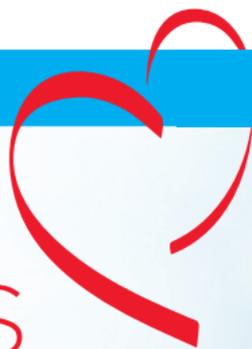


Women's Heart Initiative



A WOMAN'S  
GUIDE  
TO **PROTECT**  
**HER HEART**



LEARN. ACT. LIVE.



**Main Line Health**<sup>®</sup>  
Lankenau Heart Institute

Well ahead.<sup>®</sup>



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## Welcome Letter

We are excited to share with women of all ages this very important guidebook. We hope it empowers you to take control of your own heart health by being fully informed of the unique risk factors that increase your risk of heart disease—the #1 killer of women in this country.

Along with the known risk factors like family history, high cholesterol, diet and other lifestyle behaviors, we are seeing a new trend in women having heart risk factors related to pregnancy, menopause, auto immune conditions, even cancer treatment, which are unique to women and are becoming increasingly relevant when assessing risk for heart disease.

As you read the stories and information within, we hope you discover something new and that you'll take the initiative to talk with your doctor and get optimal care for yourself or a loved one.

We also want you to know that Lankenau Heart Institute has a stellar team of physicians in different areas of cardiology and cardiovascular surgery—including *the largest team of female cardiologists in the region*—working in close collaboration to ensure you get the very best care and attention. Together we strive for a future that includes earlier detection of heart disease in women and women-centric research to help improve treatments and outcomes.

Further, it is the vision of Women's Heart Initiative that women's unique risk factors for heart disease become common knowledge for women and their providers, and that there is no delay in care for women at risk. In the spirit of our motto, **LEARN. ACT. LIVE.**, we encourage you to *learn* the truth about heart disease and the risk it poses to women; know how to *act*, by getting yourself and your loved ones screened and tested; and through this shared action, together we will *live*.

Let that vision unfold here, now.

With all my heart,

**Maribel Hernández, MD**

*Director, Women's Heart Initiative*

## One Woman's Story Is a Valuable Lesson for Many

Ten years ago, Carol Cutler—a fit and active 46-year-old—suffered a severe heart attack. Her distressing experience taught her a valuable life lesson—one that she hopes all women will take to heart.

“Listening to your body is so important,” Carol says. “Women need to trust their own instincts. You know when something is wrong.”

That lesson rang true for Carol when she first started feeling symptoms all those years ago after a workout. It began simply as numbness in her foot. That numbness spread to her arms. Then came the headache. When Carol finally felt the classic chest pain indicative of a heart attack, it was three days later. She raced to call **911**.

When the paramedics arrived, they tested her vitals and told her she was fine. But Carol knew otherwise. She asked to be taken to the hospital, a decision that may have ultimately saved her life.

*“Listening to your body is so important.  
Women need to trust their own instincts.”*



At Lankenau Medical Center, doctors found the source of Carol's symptoms. She had suffered a spontaneous coronary artery dissection—a tear in an artery wall that happens for no known reason. The tear allowed blood to flow out of her left main coronary artery, which eventually burst completely open. Her heart and other parts of her body weren't receiving enough blood.

*“It's important to take the time to listen to your inner voice. Be proactive about your health. You must be an advocate for yourself.”*

Carol had to have emergency bypass surgery. During the surgery, healthy veins from her legs were used to repair the damaged artery and tears in nearby arteries. The complicated surgery was a success, and Carol made a full recovery.

Today, Carol knows much more about the unique challenges women face when it comes to heart disease. She is an avid spokesperson for patient awareness and works closely with the Women's Heart Initiative at Main Line Health's Lankenau Heart Institute. She strives to motivate people—particularly women—to pay close attention to their heart health. It may sound basic, but it's no small task.

“Women have a tendency to just keep going, to take care of their families and other responsibilities, to put everything else ahead of themselves, even if they aren't feeling well,” says Carol. “It's important to take the time to listen to your inner voice. Be proactive about your health. You must be an advocate for yourself.”

## What Women Need to Know About Cardiovascular Disease

Do you know what condition kills more women in the U.S. than any other? Surprisingly, it's not cancer—it's cardiovascular disease (often referred to as heart disease). According to the American Heart Association, one in every three women die each year die of heart disease—yet only 44 percent of women are aware of this fact. Among African American women there is even less awareness and a 25 percent higher death rate than for Caucasian women. Other bad news: Rates of heart disease in women are not falling as quickly as they are in men, and women are less likely than men to survive their first heart attack.

Heart disease is due to the build-up of a sticky substance called plaque in the heart's arteries. This plaque build-up (also called atherosclerosis) narrows arteries and slows blood flow. If blood clots form on the plaque, blood flow may completely stop. Death of that part of the heart muscle—a heart attack—then results.

*Heart disease is the #1 killer of women.  
Let's change that.  
It's time to start taking care of you.*

### **Some women's heart attacks are different**

Women tend to have coronary microvascular syndrome, where blockages spread more evenly along the artery wall or form in the smaller arteries. This syndrome makes blockages less obvious on tests. It also leads to heart attack symptoms that tend to be milder and more easily overlooked.



## Learn these symptoms: They could mean a heart attack

Women often serve as the heart of their families and communities, putting the needs of others before their own. They are less likely to have the sudden, crushing chest pain typically associated with a heart attack. However, this doesn't make the heart attack any less serious. That's why it's important to be your own health advocate and be alert for any of these heart attack symptoms:

- Discomfort, pain, pressure, fullness, or squeezing in the center of the chest
- Extreme tiredness (feeling more worn out than usual with normal activities)
- Feeling tired or having a “heavy” chest with no exertion
- Problems with sleep
- Discomfort or pain in the jaw, back, neck, stomach, or one or both arms
- Shortness of breath
- Nausea or vomiting
- Weakness, dizziness, or lightheadedness
- Cold sweats
- Feelings of anxiety

If you are at risk for heart disease and have any of these symptoms, especially if they last longer than five minutes, call 911 right away! Getting treatment within the first hour may mean the difference between life and death.



## Stroke—It Can Happen to You

Did you know that atherosclerosis can also affect the brain? If an artery that carries blood to the brain is blocked, that part of the brain can be damaged. This is a stroke. A stroke can cause problems with reasoning, speech and movement. It can even be fatal.

Women are more likely than men to have and die from having a stroke. Why? Some risk factors for stroke, such as diabetes and high blood pressure, are more common in women or increase a woman's risk more significantly. Pregnancy increases stroke risk. Taking certain birth control pills can double a woman's risk for stroke, particularly if that woman has high blood pressure and uses tobacco. Hormone changes around menopause also increase stroke risk. African American women are nearly twice as likely to have a stroke as white women.

### Stroke and TIA symptoms: Don't ignore them

Know the symptoms of stroke and TIA. This can save your life. If any of the following come on suddenly, call **911** right away:

- Numbness, weakness, or pain in the face or of a limb, usually on one side of the body
- Confusion, trouble speaking, or trouble understanding
- Trouble seeing
- Dizziness, trouble walking, or loss of balance
- Severe headache with no known cause
- Nausea, general weakness, shortness of breath, chest pain, or a racing heartbeat

*“After suffering a stroke, I look back and maybe should have called 911, but I downplayed things a bit. I wanted my husband to take me to the hospital. I thought I was better than I actually was.”*

*—Beth Croner, Main Line Health stroke survivor*

### **TIA: A warning to pay attention to**

TIA (transient ischemic attack) causes some or all of the symptoms of a stroke, but goes away without permanent damage. At least a third of people go on to have a stroke, so a TIA should never be ignored. If you have stroke symptoms that resolve, don't brush them off—get care right away.

## **The Signs of a Stroke**

Fast treatment of stroke dramatically reduces the risk for death and disability. Increase the odds that you or a loved one will survive a stroke by learning the signs and calling 911 when they appear.

### **Remember the acronym FAST:**



#### **Face drooping**

Ask the person to smile—numbness will make the face appear uneven.



#### **Arm weakness**

One arm may drift downward as one side of the body becomes paralyzed.



#### **Speech difficulty**

Words may sound slurred, garbled, or inaudible, and understanding language often becomes difficult, too.



#### **Time to call 911**

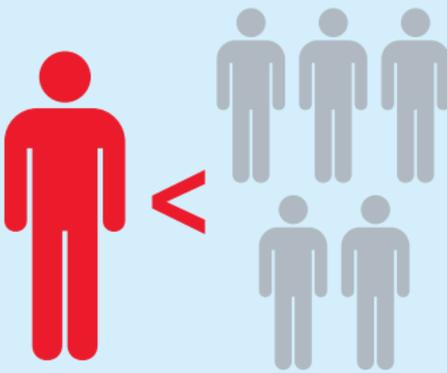
Treatments administered within three hours of the first symptoms can restore blood flow to the brain and prevent long-term damage.

# Listen to Your Heart—Especially When It Skips a Beat

The speed and pattern of your heartbeat is regulated by your heart's electrical system. A problem with this electrical system can result in an irregular heartbeat, also called an arrhythmia. It's normal to have occasional fast, fluttering, or skipped heartbeats. However, when arrhythmias are prolonged or cause other symptoms, they're a problem.

One type of arrhythmia is called atrial fibrillation (Afib). Afib occurs when the upper chambers of the heart beat irregularly and very fast. Afib may be related to other heart problems, such as high blood pressure or heart disease due to valve issues, or it may occur on its own. Factors that may contribute to development of Afib include older age and heavy alcohol use.

Afib can cause uncomfortable symptoms. Even if it doesn't cause symptoms, it's still a serious health problem. It can lead to other heart problems, such as heart failure (weakening of the heart muscle), and **it can put you at a five times greater risk for stroke**. Treatment for Afib helps limit episodes and reduce stroke risk.



People with atrial fibrillation (Afib) have a **5x greater risk** of stroke.



Another type of arrhythmia, called supraventricular tachycardia (SVT), causes a fast, pounding heartbeat that may be associated with symptoms of dizziness and weakness, which can go away as suddenly as it started. Treatment with medications and/or catheter ablation procedure can prevent the reoccurrence of the arrhythmia.

To help protect your health, your doctor should evaluate any arrhythmia. If you are experiencing palpitations and have any of the symptoms below, call your doctor.

- A fast, pounding heartbeat
- Shortness of breath
- Fatigue, dizziness, or fainting
- Chest pain or pressure

## History of Preeclampsia? Know Your Cardiovascular Risk

Preeclampsia is a problem that may develop during pregnancy. It causes normal blood pressure to go dangerously high. Other problems may develop, including protein in the urine (signaling kidney problems) and severe swelling. This condition can lead to health risks for you and your baby during pregnancy, including premature delivery, seizures and stroke.



Although blood pressure generally improves after delivery, experts do not know exactly what causes preeclampsia. **In fact, preeclampsia can make you twice as likely to have a future heart attack or stroke and four times as likely to develop high blood pressure.** If you've had preeclampsia, be sure you have regular follow-ups to monitor your heart health.

It is important for women to know this is a risk factor for cardiovascular disease and to seek appropriate preventive care from an early age. The American Heart Association now considers a previous history of preeclampsia (or a history of gestational diabetes) to be a "major risk factor" as part of its system of risk assessment, alongside conditions such as hypertension and hypercholesterolemia, and other features such as smoking, physical inactivity, obesity, or family history.

## Gestational Diabetes and Your Heart

Gestational diabetes is a type of diabetes that occurs only during pregnancy. Not all mothers-to-be develop it, but all women should be tested for it after six months of pregnancy.

Like other types of diabetes, gestational diabetes occurs when the body has trouble using sugar (glucose) in the blood. This causes abnormally high sugar levels. High blood sugar can cause problems for both you and your baby, including an increased risk for preeclampsia, miscarriage, and premature delivery.

Though gestational diabetes often goes away after delivery, having had it raises a woman's risk for developing both type 2 diabetes and cardiovascular disease. This is important to know so you can begin taking steps right away to protect your health. If you had gestational diabetes during a pregnancy, be sure to tell your doctor so that your heart health can be monitored and you can practice good preventive care.

## Postpartum Cardiomyopathy: A Rare but Serious Risk

Postpartum (or peripartum) cardiomyopathy is a form of heart failure (weakening of the heart muscle) that strikes women at the end of pregnancy or shortly after delivery.

Experts aren't sure what causes this condition. Past studies have linked it to hormones, genetics, or problems with the immune system. Women who become pregnant after 30, who are African American, who are pregnant with twins, or who have a history of pregnancy problems (such as preeclampsia) are at greater risk for developing it.

Symptoms of postpartum cardiomyopathy can appear gradually or suddenly and can range from mild to severe. The can be mistaken for other conditions or normal changes during pregnancy, so it's important to know what they are:

- Shortness of breath
- Swelling of the feet
- Problems breathing when sleeping or laying down
- Cough
- Chest pain

Certain medicines can ease symptoms. In severe cases, a woman may need a device that keeps her heart beating or even a heart transplant.

Postpartum cardiomyopathy can cause major problems—timely diagnosis and treatment are key. Listen to your body and if something doesn't seem right, speak up.

*“When all of your symptoms are medically explainable, but you know in your gut something is still not right, work with your doctor and be persistent. My babies have a mommy because I listened to my body!”*

*—Andrea Cardwell, Main Line Health  
peripartum cardiomyopathy survivor*

## Menopause and Heart Disease Risk

Menopause is when a woman stops having periods. The stage leading up to this point, called perimenopause, commonly starts in a woman's late 30s to 40s and lasts for months to years. During perimenopause, a woman's body produces less estrogen and other hormones. Her body releases eggs less regularly, and the woman has shorter and more irregular menstrual cycles. A woman is less fertile during this time, though she can still become pregnant.

Hormone changes during perimenopause may lead to physical and emotional symptoms, such as hot flashes, mood swings, and trouble sleeping. These hormone changes, particularly the drop in estrogen, can also affect the heart. Studies suggest that estrogen may keep blood vessels healthy and help prevent atherosclerosis, and the drop in estrogen during menopause likely raises a woman's risk for heart disease.

Aging brings other changes that make heart disease more likely. A woman's metabolism may slow down, leading to weight gain. Blood pressure and LDL ("bad") cholesterol levels may increase. An unhealthy lifestyle, including smoking and lack of exercise, can add to these risk factors for heart disease. In fact, smoking can lead to earlier menopause, further increasing your risk for heart disease.

Taking care of your health is important at any age, but it's even more important after menopause. Learn what you can do for your heart health, then make lifestyle changes and see your doctor for screenings. With care, you can live a longer, healthier life.

### **Listen to your body, see your doctor**

If you notice health changes that may be due to menopause, see your doctor to have your heart disease risk evaluated. You and your doctor can discuss what further tests are right for you.



## After Menopause, Be Mindful of Your Heart

Your cardiovascular disease risk increases as you get older, especially after menopause. For example, you are more likely to have high blood pressure and glucose intolerance (a risk factor for diabetes). Also, a recent study suggests that women who become menopausal before age 45 have a higher risk for cardiovascular disease. No matter when you begin menopause, focus on factors you can change—adopt a healthier lifestyle to lower your risk for heart disease, stroke, and other health issues. It's never too late to start.

- **Lose excess body weight.** Being overweight can raise your blood pressure, cholesterol, and triglyceride levels and put you at risk for type 2 diabetes.
- **If you smoke or use tobacco, quit.** Smoking and tobacco use can harm your heart and blood vessels, increasing your risk for heart disease and making a stroke more likely.



- **Get active.** Strive for at least 30 minutes of moderate-to-vigorous exercise five days a week. Exercise is great for your heart and blood vessels and helps you lose weight, control cholesterol levels, and lower blood pressure.
- **Focus on healthy food.** Eat more heart-healthy vegetables, fruits, and whole grains. Limit salt and added sugars, which can affect your blood pressure and arteries. Watch your intake of full-fat dairy, fatty meats, and partially hydrogenated oils—these are sources of unhealthy saturated fats and trans fats, which damage arteries.
- **Limit alcohol to no more than one drink per day.** Too much alcohol can raise blood pressure and increase your risk for health problems, including stroke. One drink is 12 ounces of beer, 4 ounces of wine, or 1½ ounces of 80-proof spirits.



## Some Cancer Treatments May Injure Your Heart

If you have cancer, you might not be thinking about your heart. But it's good to be aware that certain cancer treatments can harm the heart and blood vessels. This includes chemotherapy, the effects of which depend partly on the dose and frequency of the drug. Increasing age and preexisting cardiac disease also place you at greater risk. Radiation therapy to the neck or chest can also lead to damaging of the heart or blood vessels.

Heart and blood vessel damage due to chemotherapy or radiation may include the development of abnormal heart rhythms, heart failure, heart attack, and high blood pressure. Heart effects may develop during treatment or months or years later.

Cardio-oncologists are doctors who have expertise in monitoring and treating potential heart effects of cancer treatment. They work closely with oncologists to help protect the heart. If you are being treated for cancer, talk with your oncologist about seeing a cardio-oncologist. If you've been treated for cancer in the past, ask your doctor about follow-up to monitor the health of your heart.

## Available Screening Tests

There are many heart health tests available. Talk to your healthcare provider about which tests are right for you.



### **Fasting glucose**

This test measures the amount of sugar in your blood. It is used to screen for and diagnose diabetes. If you are age 45 and older, talk with your healthcare provider about having this test.



### **Fasting lipids (cholesterol)**

This test helps measure the levels of LDL cholesterol, HDL cholesterol, and other lipids in your blood. Having unhealthy cholesterol levels increases your heart disease risk. The tendency to have unhealthy lipid levels is largely determined by genes inherited from your parents and grandparents. Have your cholesterol tested, especially if you have a family history of heart disease.



### **Electrocardiogram (ECG)**

This test records your heart's electrical activity and helps show the speed and pattern of your heartbeat.



### **Stress electrocardiogram (Stress ECG)**

This is an ECG done during exercise, often on a treadmill or a stationary bike. For women who can't exercise, medications that increase the heart rate can be given to mimic the effects of activity.



### **Event and holter monitoring**

These portable monitors can be worn on the body to help record the heart's electrical activity for a period of time. They are useful to help detect arrhythmias that may happen only occasionally. Holter monitoring is a painless way to record your heartbeat for 24 to 48 hours. As for event monitoring, it may be used at the time the symptom is present, for one week or longer.



### **Echocardiogram**

This test shows the structure and function of the heart. Harmless sound waves (ultrasound) are used to send a moving picture of the heart to a monitor. This helps show the size and shape of the heart and gives information on how well the heart and valves are working.



### **CT angiography**

This test can be used to diagnose certain heart problems and help detect narrowing or blockages in the coronary arteries. This test also looks for atherosclerosis and can help predict your risk for a heart attack.



### **HeartFlow analysis**

This is a noninvasive, advanced test that shows how each blockage in your coronary artery affects blood flow to your heart. It is used in addition to a CT angiography scan to create a 3D image of the coronary arteries. This analysis helps your doctor better understand the condition of your arteries and may help determine the best treatment approach—for example, whether you would benefit more from stenting or from bypass surgery.



### **Coronary calcium score**

A coronary calcium score helps predict your risk for a heart attack. The score is the result of a coronary calcium scan. This CT scan is an X-ray test that checks for calcium in the walls of the coronary arteries. These deposits are linked to the build-up of plaque or atherosclerosis that causes coronary artery blockages. Plaque is made up of calcium, fat, cholesterol, and other substances. A buildup of plaque can cause a heart attack.



## Have Rheumatoid Arthritis or Lupus? Watch Your Heart

The immune system uses inflammation to fight bacteria and viruses, repair damaged tissue, and protect the body in other ways. With the autoimmune diseases rheumatoid arthritis (RA) and lupus, the body's immune system turns against itself. This leads to chronic inflammation in many parts of the body. RA mainly affects the joints, while lupus attacks the joints, skin, lungs, blood vessels, heart, liver, kidneys, and nervous system. About four million Americans, most of them women, have one of these conditions.

RA and lupus are linked to heart problems, particularly early-onset heart disease. In fact, research suggests that people with inflammatory disorders are more likely to have silent heart attacks. RA and lupus can also cause inflammation of the heart sac (pericarditis) and lupus can cause inflammation of the heart muscle (myocarditis).

If you have RA or lupus, it is important to understand your heart disease risks. To live a heart-healthy lifestyle, be proactive and talk to your health care provider regarding your heart risk.

# Myths & Facts

*Myth: Women are more at risk for cancer than they are for cardiovascular disease.*

**Fact:** Heart and vascular disease (together known as cardiovascular disease or CVD) is the single most common cause of death among women. Nearly twice as many women in the United States die of heart disease, stroke, and other cardiovascular disease as they do from all forms of cancer combined, including breast cancer.

*Myth: Only women over 50 need to worry about their heart health.*

**Fact:** Cardiovascular disease is the third-leading cause of death for women ages 35 to 44, and the second-leading cause of death for women ages 45 to 54.

*Myth: If I'm fit, I don't have to worry about my heart.*

**Fact:** Being in the best of shape does not eliminate your risk for cardiovascular disease. Just being a woman increases your risk, as does increasing age. You may have other risk factors that you can't control, such as a family history of heart disease. If you do have a family history, the AHA recommends getting your cholesterol checked starting at age 20. Also keep in mind that you can be thin, but if you still smoke, make poor food choices, or have high blood pressure or high cholesterol, you are at greater risk—regardless of your healthy weight. Don't assume you're immune. Take steps to change unhealthy habits and protect your heart.



## LEARN. ACT. LIVE.

We hope that this guidebook has helped you learn more about heart disease and the risks to your heart. With this knowledge, you can act to get screened and make lifestyle choices that protect your health. Take steps to live well, for yourself and the ones you love.

**LEARN** about your risk for heart disease and how you can reduce it. Share your learning with other women in your life.

**ACT** by taking a little time out for you. Go to a screening. Cook with your heart in mind.

**LIVE** a long and happy life. And know that if you need us, we're close by, with some of the region's best heart care for women.

[mainlinehealth.org/whi](https://mainlinehealth.org/whi)

If you have questions related to your heart health or would like more information on the **Women's Heart Initiative** and our team of cardiologists at Lankenau Medical Center, Bryn Mawr Hospital, Paoli Hospital, Riddle Hospital, or one of our many community cardiology practices throughout the region, please call **484.476.3WHI (484.476.3944)** or email [mlhwomensheart@mlhs.org](mailto:mlhwomensheart@mlhs.org).



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