, it's important that he or she get intervention and make emotional health a priority.

Kim Feingold, clinical psychologist and director of cardiac behavioral medicine at Northwestern's Bluhm Cardiovascular Institute, says she counsels caregivers all the time to be aware of their own needs and not just those of their partner.

"Caregiver burden is something that we know a lot about," she says. "The chronic stress of caregiving can impact physical and mental health."

Feingold shared the following tips to help prevent depression in stroke survivors and their caregivers during recovery.

Take care of yourself

“Caregivers have the tendency to sort of throw everything into the caregiving bucket, and sometimes their own health can sort of fall to the wayside,” says Feingold. She says that it’s important to take care of yourself, as a caregiver, because your partner needs you to be healthy and strong. She advises caregivers to get plenty of sleep, eat a healthy diet and exercise. “Studies show that exercise can be as effective in combatting depression as medication for depression,” she says.

Take breaks

It can be hard for the caregiver to take time away, but in the long run, the respite is helpful for both parties. By taking some solo time, the caregiver will reduce stress, which will make him or her calmer and more refreshed. “When they step back into that caregiver role, they can be productive and helpful, and, as a result, there should be less deterioration in their own emotional and physical health,” says Feingold.

Help the patient identify things that are within his or her control

It’s easy to focus on loss following a stroke. One helpful method of reducing depression is to hone in on things that remain within the patient’s control. Point out that there are still many things in life that are her responsibility, such as taking medication, showing up at appointments, socializing with friends and family, participating in rehabilitation and more. Remind her that she still plays an active role in her own life.

Acknowledge the loss

While it’s helpful to focus on the positive, it’s also important to acknowledge and accept what’s been lost. Grief and negative emotions are a natural part of recovery—for both the patient and the caregiver—and should be recognized, whether it’s on your own, with a loved one or through therapy.

Stay active and social

Both depression and physical limitations pose a huge challenge to social engagement. But it’s important for both the patient and caregiver to remain active. “Pushing yourself to be social or to engage in positive and pleasurable activities can improve emotional functioning and reverse depression,” says Feingold

Learn more about stroke from the [American Stroke Association](#).

How to Stay Social After Heart Disease

As a woman, a **diagnosis of heart disease** can lead to many questions when it comes to moving forward with your life. And after you've answered the vital ones, like what to eat and how to exercise, you may be left wondering about the little things (which are still important), like your social life.

A heart-healthy diet doesn't have to be the end of your girls' night out or happy hour with coworkers. It just requires a bit of strategic planning to make sure your hard work and healthy decisions don't get lost in the social shuffle. Read on for quick tips on staying social after heart disease from nutritionist Vilma Andari.

1. Research the restaurant prior to dining

The first step you can take to ensure heart-healthy dining when you're out is to review the menu before you go, Andari says. This will give you a clear idea of what's available and help you avoid making a snap decision while ordering. If you're going to a chain restaurant, most offer a healthier version of their menu, Andari explains. "Ordering from the low-cal menu can save you up to 500 calories," she says. (So, be sure to ask for one if it's not already on the table.)

2. Learn to dissect the menu

As you're reviewing the restaurant's menu, Andari strongly recommends avoiding dishes that contain cream, gratin (like scalloped potatoes) and heavy cheese. To reduce sodium intake, she also recommends avoiding soy-sauce-based dishes, like stir-fry. If minimizing sodium is a priority to you, you can also ask that the chef not use salt when preparing your food. "Grilled or steamed dishes are your best bet," Andari says.

3. Stay moderate

Meal sizes at restaurants can be overwhelmingly large — so keep your heart health in check with portion control. Andari suggests drinking water while dining, and avoiding alcohol. (Water will help you feel full while you eat.) Another way to moderate your meal is by eating slowly. To make sure you're doing so, Andari says to chew your food 15 times per bite.

Finally, if you expect your dinner to be large and are out with a friend who shares your taste, ask the waiter if you two can split the meal. Or, if you're not in the mood to share, ask your waiter to box up half your dish.

4. Keep liquid calories and fatty snacks in check

An after-work happy hour is a great opportunity to catch up with friends and coworkers, but greasy snacks and sugary cocktails can make it a danger zone for your heart. Use moderation when drinking at happy hours (or anytime) and try to stick to red wine if you can. If you're avoiding alcohol, Andari says stick to diet beverages, ice tea and seltzer water. (Remember, you can always dress up seltzer with lemon or mint.) If there are small bites at your function, steer clear of dips and fried foods, says Andari, and see if you can convince the host to order something healthy, like fresh veggies or edamame.

Using Diet and Dancing to Fight Heart Disease



This mother and daughter are using diet and dancing to fight heart disease.

Genetics can play a role in determining who is at the greatest risk for heart disease. But in the case of Lillie Wells and her daughter, Torrye Wells, their family bond has also served as the strongest force in improving their health.

It wasn't long ago that Lillie, who is 72, started feeling a small, consistent pain in her heart. Soon after, upon returning home from an outing with Torrye, 40, her daughter became alarmed by her mother's heavy breathing after walking up a single flight of stairs.

"She ran up the stairs and she was panting like a tiger," Torrye recalls. "I was like, 'Oh my gosh, what in the world is wrong with you?'"

Lillie, who is the youngest of 14 children, knew that her family had a history of heart problems. So, she made an appointment at Northwestern Memorial Hospital's Bluhm Cardiovascular Institute in Chicago, Illinois. There, she learned that she had an enlarged heart and high blood pressure. Her cardiologist, Kameswari Maganti, MD, who is the medical director of cardiac rehabilitation, put her on medication and explained how she needed to focus on eating better and getting fit. If she didn't, she was putting her life in danger.

The visit wasn't just eye-opening for Lillie, it really resonated with Torrye as well. Torrye's father, who had diabetes, had passed away two years prior from vascular disease. Now, learning about her mother's problem, she was really worried. "I'm in a direct line to those things," she said. "I don't want to be diagnosed." So, together, both women vowed to make some immediate changes.

Lillie began going to the gym, and, at 72, rekindled her long-standing love for basketball. "You've got to try it," she beams. She also uses the elliptical for an hour at a time and loves the way it makes her feel. "I feel so good when I get off of it. I feel like I can go again, but she won't let me!" she says, referring to her daughter. Torrye started going to Zumba, and before she knew it, she was at the gym six days a week. Often, the two would go together, taking Zumba classes and supporting one another. For Lillie, dancing was brand-new territory. "When I was growing up, we weren't allowed to dance, so I never did, but I try now. It works out the thighs and the arms and everything," she says. "It is so good!" she says. "It makes you feel good all over."

At the same time, they both began eating better. Lillie cut white bread out of her diet, switching to wheat and limiting herself to a slice a day. She began making her own soups, and baking chicken for dinner every night. She even gave up consuming a few old favorites—buttermilk mixed with half-and-half and slices of homemade cornbread. Torrye started adding more whole grains and fruit into her diet, and really began focusing on portion control. "For lunch, I'm now eating half the portion I used to have," she says.

Both mother and daughter saw results quickly. In the last year, Lillie's doctor was able to cut her medications in half. She lost 25 pounds and a lot of inches, going from a size 16 to a size 12. In four months, her goal is to be a size eight. Torrye lost 50 pounds and went from a size 18 to a size 12.

Both women say they feel fantastic. So fantastic that they've decided to extend the challenge and get even more family members involved. "Everyone is in agreement that we're going to start working out together and to lose weight as a family," says Torrye.

Read more [real stories by real women and share your own](#) on Go Red For Women.

Recovering from a Stroke: Tai Chi Exercises



If you've survived a stroke and are in recovery, you might be wondering about your next steps and how to get your life back to a sense of normalcy. One easy step may actually be thousands of years old. A **recent study showed** that adding the Chinese practice of Tai Chi to your stroke recovery and rehabilitation routine may help increase balance and functionality.

The study, presented at the American Stroke Association's International Stroke Conference 2013, showed that among stroke survivors, those who practiced Tai Chi experienced the fewest falls over the trial period.

Tai Chi is a martial art dating back to ancient China. It includes physical movements, mental concentration and relaxed breathing.

"The main physical benefits of Tai Chi are better balance, improved strength, flexibility and aerobic endurance," says Ruth E. Taylor-Piliae, Ph.D., R.N., the study's principal investigator and assistant professor at the University of Arizona College of Nursing in Tucson, AZ. "Psycho-social benefits include less depression, anxiety and stress, and better quality of life."

Tai Chi can also be a great long-term solution to improve fitness. "Tai chi is a practice," explains Tony Burris, a licensed acupuncturist and Tai Chi teacher. "In other words, it is meant to be practiced daily...the movements, breathing patterns and principles of body awareness can only be ingrained with consistent practice." Because of this, he suggests practicing short and simple forms, like the ones below.

To start your own practice, consider trying a class. "The best way [to start] is to find a teacher that you feel comfortable with and you enjoy," Burris says. "The best teacher is the one who inspires you to show up to class regularly." In addition to learning the correct forms for poses, a class setting will encourage participation and generates good group energy and support.

To practice Tai Chi on your own, try these two moves at home in front of a mirror.

Tai Chi Exercise 1 — The Beginning Movement

Stand with feet shoulder-width apart, knees bent about one inch, lower back “dropped” or flattened in a relaxed manner. Arms should be at the sides with palms facing rearward and fingers gently extended (not rigid). Imagine holding an egg in each armpit: Gentle enough to hold it in place but not close enough to your body to crush it.

- Head should be facing straight ahead as if a thread attached to the crown of the head was gently pulling up, thus keep the back of the neck straight.
- Breathe into the lower abdomen. Inhale, raise both arms straight up in front of you to shoulder level, draw gently back toward your body as if sliding across a table.
- Exhale and allow your hands to “float” gently back down to your sides. Repeat seven times. It’s very important to coordinate the breathing with the movement of the arms.

Tai Chi Exercise 2 — The Tai Chi Ball

- Stand with feet slightly wider than shoulder-width apart. Both knees should be bent about one inch, lower back “dropped” or flattened in a relaxed manner. Head should be facing straight ahead as if a thread attached to the crown of the head was gently pulling up, thus keep the back of the neck straight.
- Both palms should face the lower abdomen (below the belly button) about eight inches off the body. Gaze between your palms and body.
- Inhale, expand the lower abdomen, rise slightly out of your knee bend and allow your palms to move slightly away from your belly.
- Exhale, relax the lower abdomen, sink back into your knee bend and allow your palms to come back closer to your body. Repeat. It’s important to coordinate the breathing pattern with the hand and knee movement.
- This exercise is called “Tai Chi Ball” because your palms mimic the expansion and deflation of your lower abdomen as if you were inflating and deflating a ball.

Learn more about [living with heart disease](#) on Go Red.

Sex After Heart Attack: Talk with Your Doctor

Sexual health can be an important part of your overall health—and a heart attack should not get in the way. Female heart attack patients and healthcare providers are encouraged to engage in an open dialogue about their sexual health as part of treatment.

“Most women don’t have discussions with their doctors about resuming sex after a heart attack even though many experience fear or other sexual problems,” said Emily M. Abramsohn, M.P.H., a researcher at the University of Chicago and lead author of a [recent study on women’s sex health after a heart attack](#) featured in the *Journal of the American Heart Association*. “We wanted to get a better understanding of women’s sexual recovery and how it could be improved.”

Most women initiated conversation with their doctors, resumed sexual activity within four weeks

In this study, researchers surveyed 17 women in depth about their sex lives before and after their heart attacks. The women, average 60 years old, were married or in long-term relationships. Researchers found that after their heart attacks:

- Most women and many of their partners were afraid to have sex again. They wondered when it was safe to resume sex and how much exertion their hearts could handle.
- Despite this fear, most women resumed having sex, many within four weeks.
- Most women wanted to have sex to be close to their partner again and get back to a “normal” life.
- Of the few women who talked with their doctors about resuming sex, most initiated the discussion.

Ask your doctor about your concerns

Cardiologists could ease concerns about sex after a heart attack if they talked openly with their patients about what to expect, Abramsohn said. The discussion should start while the woman is still in the hospital and continue throughout her recovery with other members of her healthcare team.

“It’s important for you and your partner to know you’re not alone in your confusion and fear about returning to sex after a heart attack,” Abramsohn said. “If your doctor isn’t giving you information to help you feel more comfortable about it, it’s important for you to ask them for it.”

How your doctor can help

According to recommendations by American Heart Association, healthcare providers treating heart attack patients should do the following relating to sexual health:

- Provide routine assessments after a cardiac event and during follow-up visits to determine if the patient is healthy enough to resume sexual activities.
- Give individualized, structured counseling based on specific needs and medical condition.
- Discuss recommended positions, how to be intimate without having sexual intercourse and when to resume sexual activity.

Exercise stress testing is recommended for some patients to determine if the heart is strong enough to resume sexual activity. Physical activities such as brisk walking may be suggested for some heart patients before resuming sexual activity. In addition, while heart medications can affect sex drive and function, patients should talk to their healthcare provider before stopping any medications. A healthcare provider can determine if sexual problems are caused by the drug or an underlying condition such as depression.

Make sure you speak with your doctor to receive the treatment you need. Learn more about [sex and heart disease](#) on Go Red For Women.

Find AHA-Accredited Hospitals Near You



Are you getting the highest quality of healthcare?

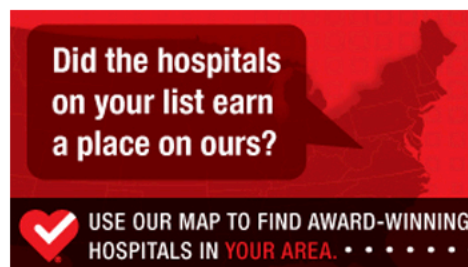
Visits to a hospital or healthcare provider can be confusing. All the forms, medical lingo and procedures can keep you from stopping to think about an important, basic question: Am I getting quality care?

The American Heart Association and American Stroke Association (AHA/ASA) want to make that question easier to answer and help you find AHA-Accredited hospitals near you.

AHA's Get With The Guidelines helps improve patient outcomes

For more than a decade we've worked with healthcare providers and facilities across the nation to help make sure patients get proven, quality treatment every time. Our **Get With The Guidelines**® programs provide hospital teams with the most up-to-date research-based clinical guidelines for heart and stroke care. Studies have shown that consistent use of these guidelines increases survival rates and lowers patients' risk of ending back up in the hospital. Since 2001, Get With The Guidelines programs have touched the lives of more than 4 million patients.

Search our map, look for the Heart-Check mark



Check out our searchable [map](#) to find hospitals near you that participate in our quality care improvement programs. These include facilities recognized by the AHA/ASA for consistently following scientific treatment guidelines for heart disease and stroke treatment. Accredited and certified hospitals are allowed to display the American Heart Association's familiar Heart-Check mark.

Click the following link for the searchable map: <https://hospitalmaps.heart.org/AHAMAP/map/qimap.jsp>

Skills and Abilities to Focus On

Young adults transitioning to adult health care providers need to develop certain self-advocacy, self-care, and self-management skills:

- Ability and willingness to tell the doctor about their history, current symptoms, lifestyle, and self-care in just a few minutes (including carrying their own records and a summary of their medical history).
- Ability to ask questions about his or her condition and how it will affect school, work, recreation, and social life.
- Ability to tell the doctor about his or her needs for education, technology, and accommodations and discuss how their condition affects or might be affected by these.
- Willingness to follow medical recommendations that have been mutually developed by youth with their doctor.
- More independence in following up with referrals and communicating with medical and insurance providers.
- More involvement in keeping yourself well
 - diet and weight control
 - exercise and recreation
 - following medication
 - treatment and hygiene regimens
 - limiting risk-taking behaviors (such as drinking alcohol, smoking, taking non-prescription drugs, or unsafe sexual practices)
 - getting help when you feel angry, lonely, or sad for long periods.
- Being more aware of their physical and mental symptoms and health needs and informing your doctor before they have a serious medical crisis.
- Developing a plan for when you need emergency care:
 - when to consult with the doctor
 - what hospital to report to
 - what care he or she wants and does **not** want

Adapted from [Finding and Using Adult Health Care](#) KY
Commission for Children with Special Health Care Needs KY
TEACH Project


6 Ways to Be Your Own Health Advocate

Don't be afraid to ask questions, maintain your records and seize control of your health.



By Elizabeth Renter, Contributor Feb. 2, 2015, at 9:40 a.m.



Being proactive can help patients to better maintain their health.  (GETTY IMAGES)

THERE WAS A TIME WHEN A doctor's word was final – his or her education and experience was considered the foundation of unquestionable wisdom. But now, patients understand they also play an important role in their health care. By [advocating for themselves](#) and getting involved in the decision-making process, they can reap numerous benefits.

“There has been a solid, steady push over recent years toward patient empowerment,” says Linda Adler, CEO of Pathfinders Medical Advocacy and Consulting. “It’s been largely encouraged by dedicated patients and some providers who believe that health care isn’t only a right, but that people should have greater control over what happens to their own bodies.”

By being involved in your own health advocacy, you not only gain a [greater sense of control](#), but also an increased confidence over your decisions, greater medical literacy, better treatment adherence and even better health outcomes.

1. Understand how your health insurance works.

Many Americans don't understand the basics of their coverage, and understandably so – [health insurance is complicated](#). A recent survey from the Kaiser Family Foundation found that more than 4 in 10 respondents don't understand basic [health insurance terms](#), and even fewer could calculate how much a patient would owe under certain hospitalization circumstances. Knowing how your insurance works helps you navigate the health care system with less chance of ending up with costly, unexpected medical bills.

2. Don't be afraid to ask questions.

Adler says patients should [prepare for their doctor's appointments](#), making a list of questions and concerns ahead of time. Though many patients are nervous their questions may disrupt an amicable doctor-patient relationship, she says this isn't the case.

"You're typically not going to have a lot of time with your provider," she explains, "so it's in your interest to know what you want going in."

She recommends patients even rehearse their questions, with the ultimate goal of nurturing a partnership with your doctor. Eventually, you can get past a one-way, they talk, you listen relationship. "It's absolutely possible to have a respectful conversation, even a negotiation, without feeling any discomfort or alienation."

3. Maintain your own records.

If you've ever switched doctors or seen a specialist, you know what a hassle it can be to have your records transferred. With the growing prevalence of electronic health records, [maintaining your own copies](#) is easier than ever. By keeping tabs on your own documents, you won't have to worry as much about them getting lost in the shuffle, and you can see exactly what your doctors are seeing.

4. Review your medical bills for errors.

An estimated [8 in 10 medical bills contain errors](#) – errors that go undetected without the sharp eye of an empowered patient. Medical bills can be difficult to decipher. Adler recommends patients ask questions as they arise, even if they seem “obvious or ridiculous.”

“When it comes to your medical bills, play defense. Assume that if something can go wrong, it will, and take every possible step to make sure nothing does,” she says. “Remember, it’s your money, so you’re in charge.”

5. Know when a second opinion is appropriate.

One in 20 Americans fall victim to outpatient diagnostic errors, according to the Agency for Healthcare Research and Quality. And even if you’re comfortable with your doctor’s diagnosis, seeking the [input of another physician](#) could save you from unnecessary medical costs and unnecessary stress.

Generally, any recommendations for major non-emergency surgery, any questions about the validity of your diagnosis and any concerns you may have about not being heard are good justifications for a second opinion. Just make sure to check your [insurance coverage](#) before you make that additional appointment.

6. Take advantage of free preventive care under the Affordable Care Act.

With the ACA came access to [free preventive care](#). If you’re insured under an ACA-compliant plan – and if your health insurance began after March 31, 2010 you likely are – you can take advantage of at least [15 free health screenings](#) and services. Additional preventive services are available for women, children and older adults. These free services give you an additional reason to visit your doctor, keep the lines of communication open and stay on top of any potential health concerns.

You don’t need to feel intimidated by your medical providers. They work for you, not the other way around. And when the common ground in these relationships is your health, it’s in your best interest to be as empowered as possible.

QUESTIONS TO ASK YOUR *doctor*

Getting answers to these questions will give you vital 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. What is my blood pressure? What does it mean for me, and what do I need to do about it?
3. What are my cholesterol numbers? (These include total cholesterol, LDL or "bad" cholesterol, HDL or "good" cholesterol, and triglycerides.) What do they mean for me, and what do I need to do about them?
4. What are my "body mass index" and waist measurement? Do they indicate that I need to lose weight for my health?
5. What is my blood sugar level, and does it mean I'm at risk for diabetes?
6. What other screening tests for heart disease do I need? How often should I return for checkups for my heart health?
7. What can you do to help me quit smoking?
8. How much physical activity do I need to help protect my heart?
9. What is a heart-healthy eating plan for me? Should I see a registered dietitian or qualified nutritionist to learn more about healthy eating?
10. How can I tell if I'm having a heart attack?

To learn more, visit www.hearttruth.gov

Source: *The Healthy Heart Handbook for Women*, National Heart, Lung, and Blood Institute (2007).

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WHAT'S *your* RISK?

Here is a quick quiz to find out your risk of a heart attack. If you don't know some of the answers, check with your health care provider.

	Yes	No	Don't Know
Do you smoke?			
Is your blood pressure 140/90 mmHg or higher, OR have you been told by your doctor that your blood pressure is too high?			
Has your doctor told you that your total cholesterol level is 200 mg/dL or higher, OR your HDL (good cholesterol) is less than 40 mg/dL?			
Has your father or brother had a heart attack before age 55, OR has your mother or sister had one before age 65?			
Do you have diabetes OR a fasting blood sugar of 126 mg/dL or higher, OR do you need medicine to control your blood sugar?			
Are you over 55 years old?			
Do you have a body mass index (BMI) score of 25 or more?			
Do you get less than a total of 30 minutes of physical activity on most days?			
Has a doctor told you that you have angina (chest pains), OR have you had a heart attack?			

If you answered "yes" to any of these questions, you're at an increased risk of having a heart attack.

To learn more, visit www.hearttruth.gov

Source: *The Healthy Heart Handbook for Women*, National Heart, Lung, and Blood Institute (2007).

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What You Can Do To Stay Safe

The best way you can help to prevent errors is to be an active member of your health care team. That means taking part in every decision about your health care. Research shows that patients who are more involved with their care tend to get better results.

Medicines

1. Make sure that all of your doctors know about every medicine you are taking.

This includes prescription and over-the-counter medicines and dietary supplements, such as vitamins and herbs.

2. Bring all of your medicines and supplements to your doctor visits.

"Brown bagging" your medicines can help you and your doctor talk about them and find out if there are any problems. It can also help your doctor keep your records up to date and help you get better quality care.

3. Make sure your doctor knows about any allergies and adverse reactions you have had to medicines.

This can help you to avoid getting a medicine that could harm you.

4. When your doctor writes a prescription for you, make sure you can read it.

If you cannot read your doctor's handwriting, your pharmacist might not be able to either.

5. Ask for information about your medicines in terms you can understand—both when your medicines are prescribed and when you get them:

- What is the medicine for?
- How am I supposed to take it and for how long?
- What side effects are likely? What do I do if they occur?
- Is this medicine safe to take with other medicines or dietary supplements I am taking?
- What food, drink, or activities should I avoid while taking this medicine?

6. When you pick up your medicine from the pharmacy, ask: Is this the medicine that my doctor prescribed?

7. If you have any questions about the directions on your medicine labels, ask.

Medicine labels can be hard to understand. For example, ask if "four times daily" means taking a dose every 6 hours around the clock or just during regular waking hours.

8. Ask your pharmacist for the best device to measure your liquid medicine.

For example, many people use household teaspoons, which often do not hold a true teaspoon of liquid. Special devices, like marked syringes, help people measure the right dose.

9. Ask for written information about the side effects your medicine could cause.

If you know what might happen, you will be better prepared if it does or if something unexpected happens.

Hospital Stays

10. If you are in a hospital, consider asking all health care workers who will touch you whether they have washed their hands.

Handwashing can prevent the spread of infections in hospitals.

11. When you are being discharged from the hospital, ask your doctor to explain the treatment plan you will follow at home.

This includes learning about your new medicines, making sure you know when to schedule follow-up appointments, and finding out when you can get back to your regular activities.

It is important to know whether or not you should keep taking the medicines you were taking before your hospital stay. Getting clear instructions may help prevent an unexpected return trip to the hospital.

Surgery

12. If you are having surgery, make sure that you, your doctor, and your surgeon all agree on exactly what will be done.

Having surgery at the wrong site (for example, operating on the left knee instead of the right) is rare. But even once is too often. The good news is that wrong-site surgery is 100 percent preventable. Surgeons are expected to sign their initials directly on the site to be operated on before the surgery.

13. If you have a choice, choose a hospital where many patients have had the procedure or surgery you need.

Research shows that patients tend to have better results when they are treated in hospitals that have a great deal of experience with their condition.

Other Steps

14. Speak up if you have questions or concerns.

You have a right to question anyone who is involved with your care.

15. Make sure that someone, such as your primary care doctor, coordinates your care.

This is especially important if you have many health problems or are in the hospital.

16. Make sure that all your doctors have your important health information.

Do not assume that everyone has all the information they need.

17. Ask a family member or friend to go to appointments with you.

Even if you do not need help now, you might need it later.

18. Know that "more" is not always better.

It is a good idea to find out why a test or treatment is needed and how it can help you. You could be better off without it.

19. If you have a test, do not assume that no news is good news.

Ask how and when you will get the results.

20. Learn about your condition and treatments by asking your doctor and nurse and by using other reliable sources.

For example, treatment options based on the latest scientific evidence are available from the [Effective Health Care Web site](#). Ask your doctor if your treatment is based on the latest evidence.

*The term "doctor" is used in this flier to refer to the person who helps you manage your health care.

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Silent Heart Attack: Symptoms, Causes and Prevention

News Article

In this Q&A, Amy Sarma, MD, a cardiology fellow at Massachusetts General Hospital Corrigan Minehan Heart Center, shares insights into the causes and symptoms of a silent heart attack and what you can do to help prevent it from happening.

Wednesday, July 6, 2016

Silent Heart Attack: Symptoms, Causes and Prevention

In this Q&A, **Amy Sarma, MD**, a cardiology fellow at Massachusetts General Hospital's [Corrigan Minehan Heart Center](#), shares insights into the causes and symptoms of a silent heart attack, how they differ for men and women, and what you can do to help prevent it from happening.



Q. What is a silent heart attack?

A. The term “silent heart attack” describes the situation in which evidence of a prior heart attack is picked up during medical testing in a patient who did not realize that they have had a heart attack. Many people do not experience the typical chest discomfort that most people think of when they imagine what is like to have a heart attack, and this is how these heart attacks can be missed. For example, we know that patients with diabetes are at higher risk for heart disease, but they are also more likely to experience atypical chest pain or no chest pain at all when having a heart attack.

We also know that there are different mechanisms by which patients can have heart attacks. While the end result is inadequate blood flow to a portion of the heart resulting in damage, there are many different ways that this can happen.

Silent heart attacks have real consequences, and we are learning to take them just as seriously as heart attacks that manifest with traditional symptoms.

Q. What are the symptoms?

A. Patients don't experience symptoms during a silent heart attack. However, patients might feel the after-effects of the damage from a heart attack, particularly symptoms of heart failure that can include:

- New difficulty breathing
- Fluid accumulation (i.e. swelling), particularly in the legs
- Fatigue

Q. Are the symptoms different for men than women?

A. We are still learning about the differences between men and women with respect to heart attacks, but while all patients can experience atypical symptoms, women—particularly young women—may be less likely to experience traditional symptoms and therefore may not recognize that they are having a heart attack. It is important for both patients and doctors to consider the possibility of a heart attack in patients, especially those who have risk factors for heart disease.

Q. What can cause a silent heart attack? Are the causes different for men than women?

A. The causes of silent heart attacks are the same as those that cause heart attacks with symptoms. The most common cause of a heart attack is a blockage in a blood vessel that compromises blood supply to the portion of the heart that depends on that blood vessel. However, there are many different ways that blood flow to the heart can be compromised and women may be at higher risk for some of the less common mechanisms, which include:

- [Spontaneous coronary artery dissection, or SCAD](#) (when a spontaneous tear forms in the wall of a blood vessel compromising blood flow)
- Coronary vasospasm (a temporary, sudden spasm of a coronary artery that can impair blood flow)
- Microvascular disease (disease of small blood vessels supplying the heart)

Because less is known about less common mechanisms, these causes are harder to identify and treat. There is still so much to learn about how to improve cardiovascular care in women, and this is a focus of [Mass General's Corrigan Women's Heart Health Program](#).

Q. What should someone do during a silent heart attack?

A. By definition, silent heart attacks are those that patients do not know they are experiencing. However, because we know that many patients do not experience the traditional symptoms of a heart attack, people should keep an open mind and seek medical care if they are experiencing new symptoms. Regardless of whether or not symptoms are from a heart attack, it is always important to bring them to medical attention so that doctors can determine the cause and provide appropriate treatment. Anyone who thinks that they may be experiencing a heart attack should call 911 and seek immediate care.

Q. Are there any ways to prevent a silent heart attack?

A. Yes, ways to reduce your risk of having any type of heart attack include:

- Eating a healthy diet
- Maintaining an active lifestyle
- Maintaining a healthy weight
- Not smoking
- Following up with doctors regularly

Doctors can help people identify whether someone may be at higher risk for developing heart disease and can help treat some of these risk factors—like high blood pressure, high cholesterol and diabetes. Women with a history of pre-eclampsia may also be at increased risk for heart disease.

It is very important that patients who already have heart disease or have had a heart attack see a cardiologist (a doctor who specializes in diseases of the heart) regularly to care for their hearts. Patients who have had a heart attack are at particularly high risk for another heart attack, and a cardiologist can help patients reduce this risk.

CONTRIBUTOR:



Amy Sarma, MD
Cardiology Fellow





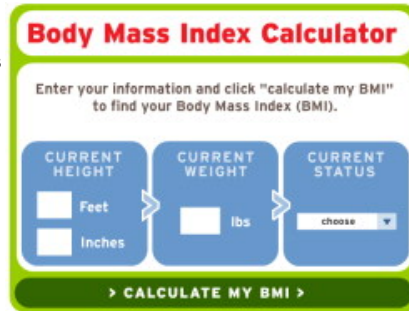
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The benefits of maintaining a healthy weight go far beyond improved energy and smaller clothing sizes. By losing weight or maintaining a healthy weight, you are also likely to enjoy these quality-of-life factors too.

- Fewer joint and muscle pains
- More energy and greater ability to join in desired activities
- Better regulation of bodily fluids and blood pressure
- Reduced burden on your heart and circulatory system
- Better sleep patterns
- Reductions in blood triglycerides, blood glucose, and [risk of developing type 2 diabetes](#)
- Reduced [risk for heart disease](#) and certain cancers



BMI is an indicator of the amount of body fat for most people. It is used as a screening tool to identify whether an adult is at a healthy weight. Find your BMI and what it means with our handy BMI Calculator. A [separate BMI Percentile Calculator should be used for children and teens](#) that takes a child's age and gender into consideration.

- **BMI stands for Body Mass Index**
This is a numerical value of your weight in relation to your height. A BMI between 18.5 and 25 kg/m² indicates a normal weight. A BMI of less than 18.5 kg/m² is considered underweight. A BMI between 25 kg/m² and 29.9 kg/m² is considered overweight. A BMI of 30 kg/m² or higher is considered obese.
- **Excess weight increases the heart's work.**
It also raises [blood pressure](#) and [blood cholesterol](#) and [triglyceride levels](#) and lowers HDL (good) cholesterol levels. It can make diabetes more likely to develop, too. Lifestyle changes that help you maintain a 3-5% weight loss are likely to result in clinically meaningful improvements in blood glucose, triglycerides, and risk of developing type 2 diabetes. Greater weight loss can even help reduce BP and improve blood cholesterol.
- **To calculate your BMI:**
 - Type your height and weight into the calculator.
 - Select a status option if you're under 20 years old, highly trained/athletic, pregnant or breastfeeding. If one of these situations applies to you, the BMI may not be the best method of assessing your risk from overweight or obesity.

Last reviewed 08/2014.

Weight Management

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- [Body Mass Index \(BMI\)](#)
 - [BMI Calculator for Adults](#)
 - [BMI in Children](#)
 - [Frequently Asked Questions About BMI](#)
- [Losing Weight](#)
 - [Introduction](#)
 - [How to Eat Healthy](#)
 - [5 Steps to Losing Weight](#)
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 - [Eating When Not Hungry](#)
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- [Assess your overall risk of heart attack or heart disease](#)
- [BMI in children](#)

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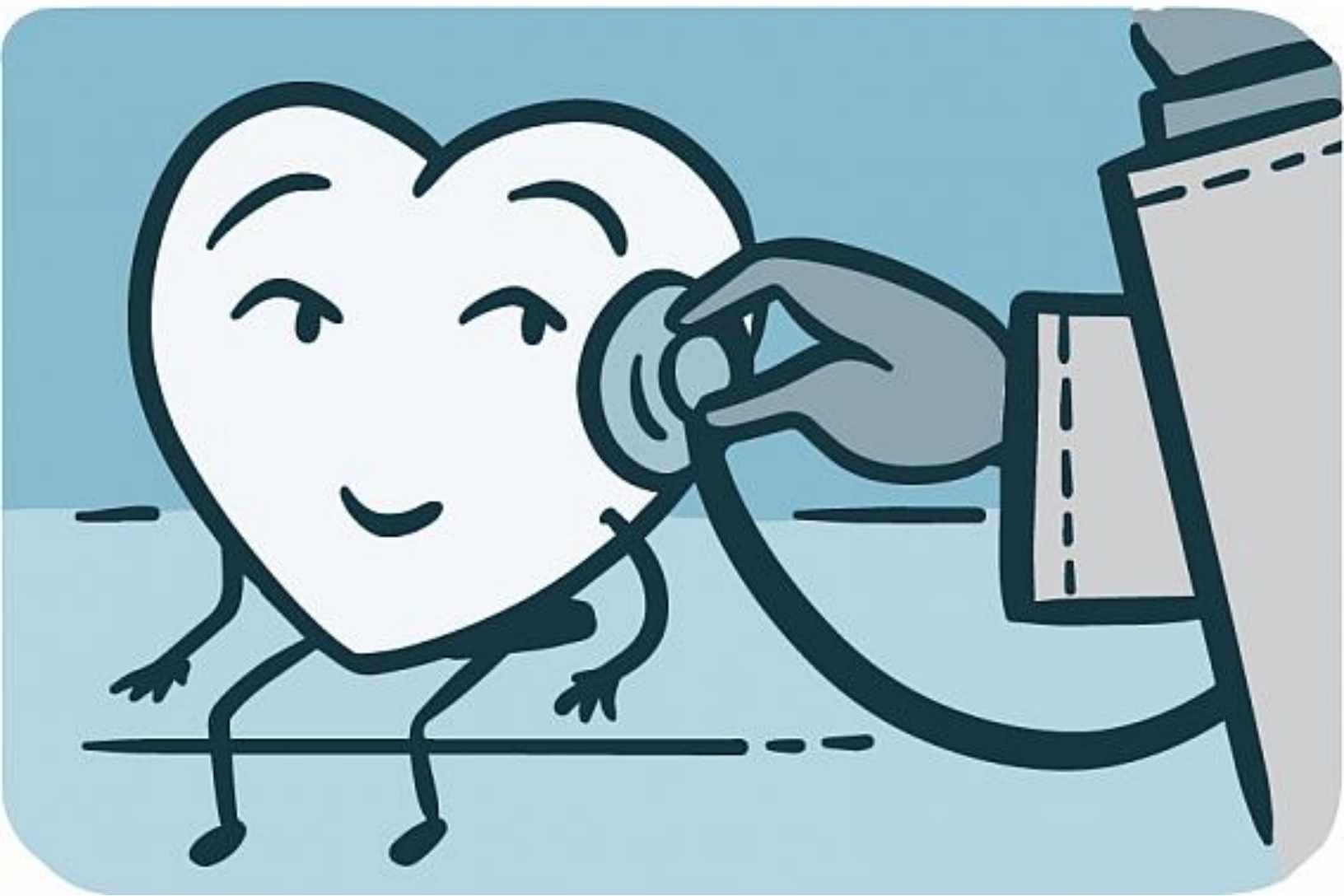
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November 2017

Healthy Body, Happy Heart

Improve Your Heart Health



Every moment of the day, your heart is pumping blood throughout your body. In silent moments, you can hear the thump-thump-thump of its demanding work. Do you take your heart for granted? Most of us will have heart trouble at some point in our lives. Heart disease is the number one killer of women and men in the United States. But you can take steps now to lower your risk.

“About 1 out of 3 people in America will die of heart disease,” says NIH heart disease expert Dr. David C. Goff, Jr. “And about 6 out of every 10 of us will have a major heart disease event before we die.”

Heart disease develops when the blood vessels supplying the heart become clogged with fatty deposits, or plaque.

After the blood vessels narrow, blood flow to the heart is reduced. That means oxygen and nutrients can't get to the heart as easily.

Eventually, an area of plaque can break open. This may cause a blood clot to form on the plaque's surface. A blood clot can block blood flowing to the heart. That can cause a heart attack.

A heart attack happens when a vessel supplying the heart is blocked and the heart can't get enough oxygen, which leads to death of heart muscle.

The three major risk factors for heart disease have been known since the 1960s: smoking, high blood pressure, and high cholesterol levels. These were identified in NIH's Framingham Heart Study, a long-term study of people in Framingham, Massachusetts.

"If we could eliminate cigarette smoking, elevated blood pressure, and elevated cholesterol levels, we could eradicate about 9 out of 10 heart attacks in our country," says Dr. Daniel Levy, a heart specialist at NIH who oversees the Framingham Heart Study currently.

The study has also uncovered other risk factors, including diabetes, obesity, and physical inactivity. Levy's research team is now hunting for **genes** that may be risk factors for heart disease. By understanding the factors that play a role in heart disease, scientists hope to find new ways to prevent and treat it.

Get Tested

Early heart disease may not cause any symptoms. That's why regular checkups with your doctor are so important.

"The sad truth is that the vast majority of us has heart disease and we don't know it," Goff says.

Blood pressure and cholesterol levels can provide early signs. "People should see their doctor, find out their cholesterol and blood pressure numbers, and if needed, take medication," advises Goff.

There are many other tests to detect heart disease. An electro-cardiogram, also called an EKG or ECG, measures electrical activity in your heart. It can show how well your heart is working and pick up signs of a previous heart attack.

Another test called an echocardiogram uses sound waves to detect problems. It shows the size, shape, and structures of your heart. It can also measure blood flow through your heart.

Although early heart disease might not cause symptoms, advanced heart disease may cause chest pressure, shortness of breath, or fatigue. Some people may feel lightheaded, dizzy, or confused. Tell your doctor if you're experiencing any symptoms.

Make Healthy Choices

Talk with your doctor about your risk of heart disease and what you can do to keep your heart healthy.

"The most important things for everyone to do to keep their heart healthy—to keep their entire body healthy—is to eat a healthy diet, get plenty of physical activity, maintain a lean body weight, and avoid smoking and exposure to secondhand smoke," Goff says.

Following a heart-healthy eating plan is important for everyone. "When someone puts food on their plate, about half the plate should be fruits and vegetables. About a quarter of the plate should be whole grain. And about a quarter should be lean protein, like lean meat or seafood," says Goff.

If you have high blood pressure, you may want to follow the DASH (Dietary Approaches to Stop Hypertension) diet. This diet emphasizes fruits, vegetables, whole-grain foods, and low-fat dairy products. To learn more about the diet, see www.nhlbi.nih.gov/health/health-topics/topics/dash.

Goff also advises, "Avoid foods that have a lot of salt in them. Salt is a major contributor to high blood pressure and risk of heart disease."

Prevent Diabetes

Diabetes increases your chances of high blood pressure and high cholesterol. You're also more likely to develop heart disease and have a heart attack.

"Having diabetes is almost like already having heart disease," says Dr. Larissa Avilés-Santa, a diabetes and heart health expert at NIH. She oversees a large NIH study of heart disease risk factors among more than 16,000 Hispanic/Latino adults.

Avilés-Santa says that sometimes people think that they will develop diabetes and heart disease no matter what they do. But that's not true. Even if you have a family history of these diseases, you can be the messenger of good health for your family, she says. You can help your family by inspiring healthy habits.

The best way to prevent diabetes is through diet and physical activity. "The evidence is outstanding that very modest changes in lifestyle could reduce the risk of developing diabetes much greater than medication," Avilés-Santa says.

Get Help

For some people, having a heart attack is the first sign of heart disease. Pain or discomfort in your chest or upper body, a cold sweat, or shortness of breath are all signs of a heart attack.

If you feel any of these signs, get medical help right away. Acting fast can save your life and prevent permanent damage.

Heart disease and heart attacks are major risk factors for cardiac arrest, which is when the heart suddenly stops beating. Blood stops flowing to the brain and other parts of the body. If not treated within minutes, cardiac arrest can lead to death.

Heart disease and heart attacks can also make it harder for your heart's electrical system to work. As a result, an

Irregular heartbeat, or arrhythmia, can occur. Your heart may beat too fast, too slow, or with an uneven rhythm. A dangerous arrhythmia can lead to cardiac arrest.

Regular checkups help ensure that a doctor will check your heart for problems. Heart disease and arrhythmias can be treated to lower the risk of cardiac arrest.

Be good to your heart. Don't take it for granted. Get tested for heart disease, and follow your doctor's suggestions. See the sidebar for questions you may want to ask your doctor.

Related Stories



[Bystanders Can Save Lives During Cardiac Arrest](#)



[Surgery May Help More People After Stroke](#)



Experts Lower "High" Blood Pressure Numbers



How Your Eating Habits Affect Your Health

Ask Your Doctor

- Am I at risk for heart disease?
- What tests do I need?
- Is my blood pressure okay? If not, what should I do?
- Is my cholesterol level okay? If not, what should I do?
- Is my weight okay?
- How much exercise do I need?
- Am I at risk for diabetes?
- How can you help me quit smoking?

Links

- [Can You Recognize a Heart Attack or Stroke?](#)
- [Blood Pressure Matters: Keep Hypertension in Check](#)
- [Preventing Type 2 Diabetes: Steps Toward a Healthier Life](#)

- [Weight Planner](#)
- [Your Guide to Lowering Cholesterol with Therapeutic Lifestyle Changes](#)
- [DASH Eating Plan](#)
- [Heart-Healthy Lifestyle Changes](#)
- [What Are the Signs and Symptoms of Heart Disease?](#)
- [What Is a Heart Attack?](#)
- [What Is Sudden Cardiac Arrest?](#)
- [The Heart Truth for Women](#)
- [Heart Health Resources for Latinos](#)

References

[The Framingham Heart Study and the epidemiology of cardiovascular disease: a historical perspective.](#) Mahmood SS, Levy D, Vasan RS, Wang TJ. *Lancet*. 2014 Mar 15;383(9921):999-1008. doi: 10.1016/S0140-6736(13)61752-3. Epub 2013 Sep 29. Review. PMID: 24084292.

[Prevalence of Low Cardiovascular Risk Profile Among Diverse Hispanic/Latino Adults in the United States by Age, Sex, and Level of Acculturation: The Hispanic Community Health Study/Study of Latinos.](#) Daviglius ML, Pirzada A, Durazo-Arvizu R, Chen J, Allison M, Avilés-Santa L, Cai J, González HM, Kaplan RC, Schneiderman N, Sorlie PD, Talavera GA, Wassertheil-Smoller S, Stamler J. *J Am Heart Assoc*. 2016 Aug 20;5(8). pii: e003929. doi: 10.1161/JAHA.116.003929. PMID: 27543802.

[High Cholesterol Awareness, Treatment, and Control Among Hispanic/Latinos: Results From the Hispanic Community Health Study/Study of Latinos.](#) Rodriguez CJ, Cai J, Swett K, González HM, Talavera GA, Wruck LM, Wassertheil-Smoller S, Lloyd-Jones D, Kaplan R, Daviglius ML. *J Am Heart Assoc*. 2015 Jun 24;4(7). pii: e001867. doi: 10.1161/JAHA.115.001867. PMID: 26109505.

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[Home](#) → [Health Topics](#) → [How to Prevent Heart Disease](#)

URL of this page: <https://medlineplus.gov/howtopreventheartdisease.html>

How to Prevent Heart Disease

Heart disease [<https://medlineplus.gov/heartdiseases.html>] is the leading cause of the death in the United States. It is also a major cause of disability. There are many things that can raise your risk for heart disease. They are called risk factors. Some of them you cannot control, but there are many that you can control. Learning about them can lower your risk of heart disease.

What are the heart disease risk factors that I cannot change?

- **Age.** Your risk of heart disease increases as you get older. Men age 45 and older and women age 55 and older have a greater risk.
- **Gender.** Some risk factors may affect heart disease risk differently in women [<https://medlineplus.gov/heartdiseaseinwomen.html>] than in men. For example, estrogen provides women some protection against heart disease, but diabetes raises the risk of heart disease more in women than in men.
- **Race or ethnicity.** Certain groups have higher risks than others. African Americans are more likely than whites to have heart disease, while Hispanic Americans are less likely to have it. Some Asian groups, such as East Asians, have lower rates, but South Asians have higher rates.
- **Family history.** You have a greater risk if you have a close family member who had heart disease at an early age.

What can I do to lower my risk of heart disease?

Fortunately, there are many things you can do to reduce your chances of getting heart disease:





- **Control your blood pressure.** High blood pressure [<https://medlineplus.gov/highbloodpressure.html>] is a major risk factor for heart disease. It is important to get your blood pressure checked regularly – at least once a year for most adults, and more often if you have high blood pressure. Take steps, including lifestyle changes, to prevent [<https://medlineplus.gov/howtopreventhighbloodpressure.html>] or control high blood pressure.
- **Keep your cholesterol and triglyceride levels under control.** High levels of cholesterol [<https://medlineplus.gov/cholesterol.html>] can clog your arteries and raise your risk of coronary artery disease and heart attack. Lifestyle changes [<https://medlineplus.gov/howtolowercholesterol.html>] and medicines

[<https://medlineplus.gov/cholesterolmedicines.html>] (if needed) can lower your cholesterol. Triglycerides are another type of fat in the blood. High levels of triglycerides [<https://medlineplus.gov/triglycerides.html>] may also raise the risk of coronary artery disease, especially in women.



- **Stay at a healthy weight.** Being overweight or having obesity [<https://medlineplus.gov/obesity.html>] can increase your risk for heart disease. This is mostly because they are linked to other heart disease risk factors, including high blood cholesterol and triglyceride levels, high blood pressure, and diabetes. Controlling your weight [<https://medlineplus.gov/weightcontrol.html>] can lower these risks.
- **Eat a healthy diet.** Try to limit saturated fats, foods high in sodium, and added sugars. Eat plenty of fresh fruit, vegetables, and whole grains. The DASH diet [<https://medlineplus.gov/dasheatingplan.html>] is an example of an eating plan that can help you to lower your blood pressure and cholesterol, two things that can lower your risk of heart disease.
- **Get regular exercise.** Exercise has many benefits, including strengthening your heart and improving your circulation. It can also help you maintain a healthy weight and lower cholesterol and blood pressure. All of these can lower your risk of heart disease.
- **Limit alcohol.** Drinking too much alcohol can raise your blood pressure. It also adds extra calories, which may cause weight gain. Both of those raise your risk of heart disease. Men should have no more than two alcoholic drinks per day, and women should not have more than one.
- **Don't smoke.** Cigarette smoking raises your blood pressure and puts you at higher risk for heart attack and stroke. If you do not smoke, do not start. If you do smoke, quitting [<https://medlineplus.gov/quittingsmoking.html>] will lower your risk for heart disease. You can talk with your health care provider for help in finding the best way for you to quit.
- **Manage stress.** Stress [<https://medlineplus.gov/stress.html>] is linked to heart disease in many ways. It can raise your blood pressure. Extreme stress can be a "trigger" for a heart attack. Also, some common ways of coping with stress, such as overeating, heavy drinking, and smoking, are bad for your heart. Some ways to help manage your stress include exercise, listening to music, focusing on something calm or peaceful, and meditating.
- **Manage diabetes.** Having diabetes [<https://medlineplus.gov/diabetes.html>] doubles your risk of diabetic heart disease [<https://medlineplus.gov/diabeticheartdisease.html>]. That is because over time, high blood sugar [<https://medlineplus.gov/bloodsugar.html>] from diabetes can damage your blood vessels and the nerves that control your heart and blood vessels. So, it is important to get tested for diabetes, and if you have it, to keep it under control.
- **Make sure that you get enough sleep.** If you don't get enough sleep, you raise your risk of high blood pressure, obesity, and diabetes. Those three things can raise your risk for heart disease. Most adults need 7 to 9 hours of sleep per night. Make sure that you have good sleep habits [<https://medlineplus.gov/healthysleep.html>]. If you have frequent sleep problems, contact your health care provider. One problem, sleep apnea [<https://medlineplus.gov/sleepapnea.html>], causes people to briefly stop breathing many times during sleep. This interferes with your ability to get a good rest and can raise your risk of heart

disease. If you think you might have it, ask your doctor about having a sleep study. And if you do have sleep apnea, make sure that you get treatment for it.

Start Here

- **Healthy Body, Happy Heart: Improve Your Heart Health**
[<https://newsinhealth.nih.gov/2017/11/healthy-body-happy-heart>]  (National Institutes of Health)
Also in Spanish [<https://salud.nih.gov/articulo/cuerpo-saludable-corazon-feliz/>]
- **Lifestyle Changes for Heart Attack Prevention**
[http://www.heart.org/HEARTORG/Conditions/HeartAttack/PreventionTreatmentofHeartAttack/Lifestyle-Changes_UCM_303934_Article.jsp] (American Heart Association)
- **Physical Activity and Your Heart** [<https://www.nhlbi.nih.gov/health-topics/physical-activity-and-your-heart>]  (National Heart, Lung, and Blood Institute)
Also in Spanish [<https://www.nhlbi.nih.gov/health-topics/la-actividad-fisica-y-el-corazon>]
- **Prevention** [<https://millionhearts.hhs.gov/learn-prevent/prevention.html>]
(Department of Health and Human Services)
- **Prevention: What You Can Do** [https://www.cdc.gov/heartdisease/what_you_can_do.htm]
(Centers for Disease Control and Prevention)
- **Your Guide to a Healthy Heart** [<https://www.nhlbi.nih.gov/files/docs/public/heart/healthyheart.pdf>]
 (National Heart, Lung, and Blood Institute) – PDF
- **Your Guide to Physical Activity and Your Heart**
[https://www.nhlbi.nih.gov/files/docs/public/heart/phy_active.pdf]
 (National Heart, Lung, and Blood Institute) – PDF

Diagnosis and Tests

- **Cholesterol Test** [<https://medlineplus.gov/labtests/cholesteroltest.html>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/labtests/cholesteroltest.html>]
- **Heart Health Tests: MedlinePlus Health Topic** [<https://medlineplus.gov/hearthealthtests.html>]
 (National Library of Medicine)
Also in Spanish [<https://medlineplus.gov/spanish/hearthealthtests.html>]
- **Heart-Health Screenings** [http://www.heart.org/HEARTORG/Conditions/Heart-Health-Screenings_UCM_428687_Article.jsp] (American Heart Association)
- **hs-CRP Test** [<https://labtestsonline.org/tests/high-sensitivity-c-reactive-protein-hs-crp>]
(American Association for Clinical Chemistry)
- **Screening for Peripheral Artery Disease and Cardiovascular Disease Risk Assessment with Ankle Brachial Index in Adults** [<https://www.uspreventiveservicestaskforce.org/Home/GetFileByID/1895>]
(U.S. Preventive Services Task Force) – PDF

Prevention and Risk Factors

- **Cardiac Risk Assessment** [<https://labtestsonline.org/tests/cardiac-risk-assessment>]
(American Association for Clinical Chemistry)

- **Heart Disease Risk Factors You Can't Control** [<https://www.womenshealth.gov/heart-disease-and-stroke/heart-disease/heart-disease-risk-factors/cant-control>]
(Department of Health and Human Services, Office on Women's Health)
- **Understand Your Risk of Heart Attack**
[http://www.heart.org/HEARTORG/Conditions/HeartAttack/UnderstandYourRiskstoPreventHeartAttack/Understand-Your-Risks-to-Prevent-a-Heart-Attack_UCM_002040_Article.jsp#.V63g9zUSOUl]
(American Heart Association)

Related Issues

- **A Little Planning Helps Your Heart--and Your Budget**
[http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/A-Little-Planning-Helps-Your-Heart---and-Your-Budget_UCM_425124_Article.jsp] (American Heart Association)
- **Alcohol and Heart Health**
[http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/Alcohol-and-Heart-Disease_UCM_305173_Article.jsp] (American Heart Association)
- **Behavioral Counseling to Promote a Healthful Diet and Physical Activity for CVD Prevention in Adults with Risk Factors** [<https://www.uspreventiveservicestaskforce.org/Home/GetFileByID/1862>]
(U.S. Preventive Services Task Force) – **PDF**
- **Daily Aspirin Therapy: Understand the Benefits and Risks** [<https://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/daily-aspirin-therapy/ART-20046797?p=1>]
(Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es-es/diseases-conditions/heart-disease/in-depth/daily-aspirin-therapy/art-20046797?p=1>]
- **Dietary Fiber: Essential for a Healthy Diet** [<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/fiber/art-20043983?p=1>]
(Mayo Foundation for Medical Education and Research)
- **Eat for a Healthy Heart** [<https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm199058.htm>]
(Food and Drug Administration)
Also in Spanish
[<https://www.fda.gov/ForConsumers/ConsumerUpdates/ConsumerUpdatesEnEspañol/ucm315679.htm>]
- **Fasting Diet: Can It Improve My Heart Health?** [<https://www.mayoclinic.org/diseases-conditions/heart-disease/expert-answers/fasting-diet/FAQ-20058334?p=1>]
(Mayo Foundation for Medical Education and Research)
- **Grape Juice: Same Heart Benefits as Wine?** [<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/expert-answers/food-and-nutrition/faq-20058529?p=1>]
(Mayo Foundation for Medical Education and Research)
- **Heart Disease Prevention: Does Oral Health Matter?** [<https://www.mayoclinic.org/healthy-lifestyle/adult-health/expert-answers/heart-disease-prevention/faq-20057986?p=1>]
(Mayo Foundation for Medical Education and Research)
- **Heart-Healthy Diet: Eight Steps to Prevent Heart Disease** [<https://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/heart-healthy-diet/ART-20047702?p=1>]
(Mayo Foundation for Medical Education and Research)
Also in Spanish [<https://www.mayoclinic.org/es-es/diseases-conditions/heart-disease/in-depth/heart-healthy-diet/art-20047702?p=1>]


- Heart-Healthy Exercise [<http://circ.ahajournals.org/content/127/17/e571.full>] (American Heart Association)
- How Can I Manage Stress? [http://www.heart.org/HEARTORG/Conditions/How-Can-I-Manage-Stress_UCM_430971_Article.jsp] **Easy-to-Read** (American Heart Association)
Also in Spanish [http://es.heart.org/dheart/HEARTORG/Conditions/How-Can-I-Manage-Stress_UCM_430971_Article.jsp]
- How Do I Change Recipes? [http://www.heart.org/idc/groups/heart-public/@wcm/@hcm/documents/downloadable/ucm_300464.pdf] **Easy-to-Read** (American Heart Association) – PDF
- Keep the Beat Recipes: Deliciously Healthy Dinners [https://healthyeating.nhlbi.nih.gov/pdfs/KTB_Family_Cookbook_2010.pdf]  (National Heart, Lung, and Blood Institute) – PDF
- Mediterranean Diet: Choose This Heart-Healthy Diet Option [<https://www.mayoclinic.org/healthy-lifestyle/nutrition-and-healthy-eating/in-depth/mediterranean-diet/art-20047801?p=1>] (Mayo Foundation for Medical Education and Research)
- Nuts and Your Heart: Eating Nuts for Heart Health [<https://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/nuts/ART-20046635?p=1>] (Mayo Foundation for Medical Education and Research)
- Phytochemicals and Cardiovascular Disease [http://www.heart.org/HEARTORG/HealthyLiving/HealthyEating/Phytochemicals-and-Cardiovascular-Disease_UCM_306020_Article.jsp] (American Heart Association)
- Preventing Heart Disease – At Any Age [http://www.heart.org/HEARTORG/Conditions/More/MyHeartandStrokeNews/Preventing-Heart-Disease---At-Any-Age_UCM_442925_Article.jsp] (American Heart Association)
- Red Wine and Resveratrol: Good for Your Heart? [<https://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/red-wine/ART-20048281?p=1>] (Mayo Foundation for Medical Education and Research)
- Time to Talk: Five Things to Know about Omega-3s for Heart Disease [<https://nccih.nih.gov/health/tips/omega3>]  (National Center for Complementary and Integrative Health)
- Vitamin Supplements: Healthy or Hoax? [http://www.heart.org/HEARTORG/Conditions/Vitamin-Supplements-Healthy-or-Hoax_UCM_432104_Article.jsp] (American Heart Association)
- Vitamin, Mineral, and Multivitamin Supplements for the Primary Prevention of Cardiovascular Disease and Cancer [<https://www.uspreventiveservicestaskforce.org/Home/GetFileByID/1903>] (U.S. Preventive Services Task Force) – PDF
- Walk, Don't Run, Your Way to a Healthy Heart [http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/StartWalking/Walk-Dont-Run-Your-Way-to-a-Healthy-Heart_UCM_452926_Article.jsp] (American Heart Association)
- Why Should I Lose Weight? [http://www.heart.org/idc/groups/heart-public/@wcm/@hcm/documents/downloadable/ucm_300472.pdf] **Easy-to-Read** (American Heart Association) – PDF

Journal Articles


References and abstracts from MEDLINE/PubMed (National Library of Medicine)

- Article: Impact of bone marrow mononuclear cells therapy on left ventricular...
[<https://www.ncbi.nlm.nih.gov/pubmed/29668587>]
- Article: The safety of endothelin receptor antagonists in the treatment of...
[<https://www.ncbi.nlm.nih.gov/pubmed/29538209>]
- Article: Alpha-2 adrenergic agonists for the prevention of cardiac complications among...
[<https://www.ncbi.nlm.nih.gov/pubmed/29509957>]
- How to Prevent Heart Disease -- see more articles [[https://www.ncbi.nlm.nih.gov/pubmed?term=\(\(preventive+health+services\[majr:noexp\]+OR+primary+prevention\[majr:noexp\]+AND+heart+diseases\[majr\]\)+OR+heart+diseases/pc\[majr\]+NOT+atrial+fibrillation\[mh\]\)+AND+humans\[mh\]+english\[la\]+AND+\(jsubsetk\[text\]+OR+patient+education+handout\[pt\]+OR+jsubsetn\[text\]+OR+jsubsetaim\[text\]+OR+clinical+trial\[pt\]+OR+review\[pt\]+OR+guideline\[pt\]\)+NOT+\(letter\[pt\]+OR+case+reports\[pt\]+OR+editorial\[pt\]\)+AND+%22last+1+Year%22\[edat\]](https://www.ncbi.nlm.nih.gov/pubmed?term=((preventive+health+services[majr:noexp]+OR+primary+prevention[majr:noexp]+AND+heart+diseases[majr])+OR+heart+diseases/pc[majr]+NOT+atrial+fibrillation[mh])+AND+humans[mh]+english[la]+AND+(jsubsetk[text]+OR+patient+education+handout[pt]+OR+jsubsetn[text]+OR+jsubsetaim[text]+OR+clinical+trial[pt]+OR+review[pt]+OR+guideline[pt])+NOT+(letter[pt]+OR+case+reports[pt]+OR+editorial[pt])+AND+%22last+1+Year%22[edat])]

Reference Desk

- Heart and Stroke Encyclopedia [http://www.heart.org/HEARTORG/Conditions/The-Heart-and-Stroke-Encyclopedia_UCM_445688_SubHomePage.jsp] (American Heart Association)
- Heart Information Center [<https://www.texasheart.org/heart-health/heart-information-center/>] (Texas Heart Institute)
- How the Heart Works [<https://www.nhlbi.nih.gov/health-topics/how-heart-works>]  (National Heart, Lung, and Blood Institute)


Find an Expert


- American Heart Association [<http://www.heart.org/HEARTORG/>]
- National Heart, Lung, and Blood Institute [<https://www.nhlbi.nih.gov/>] 

Children

- Heart Disease Risk Factors for Children and Teenagers [<https://www.texasheart.org/heart-health/heart-information-center/topics/heart-disease-risk-factors-for-children-and-teenagers/>] (Texas Heart Institute)
Also in Spanish [<https://www.texasheart.org/heart-health/heart-information-center/topics/factores-de-riesgo-cardiovascular-para-ninos-y-adolescentes/>]

Women

- Healthy Heart Handbook for Women [<https://www.nhlbi.nih.gov/health/educational/hearttruth/downloads/pdf/handbook-for-women.pdf>]  (National Heart, Lung, and Blood Institute) – PDF
- Heart Disease and Stroke [<https://www.womenshealth.gov/heart-disease-and-stroke>] (Department of Health and Human Services, Office on Women's Health)
- Heart Disease in Women: Understand Symptoms and Risk Factors [<https://www.mayoclinic.org/diseases-conditions/heart-disease/in-depth/heart-disease/ART->

- Heart Truth [<https://www.nhlbi.nih.gov/health/educational/hearttruth/>]
 (National Heart, Lung, and Blood Institute)

Seniors

- Heart Health [<https://www.nia.nih.gov/health/heart-health>]  (National Institute on Aging)

Patient Handouts

- Give your heart a workout [<https://medlineplus.gov/ency/patientinstructions/000763.htm>]
(Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000763.htm>]
- Omega-3 fats: Good for your heart [<https://medlineplus.gov/ency/patientinstructions/000767.htm>]
(Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000767.htm>]
- Stress and your heart [<https://medlineplus.gov/ency/patientinstructions/000768.htm>]
(Medical Encyclopedia)
Also in Spanish [<https://medlineplus.gov/spanish/ency/patientinstructions/000768.htm>]



MEDICAL ENCYCLOPEDIA

- Give your heart a workout [<https://medlineplus.gov/ency/patientinstructions/000763.htm>]
- Heart disease – risk factors [<https://medlineplus.gov/ency/patientinstructions/000106.htm>]
- Heart disease and diet [<https://medlineplus.gov/ency/article/002436.htm>]
- Omega-3 fats: Good for your heart
[<https://medlineplus.gov/ency/patientinstructions/000767.htm>]
- Stress and your heart [<https://medlineplus.gov/ency/patientinstructions/000768.htm>]

Related Health Topics

Blood Thinners [<https://medlineplus.gov/bloodthinners.html>]

Cholesterol [<https://medlineplus.gov/cholesterol.html>]

Heart Diseases [<https://medlineplus.gov/heartdiseases.html>]

Heart Health Tests [<https://medlineplus.gov/hearthealthtests.html>]

How to Lower Cholesterol [<https://medlineplus.gov/howtolowercholesterol.html>]

How to Prevent High Blood Pressure

[<https://medlineplus.gov/howtopreventhighbloodpressure.html>]

National Institutes of Health

The primary NIH organization for research on *How to Prevent Heart Disease* is the National Heart, Lung, and Blood Institute [<http://www.nhlbi.nih.gov/>]

MedlinePlus links to health information from the National Institutes of Health and other federal government agencies. MedlinePlus also links to health information from non-government Web sites. See our disclaimer [<https://medlineplus.gov/disclaimers.html>] about external links and our quality guidelines [<https://medlineplus.gov/criteria.html>] .

High Blood Pressure

Also known as Hypertension

[Leer en español](#)

High blood pressure is a common disease in which blood flows through blood vessels, or arteries, at higher than normal pressures. Blood pressure is the force of blood pushing against the walls of your arteries as the heart pumps blood. High blood pressure, sometimes called hypertension, is when this force against the artery walls is too high. Your doctor may diagnose you with high blood pressure if you have consistently high blood pressure readings.

To control or lower high blood pressure, your doctor may recommend that you adopt heart-healthy lifestyle changes, such as heart-healthy eating patterns like the DASH eating plan, alone or with medicines. Controlling or lowering blood pressure can also help prevent or delay high blood pressure complications, such as chronic kidney disease, heart attack, heart failure, stroke, and possibly vascular dementia.

Explore this Health Topic to learn more about high blood pressure, our role in research and clinical trials to improve health, and where to find more information.



See also

[Information for Health Professionals](#)

Causes + +

Eating too much sodium and having certain medical conditions can cause high blood pressure. Taking certain medicines, including birth control pills or over-the-counter cold relief medicines, can also make blood pressure rise.

Eating too much sodium + +

Unhealthy eating patterns, particularly eating too much sodium, are a common cause of high blood pressure in the United States. Healthy lifestyle changes, such as heart-healthy eating or the DASH eating plan, can help [prevent](#) or [treat](#) high blood pressure.

Do you know how sodium causes blood pressure to rise?

[Read more](#)

Other medical conditions + +

Other medical conditions change the way your body controls fluids, sodium, and [hormones](#) ⁱ in your blood. Other medical causes of high blood pressure include:

- Certain [tumors](#) ⁱ
- [Chronic kidney disease](#) ⁱ
- [Overweight and obesity](#)
- [Sleep apnea](#)
- Thyroid problems

Look for



- [Risk Factors](#) will discuss family history, lifestyle, and other factors that increase your risk of developing high blood pressure.
- [Treatment](#) will discuss heart-healthy lifestyle changes that your doctors may recommend if you are diagnosed with high blood pressure.

Risk Factors



There are many risk factors for high blood pressure. Some risk factors, such as unhealthy lifestyle habits, can be changed. Other risk factors, such as age, family history and genetics, race and ethnicity, and sex, cannot be changed. [Heathy lifestyle changes](#) can decrease your risk for developing high blood pressure.

Age



Blood pressure tends to increase with age. Our blood vessels naturally thicken and stiffen over time. These changes increase the risk for high blood pressure.

However, the risk of high blood pressure is increasing for children and teens, possibly due to the rise in the number of children and teens who are living with overweight or obesity.

Want to learn more about the molecular changes that happen in your blood vessels as you age?

[Read more](#)

Family history and genetics



High blood pressure often runs in families. Much of the understanding of the body systems involved in high blood pressure has come from genetic studies. Research has identified many [gene](#) ⁱ variations associated with small increases in the risk of developing high blood pressure. New research suggests that certain DNA changes during fetal development may also lead to the development of high blood pressure later in life.

Some people have a high sensitivity to sodium. This can also run in families.

Some people have a high sensitivity to sodium. This can also run in families.

[Read more](#)

Unhealthy lifestyle habits



Unhealthy lifestyle habits can increase the risk of high blood pressure. These habits include:

- Unhealthy eating patterns, such as eating too much sodium
- Drinking too much alcohol
- Being physically inactive

Race or ethnicity



High blood pressure is more common in African American adults than in white, Hispanic, or Asian adults. Compared with other racial or ethnic groups, African Americans tend to have higher average blood pressure numbers and get high blood pressure earlier in life.

Sex



Before age 55, men are more likely than women to develop high blood pressure. After age 55, women are more likely than men to develop high blood pressure.

Screening and Prevention



Everyone age 3 or older should have their blood pressure checked by a healthcare provider at least once a year. Your doctor will use a blood pressure test to see if you have consistently high blood pressure readings. Even small increases in systolic blood pressure can weaken and damage your blood vessels. Your doctor will recommend [heart-healthy lifestyle changes](#) to help control your blood pressure and prevent you from developing high blood pressure.

Screening for consistently high blood pressure readings



Your doctor will use a blood pressure test to see if you have higher than normal blood pressure readings. The reading is made up of two numbers, with the systolic number above the diastolic number. These numbers are measures of pressure in millimeters of mercury (mm Hg).

Your blood pressure is considered high when you have consistent systolic readings of 140 mm Hg or higher or diastolic readings of 90 mm Hg or higher. Based on research, your doctor may also consider you to have high blood pressure if you are an adult or child age 13 or older who has consistent systolic readings of 130 to 139 mm Hg or diastolic readings of 80 to 89 mm Hg and you have other cardiovascular risk factors.

For children younger than 13, blood pressure readings are compared to readings common for children of the same, age, sex, and height. Read more about [blood pressure readings for children](#).

Talk to your doctor if your blood pressure readings are consistently higher than normal. **Note that readings above 180 over 120 mm Hg are dangerously high and require immediate medical attention.**

A blood pressure test is easy and painless and can be done in a doctor's office or clinic. A healthcare provider will use a gauge, stethoscope, or electronic sensor and a blood pressure cuff to measure your blood pressure. To prepare, take the following steps:

- Do not exercise, drink coffee, or smoke cigarettes for 30 minutes before the test.
- Go to the bathroom before the test.
- For at least 5 minutes before the test, sit in a chair and relax.
- Make sure your feet are flat on the floor.
- Do not talk while you are relaxing or during the test.
- Uncover your arm for the cuff.
- Rest your arm on a table so it is supported and at the level of your heart.

If it is the first time your provider has measured your blood pressure, you may have readings taken on both arms.

Even after taking these steps, your blood pressure reading may not be accurate for other reasons.

- **You are excited or nervous.** The phrase “white coat hypertension” refers to blood pressure readings that are only high when taken in a doctor’s office compared with readings taken in other places. Doctors can detect this type of high blood pressure by reviewing readings from the office and from other places.
- **If your blood pressure tends to be lower when measured at the doctor’s office.** This is called masked high blood pressure. When this happens, your doctor will have difficulty detecting high blood pressure.
- **The wrong blood pressure cuff was used.** Your readings can appear different if the cuff is too small or too large. It is important for your healthcare team to track your readings over time and ensure the correct pressure cuff is used for your sex and age.

Your doctor may run additional tests to confirm an initial reading. To gather more information about your blood pressure, your doctor may recommend wearing a blood pressure monitor to record readings over 24 hours. Your doctor may also teach you how to take blood pressure readings at home.

Healthy lifestyle changes to prevent high blood pressure



Healthy lifestyle changes can help prevent high blood pressure from developing. Healthy lifestyle changes include choosing a [heart-healthy eating](#) patterns such as the [DASH eating plan](#), [being physically active](#), [aiming for a healthy weight](#), [quitting smoking](#), and [managing stress](#).


Look for




- [Diagnosis](#) will discuss tests and procedures that your doctor may use to diagnose high blood pressure.
- [Living With](#) will explain what your doctor may recommend to prevent high blood pressure from recurring, getting worse, or causing complications.
- [Research for Your Health](#) will discuss how we are using current research and advancing research to prevent high blood pressure.

Signs, Symptoms, and Complications



It is important to have regular blood pressure readings taken and to know your numbers, because high blood pressure usually does not cause [symptoms](#)  until serious complications occur. Undiagnosed or uncontrolled high blood pressure can cause the following complications:

- [Aneurysms](#)
- [Chronic kidney disease](#) 
- Eye damage
- [Heart attack](#)
- [Heart failure](#)
- [Peripheral artery disease](#)
- [Stroke](#)
- [Vascular dementia](#)

Diagnosis



Your doctor may diagnose you with high blood pressure based on your medical history and if your blood pressure readings are consistently at high levels. Diagnoses for children younger than 13 are based on typical readings for their sex, height, and age.

Confirming high blood pressure



To diagnose high blood pressure, your doctor will take two or more readings at separate medical appointments. Learn more about [screening for high blood pressure](#), including how to prepare.

Your doctor may diagnose you with high blood pressure when you have consistent systolic readings of 140 mm Hg or higher or diastolic readings of 90 mm Hg or higher. Based on research, your doctor may also consider you to have high blood pressure if you are an adult or child age 13 or older who has consistent systolic readings of 130 to 139 mm Hg or diastolic readings of 80 to 89 mm Hg and you have other cardiovascular risk factors.

For children younger than 13, blood pressure readings are compared to readings common for children of the same, age, sex, and height. Read more about [blood pressure readings for children](#).

Talk to your doctor if your blood pressure readings are consistently higher than normal. **Note that readings above 180 over 120 mm Hg are dangerously high and require immediate medical attention.**

Your doctor may diagnose you with one of two types of high blood pressure. What is the difference?

[Read more](#)

Medical history



Your doctor will want to understand your risk factors, general information about your health—such as your eating patterns,

your physical activity levels, and your family's health history. This information can help your doctor develop a [treatment plan](#).

Tests to identify other medical conditions



Your doctor may order additional tests to see if another condition or medicine is causing your high blood pressure. Doctors can use this information to develop your [treatment plan](#).

Reminders



- Return to [Risk Factors](#) to review family history, lifestyle, or environmental factors that increase your risk of developing high blood pressure.
- Return to [Signs, Symptoms, and Complications](#) to review complications of high blood pressure.
- Return to [Screening and Prevention](#) to review how to screen for high blood pressure.

Treatment



For most people with high blood pressure, a doctor will develop a treatment plan that may include heart-healthy lifestyle changes alone or with medicines. Heart-healthy lifestyle changes, such as heart-healthy eating, can be highly effective in treating high blood pressure.

If your high blood pressure is caused by another medical condition or medicine, it may improve once the cause is treated or removed.

Healthy lifestyle changes



If you have high blood pressure, your doctor may recommend that you adopt lifelong heart-healthy lifestyle changes to help lower and control high blood pressure. These include:

- **[Heart-healthy eating patterns such as the DASH eating plan.](#)** NHLBI-funded research has shown that DASH combined with a low-salt eating plan can be as effective as medicines in lowering high blood pressure. Learn more about the blood pressure lowering effects and other [health benefits of the DASH eating plan](#).
- **[Being physically active.](#)** Many health benefits result from being physically active and getting the recommended amount of physical activity each week. Studies have shown that physical activity can help lower and control high blood pressure levels. Before starting any exercise program, ask your doctor what level of physical activity is right for you.
- **[Aiming for a healthy weight.](#)** If you are an adult who is living with overweight or obesity, losing 5 to 10 percent of your initial weight over about six months can improve your health. Even losing just 3 to 5 percent of your weight can improve blood pressure readings.
- **[Quitting smoking.](#)** Visit [Smoking and Your Heart](#) and the National Heart, Lung, and Blood Institute's [Your Guide to a Healthy Heart](#) [PDF - 2MB]. Although these resources focus on heart health, they include basic information about how to quit smoking. For free help and support to quit smoking, you can call the National Cancer Institute's Smoking Quitline at 1-877-44U-QUIT (1-877-448-7848).
- **[Managing stress.](#)**

To help make lifelong heart-healthy lifestyle changes, try making one change at a time and add another change when you feel that you have successfully adopted the earlier changes. When you practice several healthy lifestyle habits, you are more likely to lower or control your high blood pressure and maintain normal blood pressure.

Medicines



When healthy lifestyle changes alone do not control or lower high blood pressure, your doctor may change or update your treatment plan by prescribing medicines to treat your condition. These medicines act in different ways to lower blood pressure. When prescribing medicines, your doctor will also consider their effect on other conditions you might have, such as heart disease or kidney disease. Possible high blood pressure medicines include:

- **Angiotensin-converting enzyme (ACE) inhibitors:** Block the production of the angiotensin II hormone, one part of the basic system the body uses to control blood pressure. When angiotensin II is blocked, the blood vessels do not narrow.
- **Angiotensin II receptor blockers (ARBs):** Block angiotensin II hormone from binding with receptors in the blood vessels. ARBs work the same way as ACE inhibitors to keep blood vessels from narrowing.
- **Calcium channel blockers:** Keep calcium from entering the muscle cells of your heart and blood vessels. This allows blood vessels to relax.
- **Diuretics (water or fluid pills):** Flush excess sodium from your body, reducing the amount of fluid in your blood. The main diuretic for high blood pressure treatment is thiazide. Diuretics are often used with other high blood pressure medicines, sometimes in one combined pill.

If your doctor prescribes medicines as a part of your treatment plan, keep up your healthy lifestyle changes. The combination of the medicines and the heart-healthy lifestyle changes can help control and lower your high blood pressure and prevent heart disease.

If you have concerns about any side effects from your medicine, talk with your doctor to see if he or she can change the dose or prescribe a new medicine.

What should I know about high blood pressure medicines in children, women, and African Americans?

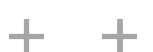
[Read more](#)

Look for



- [Research for Your Health](#) will explain how we are using current research and advancing research to treat people with high blood pressure.
- [Participate in NHLBI Clinical Trials](#) will discuss our ongoing clinical studies that are investigating treatments for high blood pressure.
- [Living With](#) will explain what your doctor may recommend, including lifelong heart-healthy lifestyle changes and medical care to prevent high blood pressure from getting worse or causing complications.

Living With



If you have been diagnosed with high blood pressure, it is important that you continue your [treatment](#) plan. Following your treatment plan, getting regular follow-up care, and learning how to monitor your condition at home are important. Let your doctor know if you are planning to become pregnant. These steps can help prevent or delay complications that high blood pressure can cause. Your doctor may adjust your treatment plan as needed to lower or control your high blood pressure.

Receive routine follow-up care



Check your blood pressure and have regular medical checkups or tests as your doctor advises. Your doctor may suggest ways for you to monitor your blood pressure at home. During checkups, talk to your doctor about these important topics:

- Blood pressure readings
- Your overall health
- Your treatment plan

Your doctor may need to change or add medicines to your treatment plan over time. To help control your blood pressure and prevent heart disease, keep up your healthy lifestyle changes. You can ask questions and discuss your progress as part of your follow-up.

Return to [Treatment](#) to review possible treatment options for your high blood pressure.

Monitor your condition yourself



Your doctor may ask you to check readings at home or at other locations that have blood pressure equipment. You may be able to send readings to your doctor's office electronically, or you can [keep a written log](#) [PDF, 663K] of all your results.

Keeping track of your blood pressure is important. Your doctor can help you learn how to check your blood pressure at home. Each time you check your own blood pressure, record your numbers and the date. Send or take the log of your blood pressure readings with you for appointments with your doctor. Return to [Screening](#) for reminders on how to prepare for blood pressure testing.


Pregnancy planning



High blood pressure can cause problems for a mother and her baby. High blood pressure can harm a mother's kidneys and other organs and can cause early birth and low birth weight. If you are thinking about having a baby and have high blood pressure, talk with your doctors so you can take steps to lower or control your high blood pressure before and during the pregnancy.


Some medicines used to treat high blood pressure are not recommended during pregnancy. If you are taking medicines to lower or control your high blood pressure, talk with your doctor about your choices for safely managing high blood pressure during pregnancy.

Some women with normal blood pressure develop high blood pressure during pregnancy. As part of your regular prenatal care, your doctor will measure your blood pressure at each visit. If you develop high blood pressure, your doctor will closely monitor you and your baby and provide special care to lower the chance of complications. With such care, most women and babies have good outcomes.


If you have high blood pressure, it is important to get routine medical care and to follow your prescribed [treatment plan](#), which will include heart-healthy lifestyle changes and possibly medicines. [Heart-healthy lifestyle changes](#) can prevent high blood pressure, reduce elevated blood pressure, help control existing high blood pressure, and prevent [complications](#), such as [heart attack](#), [heart failure](#), [stroke](#), [vascular dementia](#), or [chronic kidney disease](#) .

Learn the warning signs of serious complications and have a plan

High blood pressure can lead to serious complications such as heart attack or stroke. Call 911 if you suspect any of the following in you or someone else:

- **Heart attack.** [Signs](#)  of heart attack include mild or severe chest pain or discomfort in the center of the chest or upper abdomen that lasts for more than a few minutes or goes away and comes back. It can feel like pressure, squeezing, fullness, heartburn, or indigestion. There may also be pain down the left arm. Women may also have chest pain and pain down the left arm, but they are more likely to have less typical symptoms, such as shortness of breath, nausea, vomiting, unusual tiredness, and pain in the back, shoulders, or jaw. Read more about the [signs and symptoms of a heart attack](#).
- **Stroke.** If you think someone may be having a stroke, act F.A.S.T. and perform the following simple test:
 - **F—Face:** Ask the person to smile. Does one side of the face droop?
 - **A—Arms:** Ask the person to raise both arms. Does one arm drift downward?
 - **S—Speech:** Ask the person to repeat a simple phrase. Is their speech slurred or strange?
 - **T—Time:** If you observe any of these signs, call for help immediately. Early treatment is essential.Read more about the [signs and symptoms of a stroke](#).
- **Dangerously high blood pressure.** Readings above 180 over 120 are dangerously high and require immediate medical attention.

Research for Your Health

The NHLBI is part of the U.S. Department of Health and Human Services' National Institutes of Health (NIH)—the Nation's biomedical [research](#)  agency that makes important scientific discovery to improve health and save lives. We are committed to advancing science and translating discoveries into clinical practice to promote the prevention and treatment of heart, lung, blood, and sleep disorders, including high blood pressure. Learn about the current and future NHLBI efforts to improve health through research and scientific discovery.

Improving health with current research

Learn about the following ways in which the NHLBI continues to translate current research and science into improved health for people with high blood pressure. Research on this topic is part of the NHLBI's broader commitment to advancing [heart and vascular disease](#) scientific discovery.

- **Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT).** This NHLBI study began in 1994 and lasted eight years. People with high blood pressure enrolled in one part of the study and people with high blood cholesterol enrolled in another part of the study. ALLHAT's findings have informed how we treat

high blood pressure and high blood cholesterol. Visit [Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial](#) for more information about all research activities and advances from this study.

- **NHLBI Expert Panel on Cardiovascular Health and Risk Reduction in Children and Adolescents.** We have supported the development of guidelines based on up-to-date research to evaluate and manage risk of heart disease in children and adolescents, including high blood pressure. Visit [Expert Panel on Integrated Guidelines for Cardiovascular Health and Risk Reduction in Children and Adolescents](#) for more information.
- **NHLBI-funded Research Supports Development of Guidelines for High Blood Pressure Management.** To date, our [Systolic Blood Pressure Intervention Trial \(SPRINT\)](#) is the largest study of its kind to examine how maintaining systolic blood pressure at a lower level than previously recommended level would affect heart and vascular diseases. Visit the [SPRINT Overview](#) for more information about the health benefits of a more intensive high blood pressure treatment and how SPRINT findings helped shaped the American College of Cardiology/American Heart Association (ACC/AHA) guidelines, published in the [Journal of American College of Cardiology](#) and [Hypertension](#).

Learn about some of the pioneering research contributions we have made over the years that have improved clinical care.

[Read more](#)

Advancing research for improved health



In support of [our mission](#), we are committed to advancing high blood pressure research in part through the following ways.


- **We perform research.** The NHLBI [Division of Intramural Research \(DIR\)](#) and its [Cardiovascular Branch](#) conducts research on diseases that affect the heart and blood vessels, including high blood pressure. Other DIR groups, such as the Center for Molecular Medicine and [Systems Biology Center](#), perform research on heart and vascular diseases.
- **We fund research.** The research we fund today will help improve our future health. Our [Division of Cardiovascular Sciences](#) and its [Vascular Biology and Hypertension Branch](#) oversee much of the research we fund on the regulation of blood pressure, pathways involved in high blood pressure, and the complications from uncontrolled high blood pressure. The [Center for Translation Research and Implementation Science](#) supports research to translate these discoveries into clinical practice. Search the [NIH RePORTer](#) to learn about research NHLBI is funding on high blood pressure
- **We stimulate high-impact research.** Our [Trans-Omics for Precision Medicine \(TOPMed\) Program](#) includes participants with high blood pressure, which may help us understand how genes contribute to differences in disease severity and how patients respond to treatment. The [NHLBI Strategic Vision](#) highlights ways we may support research over the next decade, including new efforts for studying high blood pressure.

Learn about exciting high blood pressure research that the NHLBI is exploring.

[Read more](#)

Participate in NHLBI Clinical Trials



We lead or sponsor many studies relevant to high blood pressure. See if you or someone you know is eligible to participate in our [clinical trials](#) .

Are you an adult who seeks treatment for high blood pressure in the emergency room?

+ +

This study is assessing techniques to help patients who have high blood pressure follow their treatment plan and decrease their visits to the emergency department. To participate, you must be between 21 and 85 years old. Please note that this study is in Nashville, Tennessee.

View more information about [A ED-based Intervention to Improve Antihypertensive Adherence.](#)

Are you an adult who is curious about how sodium affects your blood pressure?

+ +

This study is testing if limiting sodium can affect individuals with a specific genetic predisposition to high blood pressure. To participate you must be 18 years old or older and not have high blood pressure. Please note that this study is in Charlottesville, Virginia.

View more information about [Blood Pressure Response to Sodium in the Diet.](#)

Are you an adult whose high blood pressure does not improve with lifestyle changes and medicines?

+ +

This study will assess whether minocycline, an antibiotic with anti-inflammatory effects, can improve blood pressure control in patients who do not respond to medicines in combination with lifestyle changes, such as physical activity, weight loss, and healthy eating patterns. To participate you must be at least 18 years old and have high blood pressure that does not respond to treatment with three different high blood pressure medicines even when used at the maximum doses. Please note that this study is in Gainesville, Florida.

View more information about [Effect of Minocycline Treatment on Drug-Resistant Hypertensive Patients.](#)

Are you an adult with high blood pressure who prefers natural therapies?

+ +

This study is investigating whether modified citrus pectin, a dietary supplement derived from plants, can decrease heart failure and other complications of high blood pressure. To participate patients must be at least 21 years old and have an established treatment plan for high blood pressure. Please note that this study is in Boston, Massachusetts.

View more information about [Galectin-3 Blockade in Patients With High Blood Pressure.](#)

Are you an African American adult living in the Washington, D.C. metro area?

+ +

This study is assessing the association between DNA, health behaviors, social and environmental factors, and risk factors of heart disease, such as high blood pressure, in African Americans. To participate you must be an African American between 21 and 65 years old, living in Washington, D.C., or Montgomery or Prince Georges counties in Maryland. Please note that this study is being conducted in Bethesda, Maryland.

View more information about [Genomics, Environmental Factors and Social Determinants of Cardiovascular Disease in African-Americans Study \(GENE-FORECAST\).](#)

Are you an adult who has insomnia and high blood pressure?

+ +

This study is evaluating three different behavioral interventions for treatment of insomnia and the effects of insomnia on blood pressure. To participate, you must be at least 18 years old and have insomnia and high blood pressure. Please note that this study is in Pittsburgh, Pennsylvania.

View more information about [Hypertension With Unsatisfactory Sleep Health \(HUSH\)](#). 

Are you an adult whose high blood pressure has not improved with medicines?  

This study is assessing whether a low-sodium and low-calorie eating pattern, along with aerobic exercise, can improve blood pressure in patients who do not respond to high blood pressure medicines. To participate you must be at least 35 years and have high blood pressure that does not respond to medicines. Please note that this study is in Durham, North Carolina.

View more information about [Neurocognition, Lifestyle Modification, and Treatment Resistant Hypertension](#).. 


Do you know a child, teen, or young adult with sickle cell disease and high blood pressure?  

This study is evaluating a possible treatment for patients with sickle cell disease and high blood pressure to prevent kidney damage. To participate, you must be between 5 and 25 years old and have sickle cell disease and high blood pressure. Please note that this study is in Birmingham, Alabama.

View more information about [Preventing Sickle Cell Kidney Disease](#). 

Learn more about [participating in a clinical trial](#).

View all trials from [ClinicalTrials.gov](#) .

Visit [Children and Clinical Studies](#)  to hear experts, parents, and children talk about their experiences with clinical research.

More Information

After reading our High Blood Pressure Health Topic, you may be interested in additional information found in the following resources.

Related Health Topics

[Aneurysm](#)

[Coronary Heart Disease](#)

[DASH Eating Plan](#)

[Heart Attack](#)

[Heart Failure](#)

[Heart-Healthy Lifestyle Changes](#)

[Peripheral Artery Disease](#)

[Physical Activity and Your Heart](#)




[Smoking and Your Heart](#)

[Stroke](#)

[Vascular dementia](#)

- [Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial \(ALLHAT\)](#)
- [Framingham Heart Study](#)
- [Healthy Hearts, Healthy Homes: Keep the Beat: Control Your High Blood Pressure/Corazones sanos, hogares saludables: Cuie us vide: Control so prison arterial alta](#) [PDF, 2.7M]
- [The Heart Truth®](#)
- [Hispanic Women & High Blood Pressure](#) [PDF, 450 KB]
- [Heart and Vascular Diseases](#)
- [Hispanic Community Health Study/Study of Latinos](#)
- [HCHS Data Book](#) [PDF, 3.8M]
- [Jackson Heart Study](#)
- [My Blood Pressure Wallet Card](#) [PDF, 663K]
- [Population and Epidemiology Studies](#)
- [Strong Heart Study](#)
- [Systolic Blood Pressure Intervention Trial \(SPRINT\) Overview](#)
- [SPRINT Questions and Answers](#)
- [Trans-Omics for Precision Medicine \(TOPMed\) Program](#)

Non-NHLBI resources

- [Blood Pressure Measurement](#)  (National Library of Medicine [NLM], MedlinePlus)
- [High Blood Pressure](#) (NLM, MedlinePlus)
- [High Blood Pressure and Kidney Disease](#) (National Institute of Diabetes and Digestive and Kidney Diseases)
- [Million Hearts®](#)  (Centers for Disease Control and Prevention and Centers for Medicare & Medicaid Services)
- [Preeclampsia and Eclampsia](#) (*Eunice Kennedy Shriver* National Institute of Child Health and Human Development [NICHD])
- [Tobacco and Nicotine Facts](#)  (National Institute on Drug Abuse)
- [What are some common complications of pregnancy?](#) (NICHD)

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THE HEART TRUTH[®]

for Women



THE HEART TRUTH FOR WOMEN: TAKE ACTION TO PROTECT YOUR HEART

The Heart Truth[®]: Heart disease is the leading cause of death of women in the United States. It is also a leading cause of disability among women. If you've got a heart, heart disease could be your problem.

The good news: You have the power to protect your heart and lower your risk for heart disease. This fact sheet will help you find out your personal risk for heart disease. Then, it will show you how you can take steps to improve your heart health and lower your chances of developing heart disease.

WHAT IS HEART DISEASE?

Coronary heart disease (CHD) is the most common form of heart disease. Usually referred to simply as "heart disease," it is a disorder of the blood vessels of the heart that can lead to a heart attack. A heart attack usually happens when an artery becomes blocked, preventing oxygen and nutrients from getting to the heart. If blood flow isn't restored quickly, the section of heart muscle begins to die.

Another type of heart disease is coronary microvascular disease (MVD), which affects the tiny coronary (heart) arteries. In coronary MVD, the walls of the heart's tiny arteries are damaged or diseased. Studies have shown that women are more likely than men to have coronary MVD. Many researchers think the disease is caused by a drop in estrogen levels during menopause combined with traditional heart disease risk factors.

It is important to know that heart disease is a lifelong condition—once you get it, you'll always have it. What's more, the condition of your blood vessels will steadily worsen unless you make changes in your daily habits. That's why it is so vital to take action now to protect your heart.

DO YOU HAVE RISK FACTORS FOR HEART DISEASE?

Risk factors are conditions or habits that increase the chances of developing a disease or having it worsen. Having one or more risk wchance of developing heart disease because risk factors tend to worsen each other's effects.



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There are two types of heart disease risk factors—those you can't change and those you can control. Two risk factors that cannot be changed are a family history of early heart disease and age (for women, age becomes a risk factor at 55). Also, preeclampsia, a condition that can occur during pregnancy, is linked to an increased lifetime risk for heart disease, including CHD, heart attack, heart failure, and high blood pressure.

Following a heart-healthy lifestyle can help you prevent or control many CHD risk factors. Why does your lifestyle matter? Because many heart disease risk factors can be controlled by making changes in your lifestyle and, in some cases, by taking medication. Major risk factors that you can do something about include (check all of your risk factors):

- ❑ **Smoking.** Smoking is the most powerful risk factor that women can control. Smoking tobacco or long-term exposure to second-hand smoke raises your risk for CHD, heart attack, and stroke, as well as lung cancer and other serious diseases. 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.
- ❑ **High blood pressure.** Normal blood pressure for adults is defined as a systolic pressure below 120 mmHg and a diastolic pressure below 80 mmHg. (The mmHg is millimeters of mercury—the units used to measure blood pressure.) Women who have blood pressure greater than 120/80 mmHg are at increased risk for CHD. 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. High blood pressure can lead to heart disease, stroke, congestive heart failure, and kidney disease.
- ❑ **High blood cholesterol.** High blood cholesterol is a condition in which you have too much cholesterol in your blood. By itself, the condition usually has no signs or symptoms—so many women don't know that their

MENOPAUSAL HORMONE REPLACEMENT THERAPY NOT FOR HEART DISEASE PREVENTION

What is menopausal hormone replacement therapy?

Menopausal hormone therapy can involve the use of estrogen plus progestin for a woman who has her uterus or estrogen alone for a woman who has had a hysterectomy.

What we know about menopausal hormone replacement therapy and heart disease?

In two hormone therapy trials, the Women's Health Initiative studied 27,348 women to learn how menopausal hormone replacement therapy affected whether these women developed heart disease, fractures, and breast or colorectal cancer. Each hormone therapy had risks and benefits that need to be considered. The estrogen plus progestin therapy increased the risk for heart disease, stroke, blood clots, breast cancer, and dementia. Although, estrogen alone had some benefits for younger women who had a prior hysterectomy, estrogen was found to increase the risk for stroke and blood clots in these and other women in the study.

When should menopausal hormone replacement therapy not be used?

From the Women's Health Initiative, we now know that menopausal hormone replacement therapy, estrogen plus progestin or estrogen alone, should not be used in postmenopausal women to prevent heart disease. It also should not be used to lower blood cholesterol levels. Talk with your health care provider about other proven preventions.

When is menopausal hormone replacement therapy okay to use?

Menopausal hormone replacement therapy is still an option for some women to help relieve moderate to severe symptoms that occur early in menopause. If using this therapy, it is best to use the lowest possible dose for the shortest period of time. Talk to your health care provider about whether this treatment is right for you.

cholesterol levels are too high. A blood test called a lipoprotein panel is used to measure your cholesterol levels, shown in milligrams (mg) of cholesterol per deciliter (dL) of blood. Your risk for CHD increases if you have a total cholesterol level greater than 200 mg/dL, an LDL (“bad”) cholesterol level greater than 100 mg/dL, and/or an HDL (“good”) cholesterol level less than 50 mg/dL.

A triglyceride level greater than 150 mg/dL also increases your risk for CHD. A woman’s HDL cholesterol and triglyceride levels predict her risk for CHD better than her total cholesterol or LDL cholesterol levels.

- **Overweight/obesity.** Being overweight or obese can raise your risk for 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 diabetes.
- **Physical inactivity.** Being physically active can reduce your risk for CHD and stroke by 20–35 percent. A lack of physical activity can worsen other CHD risk factors, such as high blood cholesterol and triglyceride levels, high blood pressure, diabetes and prediabetes, and overweight and obesity.
- **Unhealthy eating patterns.** An unhealthy eating pattern can raise your risk for CHD. For example, foods that are high in saturated and *trans* fats can raise your LDL cholesterol level. A high-sodium eating pattern can raise your risk for high blood pressure. Foods with added sugars and fats will give you extra calories without nutrients, such as vitamins and minerals. Alcoholic beverages can be high in calories and therefore contribute to weight gain. Drinking alcohol can also increase blood pressure.
- **Diabetes and prediabetes.** Diabetes is a disease in which the body’s blood glucose (sugar) level is too high. This is because the body doesn’t make enough insulin (a hormone that helps body cells absorb glucose and turn it into energy) or doesn’t use its insulin properly. You are more likely

to develop this disease if you are overweight (especially with extra weight around your middle), physically inactive, or have a family history of diabetes.

Prediabetes is a condition in which your blood sugar level is higher than normal, but not as high as it is in diabetes.

Prediabetes puts you at higher risk for both diabetes and CHD. Diabetes and prediabetes raise the risk for CHD more in women than in men.

- **Metabolic syndrome.** Metabolic syndrome, also called insulin resistance syndrome, is a group of traits and medical conditions linked to overweight and obesity that puts people at risk for both CHD and type 2 diabetes.
- **Preeclampsia.** This condition, which develops during pregnancy, is linked to an increased lifetime risk for heart disease, including CHD, heart attack, and heart failure. If you had preeclampsia during pregnancy, you’re twice as likely to develop heart disease as women who haven’t had the condition. You’re also more likely to develop heart disease earlier in life. Preeclampsia is a heart disease risk factor that you can’t control. However, if you’ve had the condition, you should take extra care to try and control other heart disease risk factors.

Other conditions and factors also may contribute to CHD, including:

- Sleep apnea, 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 a heart attack or stroke.
- Stress, which can cause your arteries to narrow. This can raise your blood pressure and your risk for a heart attack. Research shows that the most commonly reported “trigger” for a heart attack is an emotionally upsetting event, especially one involving anger.
- Alcohol—heavy drinking can damage the heart muscle and worsen other CHD risk factors.

TAKE ACTION TO PROTECT YOUR HEART

Find Out Your Risk

To protect your heart health, it is important to find out your personal risk for heart disease. Be aware that every risk factor counts. If you have even one risk factor, you are much more likely to develop heart disease, with its many serious consequences. Having more than one risk factor is especially serious because risk factors tend to “gang up” and worsen each other’s effects. Fortunately, you have tremendous power to prevent heart disease, and you can start today.

The first step is to see your health care provider for a thorough checkup. Tell your health care provider you want help in achieving your goal of heart health. And don’t hesitate to ask questions, including those on the back page.

MAKE CHANGES FOR A MORE HEALTHY LIFE

- Set realistic, specific goals for a heart heart-healthy lifestyle.
- Act on your goals—take one step at a time.
- Figure out what’s stopping you from making or sticking to heart-healthy lifestyle changes. Keeping a record of your daily food intake and physical activity may help you identify barriers and inspire you to reach your goals.
- Don’t give up—get back on track when you slip up.
- Reward yourself for the gains you’ve made—with something you like to do, not with food.
- Make a plan to maintain your heart-healthy lifestyle changes. Involve friends and family!

Now you’re ready for action. In most cases, that means following a heart healthy eating plan, getting regular physical activity, maintaining a healthy weight, and not smoking. Some women also may need to take medication to control heart disease risk factors.



Sandra's Story

Sandra recognized the signs of her heart attack even when emergency room staff initially did not. After a few short episodes of severe chest pain—what she thought was heartburn—Sandra realized her blood pressure was above normal at 180/110. She called 911, but no additional symptoms were identified in the emergency room. An alert physician admitted Sandra to the cardiac floor for observation, and the next day she suffered a heart attack. A former nurse, Sandra now volunteers her time to educate women across the country about their heart health.



Kick the Smoking Habit

There is nothing easy about giving up cigarettes, but with a plan of action, you can do it. Become aware of your personal smoking “triggers”—the situations that typically bring on the urge to light up—and replace them with new activities. Eat healthfully, get regular physical activity, and ask friends and family for support. You also may want to participate in an organized program to help people quit smoking, offered by many hospitals, health organizations, and workplaces. Also, several medications are now available to help people stop smoking. Ask your health care provider whether you should try any of these medications.



Eat for Health

You can greatly improve your heart health (and your family’s) by eating healthfully. Put together an eating plan for you and your family that offers the balance of calories that is right for you, including vegetables, fruits, whole grains, and low-fat dairy foods. The number of calories you need each day depends on your age and how physically active you are. Include a variety of protein foods such as seafood, lean meats, poultry, beans, eggs, nuts, and seeds. Limit saturated and *trans* fats, sodium, and added sugars. Grill, steam, bake, and sauté foods with heart healthy oils. When cooking food, replace butter, shortening and other fats that are high in saturated fat with foods with healthy fats such as fatty fish, avocado, nuts, seeds, and oils such as olive and canola.



Learn New Moves

Regular physical activity is a powerful way to keep your heart healthy. Aim for a total of 2 hours and 30 minutes of moderate-intensity aerobic activity each week—spending at least 10 minutes at a time. This level of activity can reduce your risk for heart disease and your chances of developing other risk factors, such as high blood pressure, diabetes, and being overweight. Other lifestyle benefits include providing energy, reducing stress, and building confidence. Make physical activity a family affair—choose fun activities that you do together often.



Aim for a Healthy Weight

If you are overweight or obese, taking off pounds can directly lower your chances of developing heart disease. Even a small weight loss will help lower your risk for heart disease and other medical conditions.

When it comes to weight loss, there are no quick fixes. Lasting weight loss requires a change of lifestyle, which includes adopting a healthy, lower-calorie eating plan and getting regular physical activity. Aim to lose no more than 1 to 2 pounds per week. If you have a lot of weight to lose, ask your health care provider or a registered dietitian to help you develop a sensible plan for gradual weight loss.



High Blood Pressure and the DASH Eating Plan

If you have high blood pressure or high normal blood pressure, you can help lower it by following the DASH eating plan. DASH, which stands for “Dietary Approaches to Stop Hypertension,” emphasizes vegetables, fruits, whole grains, and low-fat dairy foods. It is rich in potassium, calcium, and magnesium, as well as fiber and protein. It is low in saturated and *trans* fats and limits fatty red meat, sweets, and sugar-sweetened beverages. Sodium affects blood pressure. You should consume no more than 2,300 mg of sodium a day and reducing sodium intake to 1,500 mg per day may lead to additional blood pressure lowering. If you follow the DASH eating plan and cut down on sodium, you will get even greater blood pressure benefits.



High Blood Cholesterol and the TLC Program

If you need to lower your LDL cholesterol, following the DASH eating plan can help. If cholesterol-lowering medications are needed, it is still important to eat a healthy diet to help lower your LDL cholesterol level.

THE HEART TRUTH[®]

The Heart Truth[®] (www.hearttruth.gov), sponsored by the National Heart, Lung, and Blood Institute (NHLBI), part of the National Institutes of Health, is a national education program for women that raises awareness about heart disease and its risk factors and educates and motivates them to take action to prevent the disease.

The centerpiece of *The Heart Truth* is the *Red Dress*[®], which was created by the NHLBI and introduced as the national symbol for women and heart disease awareness in 2002. *The Red Dress*[®] is a powerful red alert that inspires women to learn more about their personal risk for heart disease and take action to protect their heart health.

QUESTIONS TO ASK YOUR HEALTH CARE PROVIDER

Getting answers to these questions will give you vital information about your heart health and what you can do to improve it. You may want to bring this list of questions and the list of heart disease risk factors you checked off in this fact sheet to your health care provider's office.

1. What is my risk for heart disease?
2. What is my blood pressure? What does it mean for me, and what do I need to do about it?
3. What are my cholesterol numbers? (These include total cholesterol, LDL, HDL, and triglycerides.) What do they mean for me, and what do I need to do about them?
4. What are my "body mass index" (BMI) and waist circumference? Do they mean that I need to lose weight for my health?
5. What is my blood sugar level, and does it mean I'm at risk for diabetes? If so, what do I need to do about it?
6. What other screening tests for heart disease do I need?
7. What can you do to help me quit smoking?
8. How much physical activity do I need to help protect my heart?
9. What's a heart healthy eating plan for me?
10. How can I tell if I may be having a heart attack? If I think I'm having one, what should I do?

NHLBI RESOURCES

NHLBI website: www.nhlbi.nih.gov

The Heart Truth website: www.hearttruth.gov

Visit our **Health Topics** pages to learn more about the risks for heart disease:

Heart-healthy Lifestyle Changes:
<https://www.nhlbi.nih.gov/health/health-topics/topics/heart-healthy-lifestyle-changes>

Heart Disease and Women: <http://www.nhlbi.nih.gov/health/health-topics/topics/hdw>



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Testimonial One:

I have been a member of the St. Andrew Church and Philoptochos in Chicago for many years. I am a senior citizen and up to March 23 thought to be in excellent health. The only medicine I was taking was for high blood pressure since strokes are the main cause of death on my side of the family.

On March 23, 2018 I felt that my heart was beating fast, rushing, doing something that I was not familiar with. My pulse was 186 and I had no idea what was going on. I panicked and after a couple of hours I called my daughter and she brought me to the emergency room. I was diagnosed with Atrial Fibrillation in short AFiB. AFiB is not a deadly illness but if not treated correctly may cause a stroke or heart failure.

I stayed in the hospital for seven days, became depressed and after a short visit with my daughter, I came home. I had every possible side effect of the medicine. I struggled for weeks and then I decided I had to be realistic and start looking after myself. Misery will bring more misery.

I stopped eating salt, that was not difficult. I stopped my glass of wine, not drinking even for pleasure. I stopped eating processed food and red meat. I am not a smoker. Since I am on blood thinners, I stopped eating everything I love that is green, like ραδικια and spinach. I said to myself, you are going to do everything necessary in order to live long enough to see your grandchildren's children.

I keep all doctor's appointments and take my medicine faithfully. I also went for a second opinion that made me feel much much better.

It's about two weeks since I started walking again, and began participating in my Philoptochos meetings. I am attending services more often at church. And yes, when I feel tired and sick I stay at home. I started visiting family and friends.

Ladies, let's make our lives better. If you feel anything unusual, go to the doctor. Don't wait, please. Heart illnesses are not easy but they are manageable.

-S.K.

Testimonial Two:

I have pulmonary hypertension (PH), which is high blood pressure in the lungs. My specific type, pulmonary arterial hypertension (PAH), causes the arteries of the lungs to narrow, placing extra stress on the heart as it works harder to push blood through those arteries to the lungs. As this condition progresses, the heart becomes enlarged and weakens. This may lead to heart failure.

PH is serious, complex, and life-threatening. It is also difficult to diagnose correctly because its symptoms are also associated with other, more well known conditions. These symptoms include shortness of breath, fatigue, dizziness, chest pain, fainting and swelling of the arms, legs and abdomen.

I was diagnosed with PH four years ago. I am blessed to be managing very well with it, as many patients' symptoms are much more severe than mine and their treatment is much more involved.

After diagnosis, I started taking one medication orally. Now I take three. Other patients may require intravenous, subcutaneous or inhaled medications as well as supplemental oxygen. For some, a lung or heart/lung transplant may be needed.

Every few months, I see a cardiologist specializing in PH, have lab work done and a six minute walk test. I have an echocardiogram, pulmonary function test and right heart catheterization periodically.

My current lifestyle involves keeping a healthy diet, avoiding salt and exercising as often as possible. I have more energy on some days than others, so I must pace myself accordingly.

Pulmonary hypertension is a serious disease, but not well known. Even many doctors, including cardiologists and pulmonologists, may be unfamiliar with it. With more awareness, patients can be more quickly diagnosed and lives saved.

-F.K.

Testimonial Three:

In September 2009, I was on my way to a meeting, trotting up a flight of steps, when I first felt the pressure in my chest, as if an elephant had suddenly decided to plop its rump right there and stay awhile. At first I thought it was indigestion and, after popping a mint into my mouth, went off to my meeting. But the pressure didn't go away, and I felt the first twinges of alarm. Whether from the pressure increasing or the onset of anxiety, my breathing started becoming more shallow. And then it happened. My left arm started tingling, and in disbelief I thought, "This *can't* be a heart attack!" After all, I was only 47. Low blood pressure. Slender. Non-smoker. Only drank socially. Exercised regularly. No family history. No.Way.

But it was. Eighty percent blockage. Doctors couldn't explain why it happened. I was the least likely candidate and yet here I am, on medication for the rest of my life. But God keeps me strong. I visit my cardiologist faithfully every three months. I limit my intake of fried foods. Fast foods are practically non-existent in my diet. I drink plenty of water, because it is *imperative* that you stay hydrated. I try to eat foods high in potassium, because that was the one thing where the blood tests indicated a deficiency. I dislike bananas so I eat avocados, almonds, and yogurt. I limit my intake of red meats.

I continue to exercise regularly. Tai-yoga was an excellent choice of exercise once I began my road to recovery. I also kick-box (against a target), I took up fencing, and now my favorite past time is ballroom dancing.

Having heart disease is not the end of the world. But YOU, dear Sisters, have to help yourself. I'm not saying you have to become a Ninja Warrior. But it's your choice whether to munch on a bag of potato chips instead of a bowl of fruit. Take walks instead of binge watching TV. Be vigilant about checkups. You just never know what could be prevented. Thank you for listening to my story. I hope at least one person can benefit from it. -M.K.R.

Testimonial Four:

In 2009, I had a heart attack. I was treated with various drugs and a pace maker was inserted. At that initial time, a stent was also inserted. My pace maker is checked every six months. A few years later, another stent was inserted. This past year I was having tightness in my chest and went back to the hospital and three more stents were inserted. I am now harboring a blockage that makes it too difficult for a stent to be placed. New medication has been prescribed, along with my many other pills. I should note that I am 83 years young, my mother and brother died of massive heart attacks at age 79 & 63. My younger sister had a triple bypass three years ago. I try to stay active. I have lived in Tarpon Springs all my life and have been singing in the choir at St. Nicholas Cathedral for many many years!

-N.A.

Testimonial Five:

1. Slow heartbeat: I don't know how long I had had it before my doctor suggested that I have a pacemaker put in. I was scheduled for a surgery and he felt it would be dangerous not to have one because under anesthesia, the heartbeat would get even slower.

2. I had a pacemaker implanted and it was one that was part of a research study and so for three years I was monitored with a home monitor and had visits to the lab every six months. With this pacemaker, I can have an MRI if necessary. The period of monitoring ended this June and they feel that the pacemaker is good for another eight years.

3. Not because of the pacemaker, but because my A1C was a bit high, I gave up many "treats" and lost about 55 pounds. It has helped not only my heart, and lowered my A1C to a normal level, but improved my health in general and my self-esteem.

-Anonymous

Testimonial six:

In 2007, at the age of 63, it was discovered I had coronary artery disease. Angioplasty was performed, and my first stent to resolve the blockage was inserted. Over the course of the next several months, I had four more stents inserted. After several years, I began to experience chest pains and they were becoming more frequent. In 2016, at the age of 72, another exam revealed a triple bypass would be needed. My triple bypass was performed at Duke University Hospital in Durham, North Carolina. Once I recovered from the surgery – no more pain!

I manage my coronary artery disease with medication, diet and exercise. While I was at the rehabilitation center, I developed a pinched nerve in my lower back that has limited my exercise regimen.

Although my lifestyle is somewhat limited, I continue to believe that I am truly blessed with good health.

I had my surgeries at Duke University Hospital in Durham, North Carolina. While I was a patient there, it reinforced what I had been reared with – what a great country America is. God has blessed America with the best of everything.

-R.M.C.