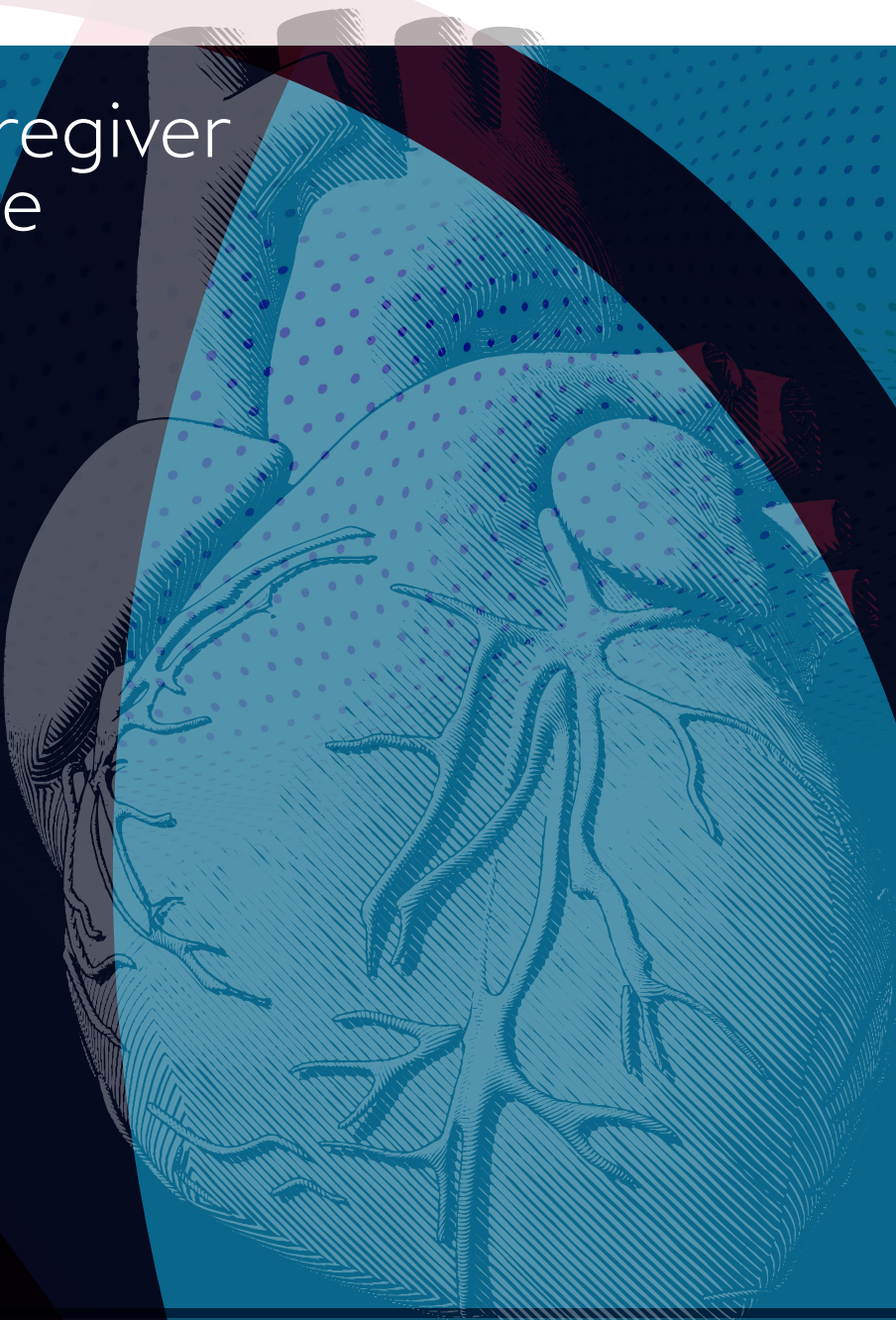


HeartGuide™

A Patient & Caregiver
Resource Guide



Mended Hearts®

HeartGuide™

A Patient & Caregiver
Resource Guide



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The Journey to a Healthy Heart Starts With **You**

MAYBE YOU WERE RECENTLY DIAGNOSED WITH HEART DISEASE OR HAD A heart event. You may have been prescribed a new medication, or just had heart surgery or other medical procedures. Now you might be feeling overwhelmed, scared, confused and alone. We want you to know that no matter what your diagnosis is or how you found us, Mended Hearts is here to provide support, education and to advocate for you and with you.

Heart disease can strike at any age — young or old — and can even happen to people with healthy lifestyles. Heart disease affects both men and women regardless of race, cultural background, education level, socio-economic status or geographical location. Heart disease is nothing to be ashamed of, and Mended Hearts is here to help you feel better, have a more positive outlook and learn about heart disease and your choices so *you* are in control.

The truth is that millions of people live — and thrive — with heart disease. Modern medicine can and does save lives, although the responsibility falls on us to take steps to keep our hearts healthy. At Mended Hearts, we view managing heart disease as a marathon, not a sprint. Living a healthy life isn't something we can do in weeks, months or even years; it is something we must work toward throughout our lifetime. As with many things in life, having the support of people who truly understand what you are going through makes it easier.

No one should have to walk this path alone. Mended Hearts is here to provide support and education as you learn to live with heart disease. We want to walk with you as you begin your journey with a mended heart.

Throughout this HeartGuide™ you'll find important information about different types of heart disease, treatment options, medical procedures, issues that heart patients face, tips and tools for improving your heart health and lots of forms to help keep track of what's important. And you'll soon learn that heart health isn't just about the heart itself; it's a complete circle that requires caring for both your mind and body.

Take your time and read each section as it applies to you. Keep this HeartGuide™ as both an informative reference guide and a tool to empower you as you grow on this journey.

If you need us, we are as close as your phone or email. When you reach out to us, we will happily connect you with others who are just like you and can support you on your journey.

With Heart Love,
Your Mended Hearts Family

**“Take a deep
breath, you
can do this!”**

– Deanna,
Heart Patient

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An Introduction to Cardiovascular Disease



Your Heart Journey

Keeping our hearts healthy happens many different ways.
Think of healing as a complete circle of mind and body care.



Things You May Be Feeling — Cardiac Patients



IF YOU FEEL LIKE YOUR LIFE CHANGED after your cardiac event or heart surgery, you're right. After such an event, it's common to think of time as separated into life before the event or surgery and their life afterward. In the weeks, months or even years after a cardiac event or surgery, you may experience a variety of feelings and emotions. Some people feel more alive, joyful and grateful after surviving a heart event or surgery, and positive emotions are important to celebrate. But sometimes patients can have something called the "cardiac blues" — and that's perfectly common and "normal."

'Cardiac Blues'

Many cardiac patients report having what some call the "cardiac blues" after heart surgery and/or a heart event. You may feel sad, guilty, shocked, angry or have other feelings after your heart event or surgery. Keep in mind that a cardiac event is an emotional experience as

"It's normal to want things to go back to the way they were before. Change of any kind can be hard but having a heart attack was really hard to get used to. You have to make a new normal and accept things are different. Different is not always worse." — John

well as a physical one. It's important to know that many other patients experience the same sadness, disappointment and discouragement. Here are a few things that may cause or worsen a case of the "cardiac blues."

Wanting things to go back to the way they were. It can be hard to accept that life is different after heart surgery and/or cardiac events. It's normal to want things to go back to the way they were "before." Change of any kind can be difficult, and few things change people

as much as having a heart event or heart surgery. Patients report crying more than they used to and feeling upset about the changes in their life.

Unrealistic Expectations. One common cause of the blues is not meeting milestones when expected. You may have been given a timeline for meeting recovery milestones — or found information about recovery timelines online — and feel disappointed if you're not healing on that schedule. It can be frustrating when you don't recover in the timeframe you expected, and if you expected to be "back to normal" by a certain time, you may feel discouraged and depressed if that doesn't happen.

Ups and Downs. Sadness also can come from the normal ups and downs you experience as you recover. You may have good days followed by days when you feel worse, and it's frustrating to be doing well and then suddenly have a bad day, or a series of bad days. Some patients improve rapidly at first, and then their recovery slows down or plateaus. Patients want to continue improving with no setbacks, but recovery is not often all downhill. Sometimes it feels like three steps forward and two steps back (or even two steps forward and three steps back). One patient pointed out: "Ups and downs were in our life before our heart events, but we took them for granted and blew them off. But with being in bed longer and moving slower, we have more time to dwell on them now." Ups and downs can be physical, but they can be emotional too, even when you're doing well physically. Also, blues can happen more than once and may reappear.

Limitations and Restrictions. As a cardiac patient, you may not be able to do the same things you did before the event or surgery, and this may

cause sadness and depression. These limitations are often just temporary, but sometimes they can change your lifestyle significantly. Changes in diet, physical activity, hobbies, work and your social life can be difficult at first. Some patients report often feeling tired or lacking the energy to do things they want to do. Feeling isolated can make the blues worse too. Not being able to go back to work right away affects many patients, and concerns over income can cause fear and anxiety. Patients say they start feeling better when they are able to get out more, particularly if they enjoy the outdoors, and that taking walks and getting out of the house can make them feel much better.

Denial. Trying to deny feelings can actually make them worse. One patient said that because she had never felt these kinds of feelings before, and felt like she should be thankful, she kept pretending she was okay. Until she wasn't. When she finally talked about her feelings, she learned that it's okay to have these feelings and that many other cardiac patients have them, too.

Pain and Tenderness. Having a heart event or surgery can result in chest pain and tenderness, even for a long time afterward. (See the section on Angina for more information about pain.) Chronic pain can cause depression, particularly if it prevents you from doing activities that you enjoy and want to do.

Things That May Help

Acceptance. Accepting that your life is different now, and there is a "new normal," may help you do better emotionally. Remember that everyone's recovery is different and try to let go of expectations about how life "should be."

Staying positive. Many cardiac

patients say a positive attitude is the thing they found most helpful. This does not mean denying your feelings or avoiding reality, but finding things that are going well and that you can be grateful for often helps. Many patients recommend finding things you CAN do instead of focusing on what you can't do. Some days, it can be hard to stay positive, but if you can find just one positive thing in your day, it can help. Patients also recommend laughter for improving their mood.

*Note: Some patients say that when people told them to be more positive, it actually made them feel worse. If you're not ready to feel more positive, don't be hard on yourself. Everyone recovers in their own time, and you'll get there when you are ready.

Gratitude. Being grateful, even for something as small as a bird singing, a sunny day, a beloved pet — or anything else in your life you are thankful for — can help with the cardiac blues. Gratitude can change the way you see things, and many heart patients say that just feeling gratitude has helped them in recovery. Remembering this during times of sadness may be beneficial.

Discuss Your Feelings. Patients recommend discussing how you are feeling with your doctor, nurse, or other medical professionals who are familiar with your situation. These professionals have experience helping people who are struggling with sadness after a cardiac event or surgery and can recommend things that could help. They may prescribe medications if depression prevents you from enjoying your life. Or they may recommend simple steps you can take that will make a big difference in your mental health.

Getting Outside. Many patients with



cardiovascular disease say being outside — whether that means sitting outside, taking walks, or just being outside and in nature — makes a big difference when it comes to feeling better.

Writing. Heart patients tell us that writing down their experiences, thoughts and feelings is often helpful. Some write in a journal, and some even end up writing books. (Several heart patients have inspirational books that other heart patients find helpful.)

Support. Sharing stories, experiences and feelings with people who truly understand can make a world of difference. Often patients will comment that they can say things to other heart patients that they just can't say to friends and family. They don't want to admit their feelings to those who haven't "been there." Support groups, whether online or in-person, can be a powerful source of healing.

Find online communities for heart patients and their families at connect.mendedhearts.org

You May Also Experience...

Guilt. Some heart patients report feeling "survivor's guilt" after a heart event or heart surgery, particularly if they know others didn't survive the same event or a similar event. This guilt can sometimes lead to sadness and depression. When friends or family members pass away

from heart disease, some patients experience that guilt all over again and wonder why they survived while others did not. This is a common, normal reaction.

The best thing to do when feeling survivor's guilt is to find something you are grateful for in your life, even something small. Also, if you can, think about why you are here and how you can make a difference to patients going through similar experiences. Mended Hearts Accredited Visitors tell us that being able to "give back" helps them feel better because they use their experience to help others.

If you are interested in visiting other patients in-person, by phone, email or video, we want to hear from you! Email info@mendedhearts.org or call 1-888-432-7899 (1-888-HEART99)

Post-Traumatic Stress Disorder (PTSD). Many heart patients and caregivers of heart patients have experienced trauma. Having heart surgery or a heart event, alone, may cause trauma. Caregivers who witness a loved one go through a heart event or surgery often find it traumatic. In some cases, patients have come close to death or even coded and been brought back to life. They may have been told they had little chance of survival or that they likely would not survive. They may have had several events and/or surgeries for their condition.

Trauma that patients and their loved ones experience may result in symptoms of Post-Traumatic Stress Disorder (PTSD).

PTSD occurs when people re-experience a trauma. They may try avoiding people or places where the trauma occurred, have trouble focusing and become easily irritated and angered. Typically these symptoms last for at least

SYMPTOMS OF PTSD

These symptoms may begin to appear months or even years after the traumatic event, and typically last for at least a month.

- ⊖ Avoiding people or places where the trauma occurred
- ⊖ Having trouble focusing
- ⊖ Becoming easily irritated and angered.

a month after the event. (Symptoms may begin to appear months or even years after the traumatic event.)

It is not uncommon to have symptoms of PTSD after a cardiac event or surgery. People who have symptoms of PTSD or are diagnosed with PTSD should seek counseling, particularly when it interferes with their everyday life.

Learn more about PTSD here: <https://adaa.org/understanding-anxiety/posttraumatic-stress-disorder-ptsd/symptoms>

People have many emotions and feelings after a heart event, and understanding that you are not alone in feeling this way is important. If you find yourself having negative feelings, try some of the ideas above recommended by patients themselves. And know that Mended Hearts is here to support you if and when you need it.

To talk to a caring volunteer, call our Heartline at 1-844-HEART87 (1-844-432-7887) from 10 a.m. to 6 p.m. Eastern time Monday through Saturday, or leave a message after hours to have someone call you back.



Depression and Heart Disease

DEPRESSION IS A FAIRLY common condition among people who have had a heart event. As many as one in three heart attack patients report feelings of depression. Women, people who've already experienced depression and people without a social network or emotional support are at higher risk for depression following a heart event. Depression isn't a character flaw, nor is it something you can just shake off or snap out of. It's a serious condition that requires medical care. And treatment works. It's important to know the symptoms and treatments for depression.

The Symptoms of Depression

It's normal to feel sad on occasion, but sometimes you may feel sad for long periods of time, with or without a reason. If these sad feelings interfere with your daily

activities, it could be depression. Common symptoms associated with depression are:

- Feeling sad or being in a depressed mood, including crying
- Losing interest in activities you used to enjoy
- Noticeable changes in appetite or weight

BE INVOLVED: QUESTIONS FOR YOUR HEALTH CARE TEAM ABOUT DEPRESSION

- How do I know if I have depression?
- How can I get screened for depression?
- What are some treatment options for depression with the risks and benefits for each option?
- What do I do if my anti-depression medication isn't working?
- Where can I find more information and resources?

- Sleeping too much or too little
- Feeling agitated, cranky or sluggish
- Not seeing a clear, purposeful future
- Loss of energy
- Feeling guilty or worthless
- Having trouble concentrating or making decisions
- Having thoughts of death or suicide

Depression is often described as having symptoms from this list nearly every day, all day, for two or more weeks. That's part of what distinguishes the symptoms of depression from ordinary feelings of sadness. The first two symptoms are especially common in people with depression. For patients who've had a heart event, the symptoms of depression can be more severe. That's why it's especially important to seek treatment if you believe you are experiencing depression.

Know the Effects of Depression

Depression affects everything in your daily life, including recovery from a heart event. In fact, depression can make recovery more difficult because it can lead to the following conditions:

- Less desire to follow the treatment plan
- Greater likelihood to smoke and drink
- Greater risk for another heart event
- Less interest in physical activity
- Bad eating habits
- Anxiety
- Problems at work or school
- Family and relationship problems
- Social isolation
- Suicide

Get Diagnosed

Don't be afraid to see your healthcare team if you suspect you are depressed. Prepare to answer some questions about your symptoms. It helps to write down

DO YOU HAVE SUICIDAL THOUGHTS AND FEELINGS? GET HELP NOW.

If you have thought about suicide, don't put off talking to someone. Make an appointment with a healthcare professional immediately and, in the meantime, talk to a friend, family member or spiritual leader about how you're feeling. Call the toll-free National Suicide Prevention Lifeline any time, 24 hours a day, at 1-800-273-8255, where trained counselors are ready to help. However you handle these thoughts and feelings, don't try to do it alone.

basic information beforehand, such as:

- Any symptoms, even if they don't seem related to the depression
- Personal information, such as major changes in your life (including your heart event) or anything that is causing you stress
- Medications, including over-the-counter medicines, vitamins and supplements

Also, write down questions you want to ask your health care team. Ask about symptoms, treatment options and anything else you need to have clarified. Make sure you get all your questions and concerns addressed.

To diagnose depression, your healthcare team will probably conduct a physical exam and take a medical history. In some cases, a blood test or other lab procedures may help in diagnosis and finding the right treatment plan. You will probably be asked about your thoughts and feelings, what you've noticed about your own behavior patterns, and whether you've had such symptoms before.



NOT THE NEW NORMAL

You should know that depression isn't a "normal" part of recovering from a heart event. It needs to be treated, along with the heart event itself. Depression affects the mind and the body. Left untreated, it can have a negative impact on every aspect of your life.

Treating Depression

Treatment for depression works for most people. Think of treating depression as part of your overall treatment plan after a heart event. Here are some of the treatment approaches used for depression; your healthcare providers will help determine the best approach for you.

Medication

Antidepressant medication can reduce symptoms of depression. Some antidepressants can interact with heart medications, so ask your health care team before starting any new medications. Many medications work relatively quickly and have few side effects. Be aware that most

medications have to build up in the bloodstream to become effective, so be patient.

Ask about any side effects when reviewing possible therapies and report any that you experience from the medication.

Talk Therapy

Another important treatment option is psychotherapy, or "talk therapy." Counseling sessions with a mental health provider can be an effective part of your treatment plan. In fact, research shows

that a combination of medication and talk therapy works best for most people with depression.

The goal of such therapy is to help you better understand your condition and to develop approaches for coping with depressed thoughts and feelings when they arise.

Social Support

Many people find that having a social network helps them cope. This can include group therapy or a support group, or it can be something unrelated to depression itself, such as a church group or Mended Hearts. Many Mended Hearts volunteers have reported that being involved in the organization has helped improve their symptoms of depression.

Lifestyle

It may not surprise you to learn that diet and exercise play a key role in combating depression. It's important to eat a healthy diet as part of your treatment plan following your heart event; sticking to that diet can keep depression away.

Likewise, exercise is important in controlling depression symptoms. It doesn't have to be strenuous exercise, either; physical activities such as walking

or gardening can help. Avoid alcohol and illicit drugs in treating depression. Although they may seem to help with symptoms, they generally make depression worse in the long run and can lead to severe health consequences, among other problems.

Battle depression by getting plenty of sleep. If you are having trouble sleeping, talk with your health care team about your options for improving your sleep.

Today, there are many different effective options for treating depression. Be sure to work with your healthcare team to find one that works for you and your lifestyle. If the first option doesn't work, try another option until you feel better.

DON'T GO IT ALONE

For more information about depression, consult these sources:

- **National Association of Social Workers** www.socialworkers.org
- **The National Alliance on Mental Illness** www.nami.org
1-800-950-NAMI (6264)
- **MedlinePlus** www.medlineplus.gov
- **National Institute of Mental Health** www.nimh.nih.gov
- **National Suicide Prevention Lifeline** 1-800-273-8255



The Empowered Patient

EMPowered: TO MAKE [SOMEONE] stronger and more confident, especially in controlling their life and claiming their rights. [dictionary.com](https://www.dictionary.com)

Being diagnosed with heart disease can make you feel anything but empowered. Patients often feel that they have lost control of their lives and blame themselves for where they are now. Many patients find themselves wondering, “Why did this happen to me?”

People who’ve had a heart event, such as a heart attack, might feel like they can’t trust their body and know what activities they can do safely. They have questions about what they can eat and how to avoid stress. These are all normal feelings that many heart patients experience, but nonetheless, you don’t have to accept these feelings as your new normal. You have the power

to take back control by becoming an empowered patient.

Anyone can be an empowered patient. Empowered patients understand their condition and how it affects their body. They ask questions so they can make informed decisions about their healthcare. They understand that they may need to make changes to their lifestyle, diet and exercise routines, and they take responsibility for their own care and recovery. This is not always easy to do, and may take practice, but no matter what your condition is, you, too, can be an empowered patient.

Here are some steps you can take to become an empowered patient.

7 Steps to Becoming an Empowered Patient

Step 1: Educate yourself

Learning about your heart condition is the first step on your road to recovery and improving your heart health. The first step is to understand your diagnosis and what it means. Ask your doctor or another member of your healthcare team to explain your condition. Continue asking questions until you fully understand. Don't be afraid to ask that your diagnosis be explained to you more than once — ask as many times as you need. Mended Hearts has Discussion Guides with questions to ask your doctor that you can use if you need help knowing what to ask.

Don't feel like you have to learn everything all at once. Ask your healthcare team for reliable print and online resources that you can review on your own time so you can learn more about your condition, treatments available to you and your hospital and healthcare team.

Also, learn about your treatment options and the risks and benefits of each option. There may be different medications, therapies or treatments available to you, and you may have to ask questions to find out what they are.

When it comes to your health, don't be afraid to get a second opinion so you have more information. Many patients feel uncomfortable with this or think that they are being disloyal, but getting a second opinion, especially if you need heart surgery or other medical procedures, is often a good idea.

Step 2: Be part of the team

Patients often feel that their healthcare team knows more than they do and that they aren't a valuable part of the team because they don't have a medical degree, but that's not the case. You know yourself better than anyone else on your team! You have information that the rest of your healthcare team doesn't, and unless you're part of the team, they may miss some valuable information that could improve your care. Also, if something doesn't feel right for you or work with your lifestyle, speak up and let others on your healthcare team know. Don't be afraid to ask as many questions as you need to and to adjust any recommendations that don't feel right for you.

Part of being on the team is learning all of your options before making a decision; don't assume the first option is always best. There may be other therapies or treatments to consider.

Make sure your healthcare team is listening and paying attention to you. If you feel excluded from the team, find one that includes you in the decision-making process.

Step 3: Get information

If you need surgery, a medical procedure or testing, you can never ask too many questions. Be sure to get all of the information you need before you undergo your procedure. Some of the questions to ask include:

- How often have you performed this procedure?
- What is your success rate?

BECOME AN EMPOWERED PATIENT!

- Educate yourself
- Be part of the team
- Get information
- Voice your opinions
- Make informed decisions that are right for you
- Know your rights as a patient
- Take responsibility

- What is your survival rate? (Note that some hospitals and centers take higher risk patients and this may not be the most helpful information if that is the case.)
- What is the average recovery time at this hospital? Do patients fully recover?
- What complications may occur?
- How does the care team work together, and can I meet everyone on the team?
- What resources are available for me at this hospital?

Step 4: Voice your opinions

Your voice matters. Your story matters. If you are uncomfortable with something, speak up and ask for a solution. Be kind and considerate in your requests, but don't be afraid to share your concerns, suggestions, feelings and needs with your healthcare team. If you're afraid, let your healthcare team know that and ask about what kind of support and resources are available to you. Advocate for yourself like you would for your best friend or a loved one.

Step 5: Make informed decisions that are right for you

You might hear people talk about shared decision making. Shared decision making means that there is ongoing communication between the patient and the person providing care. Through this communication, the patient and provider together decide on treatment.

Here are some questions patients can ask their provider as part of shared decision making:

- What are my treatment options?
- What are the risks and benefits of each treatment option?
- Who is the best person to perform

this treatment?

- What happens if I choose not to have this treatment?
- How do I find out if I can afford this treatment?
- Will I be able to get the treatment/ medication that is being prescribed?
- What kind of lifestyle changes will I have to make?
- What is recovery like for the different treatment options?

Shared decision making can only happen when:

- You are educated and understand the decision you are making
- You have information about all your options
- You have been given time to digest and think about the decision and ask follow-up questions
- You and your loved ones agree about the decision; or even if they don't agree, they will support you
- You are confident in your decision

Step 6: Know your rights as a patient

- You have the right to be treated as part of the team
- You have the right to ask questions and get answers
- You have the right to be heard
- You have the right to a second opinion (and third and fourth)
- You have the right to suggest alternatives
- You have the right to feel confident in the team
- You have the right to change your mind
- You have the right to appeal decisions if you don't agree

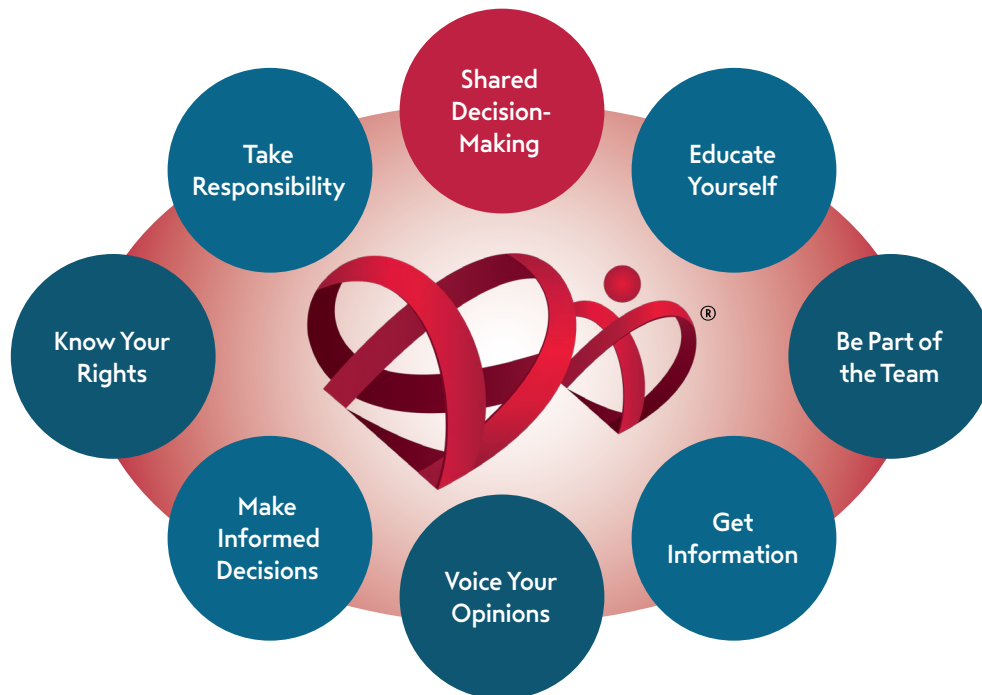
Step 7: Take Responsibility

You are responsible for your healthcare and your recovery. If you make a choice that doesn't turn out like you planned, as we all do at times, find out how to make things better going forward. If you feel you need to make changes to your treatment plan, consult your team and make it happen.

Keep yourself informed. New information and new treatment options become available all the time, and it helps to learn about them for the future.

Keep yourself informed by:

- Reading this HeartGuide and keeping it handy.
- Joining Mended Hearts' e-newsletter with many updates and resources available to you.
- Following Mended Hearts and Mended *Little* Hearts on social media sites.
- Joining Mended Hearts' online communities where patients and caregivers ask questions, get answers and share information.





What Is Cardiovascular Disease?

MOST PEOPLE HAVE HEARD OF heart disease and have been affected by it in some way. In fact, heart disease is the leading cause of death in the U.S. However, many forms of heart disease and heart events are preventable, and some forms of heart disease are curable. In most cases, heart patients can take action to keep themselves healthier and improve their quality of life. One of the first and most important steps is understanding heart disease.

The term “cardiovascular disease” is less common, but it includes more diseases discussed in this guide. Cardiovascular disease (CVD) is any kind of disease that affects your heart or blood vessels. “Cardio” refers to the heart and “vascular” refers to all the blood vessels

in the body. These two systems work together to pump the blood through your body. When one part of the system doesn't work right, the body often fails to receive the rich nutrients and oxygen that it needs.

Heart disease is a broad phrase that describes conditions that affect the heart's valves, muscle and coronary arteries and the sac around the heart. Each of these components plays a critical role in heart function — the valves make sure the blood is pumped in the right direction, the muscle pumps the blood the body needs and the coronary arteries carry blood to the heart muscle.

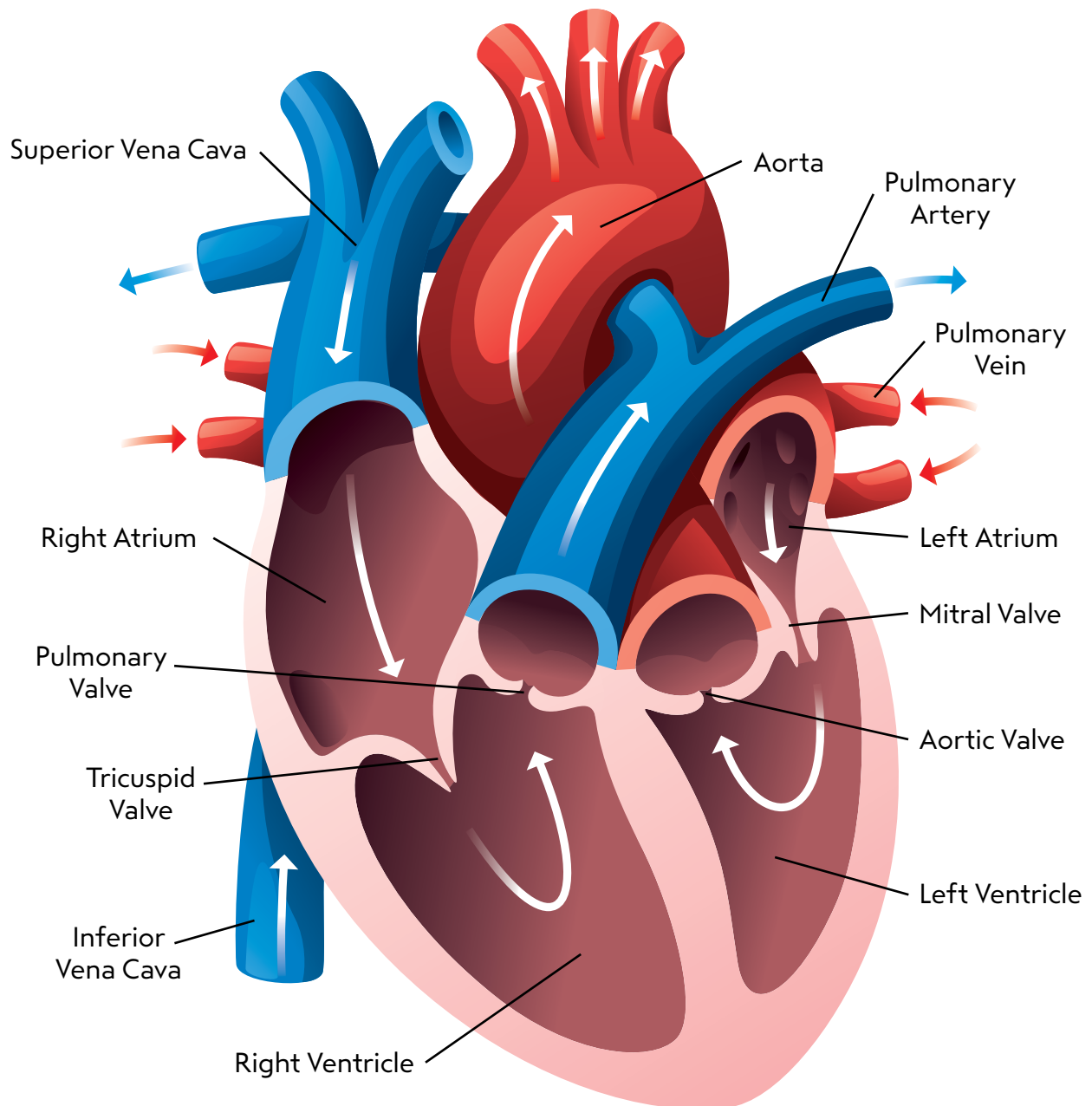
A heart without heart disease has four chambers, four valves, vessels that deliver blood in and out of the heart and

CARDIOVASCULAR DISEASE VS. HEART DISEASE

“Heart disease” refers to conditions that affect the heart's valves, muscle and coronary arteries. “Cardiovascular disease” expands that definition to also include all the blood vessels in the body.

an electrical system that keeps the heart pumping in rhythm. In a healthy heart, blood flows into the heart from the body through the inferior and superior vena cava and goes into the right atrium. It then travels through the tricuspid valve to the right ventricle, where it is pumped out to the lungs for oxygenation through the pulmonary valve and pulmonary artery. The blood is then

oxygenated in the lungs and comes back into the heart through the pulmonary veins. From the pulmonary veins, blood flows into the left atrium and is then pumped through the mitral valve to the left ventricle. The left ventricle pumps blood to the body through the aortic valve and the aorta. A heart without heart disease and normal blood flow through the heart looks like this:



Common Types of Cardiovascular Disease

Here are the most common types of cardiovascular disease, although there are many others that may be less common or fall in one of these main categories.

Angina: Pain or discomfort in the chest or other areas of the body that is usually caused by blocked arteries in the heart is called angina. Over time, plaque builds up in the arteries; this is called coronary heart disease or coronary artery disease, which may cause angina. About 10 million people in the U.S. are living with angina.

Atherosclerosis (aTHərōsklə'rōsəs): When fats, cholesterol and other substances build up in and on the artery walls, it causes hardening and narrowing of the arteries. This may also be called arteriosclerosis and it's a common cause of heart attacks, strokes and peripheral vascular disease. Peripheral artery disease (PAD) is a common form of atherosclerosis. About 18.2 million adults aged 20 and older have artery disease, either coronary artery disease or peripheral artery disease.

Atrial fibrillation (ā-trē-al fi-bra-lā-shen) or **AFib:** AFib presents itself as a quivering or irregular heartbeat. This happens when the top chambers of the heart (the atria) don't beat in rhythm with the bottom chambers (ventricles). That can lead to blood clots, stroke, heart failure and other heart-related complications. It is estimated that as many as 6.1 million people in the U.S. have AFib.

Cardiomyopathy (kahr-dee-o-my-OP-uh-thee): Cardiomyopathy refers to diseases of the heart muscle. The

heart becomes less able to pump blood throughout the body and is incapable of maintaining a normal electrical rhythm. The result can be heart failure or irregular heartbeats called arrhythmias. Cardiomyopathy is dangerous because it often goes unrecognized and untreated. It is different from other heart problems because it frequently affects younger people. There are four main types of cardiomyopathy and approximately one out of every 500 people have some form of the disease.

Congenital heart defects: Congenital heart defects, or CHDs, are present at birth and affect the growth or development of the heart's muscle, chambers or valves. Some CHDs affect the heart muscle, which can cause rhythm disorders as well. About one in four CHDs will require surgery or medical intervention. While CHD is the most common type of birth defect in the U.S., affecting one in every 110 babies, it is also a lifelong chronic condition requiring specialized CHD care.

Deep vein thrombosis: Deep vein thrombosis and pulmonary embolism are serious but preventable medical conditions that are often underdiagnosed. Deep vein thrombosis (DVT) is when a blood clot forms in a deep vein; usually in the lower leg, thigh or pelvis, although they can also occur in the arm. DVT can happen to anyone and cause serious illness, disability and in some cases, death. The good news is that DVT is preventable and treatable if discovered early. The precise number of people affected by DVT/PE is unknown, although as many

COMMON TYPES OF CARDIOVASCULAR DISEASE

- Angina
- Atherosclerosis
- Atrial fibrillation (AFib)
- Cardiomyopathy
- Congenital heart defects
- Deep vein thrombosis
- Heart attack
- Heart failure
- High cholesterol
- Hypertension
- Rhythm disorders (arrhythmias)
- Stroke
- Valve disease

as 900,000 people could be affected (one to two per 1,000 people) each year in the United States

Heart attack (also called myocardial infarction, or MI): A heart attack occurs when the blood supply to the heart muscle (the myocardium) is severely reduced or stopped. This is typically caused by a blockage in at least one of the arteries feeding the heart. Every year, more than 800,000 Americans have a heart attack.

Heart failure: Sometimes referred to as congestive heart failure, this is a chronic condition in which the heart can't pump enough blood to meet the body's needs. There are four stages of heart failure, ranging from mild to severe. In some cases, the heart can't fill with enough blood. In other cases, the heart can't pump blood to the rest of the body with enough force. Some people have both problems. About 6.5 million people in the U.S. live with heart failure.

High cholesterol: Cholesterol is a wax-like substance that your body makes and needs, but high levels of cholesterol in the blood increase risk of heart disease and stroke. Lifestyle and family history are risk factors for high cholesterol along with Type 2 diabetes and obesity. Diets high in saturated fats, lack of exercise and smoking can increase cholesterol levels. **Familial hypercholesterolemia (FH)** is an inherited genetic condition where the "bad cholesterol," or LDL, is very high beginning in childhood. High cholesterol has no signs and symptoms, so getting your cholesterol checked is important. More than 38% of people in the U.S. have high cholesterol.

Hypertension: Also known as high blood pressure, hypertension occurs when the pressure of blood pushing

against the walls of your arteries is too high. Normal blood pressure is 120/80 mmHg. The first number when measuring blood pressure is systolic pressure, or the pressure in your arteries when your heart beats. The second number, or diastolic pressure, is the pressure in your arteries when your heart rests between beats. High blood pressure increases your risk of heart attack or stroke. Nearly 50% of adults in the U.S. have high blood pressure.

Rhythm disorders (arrhythmias): Rhythm disorders are diseases that affect the heart's muscle and its ability to pump in rhythm. Arrhythmias include conditions like bradycardias and tachycardias. There are many different rhythm disorders; some are genetic, while other causes are not clearly understood.

Stroke: A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or ruptures. When that happens, part of the brain cannot get the blood (and oxygen) it needs, so it and brain cells die. Every year, more than 795,000 people in the U.S. have a stroke.

Valve Disease: Your heart has four chambers and four valves that serve as doorways to different areas of the heart. The four valves in your heart are tricuspid, mitral, aortic and pulmonary valves. They keep blood flowing in the correct direction. Heart valve disease is when one or more of the valves in your heart doesn't work as it should. In some cases, one or more of the valves doesn't open or close properly. This can disrupt the blood flow from your heart to your body. Up to 11.6 million people in the U.S. are estimated to have some form of valve disease.

CARDIOVASCULAR DISEASE BY THE NUMBERS

- Every year, more than 800,000 Americans have a heart attack.
- About 6.5 million people in the U.S. live with heart failure.
- More than 38% of people in the U.S. have high cholesterol.
- Nearly 50% of adults in the U.S. have high blood pressure.
- Every year, more than 795,000 people in the U.S. have a stroke.
- Up to 11.6 million people in the U.S. are estimated to have some form of valve disease.



Tests for Diagnosing and Treating Heart Disease

SEVERAL TESTS CAN HELP YOUR healthcare team diagnose heart disease. Some of these are relatively minor and quick, while others are more involved. Tests sometimes seem scary to patients and waiting on results can cause anxiety. Learning more about what to expect from common tests can help you feel more prepared and confident.

Please note that you may have more than one of these tests so your healthcare team can give you a more accurate diagnosis, as each test may provide a different view of the heart.



Blood Tests

What Is It?

Blood tests are commonly used to diagnose and treat heart disease, often along with other tests, because your blood can give a lot of information about your heart health. A blood test looks at certain proteins, cholesterol,

chemicals and other things in your blood that might affect your heart. Blood tests can also provide clues on how your heart is functioning.

What Does It Test For?

Cholesterol — A blood test called a “fasting lipid profile” can show the level of cholesterol or if there is anything in your blood affecting blood flow. High cholesterol can help predict future heart disease.

Heart Attack — Abnormal protein levels in your blood, specifically cardiac troponins, can help show levels of heart damage and, along with an EKG and other tests, indicate whether you have had a heart attack recently. Abnormal troponin is one of the ways to test to see if you are having a heart attack, and whether the chest pain you are having is worrisome.

Heart Rhythm — If you have issues with heart rhythm, a blood test can show levels of potassium, calcium and magnesium in your blood; all of them play a role in heart rhythm. It is also often important to be sure your thyroid is functioning normally.

Heart Failure — A blood test looking at a chemical in your blood called natriuretic peptides (you might be told they are checking BNP) may be part of screening for heart failure. This test may be done if you are short of breath or having leg swelling. It can help determine the level of fluid retention when the heart is not circulating blood well.

How Is It Done?

Typically, blood will be drawn out through a small needle; sometimes it is done through an IV. The blood is sent to a lab for testing.



Chest X-Ray

What Is It?

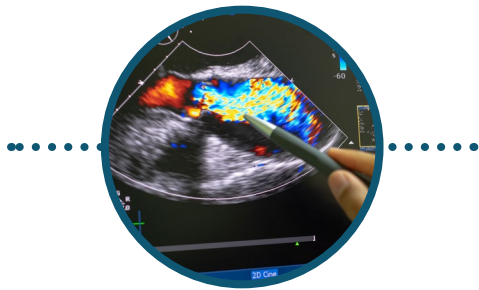
Chest X-rays show images of your heart, lungs and bones. An X-ray machine will be used to take a picture that can show inside of your body. Some X-ray machines are large and noisy and some are much smaller.

What Does It Test For?

Chest X-rays are commonly used to get some basic information when a person is experiencing shortness of breath or chest pain. Repeat X-rays can see if treatment is working. X-rays can show the size and shape of your heart, fluid on your lungs or other lung issues.

How Is It Done?

When you have a chest X-ray, you will be asked to remove clothing from the waist up and put on a gown. Typically you are given a heavy apron to put around your waist to protect you from radiation. (Please note that the radiation exposure is very low, perhaps even lower than you experience in the environment like flying in a plane.) If you might be pregnant, be sure to let the technician know. You will be placed between a large camera and a plate that will capture the image, and one or more pictures will be taken.



Echocardiogram (Echo)

What Is It?

An echocardiogram (echo) is a test that uses sound waves (ultrasound) to take moving pictures of your heart or, in the case of a fetal echocardiogram, of your baby's heart. Images are created using a device called a transducer that is moved around to create the images. In some cases, 3D moving images are created.

What Does It Test For?

Like an X-ray, this test can show the size and shape of your heart, but unlike an X-ray, it can show how well your valves are working, blood flow, problems with the aorta and muscle contraction in your heart. And unlike an X-ray, there is no radiation.

How Is It Done?

There are different types of echocardiograms.

The most common is a transthoracic echocardiogram (TTE), in which a device called a transducer is placed on your chest and moved around to create images of your heart. A gel substance is placed on your body to make the images clearer but is wiped off at the end of the procedure.

A transesophageal echocardiogram (TEE) may be used when the doctor can't see your heart well through a transthoracic echocardiogram. It is also better for looking at the valves. For a TEE, you'll be sedated and a tube will be inserted

in your esophagus (or food pipe) to take pictures of the heart. An anesthesiologist may help with sedation if you get a TEE.

Fetal echos are used to look at a baby's heart before the baby is born by moving the transducer around on the mom's belly. This test is normally done at least 18 weeks into the pregnancy and typically tests for congenital heart defects (problems with how the heart is developing).

Echocardiograms may also be used as part of a stress test (see below).



Electrocardiogram (ECG or EKG)

What Is It?

This test measures the electrical activity of the heart to examine the heart's rhythm. When your heart beats, an electrical impulse goes through your heart. This electrical impulse, or wave, can be recorded using sensors that are placed on the body. The sensors are little stickers placed on your chest, arms and legs.

What Does It Test For?

An ECG shows if your heartbeat is normal. An ECG will be able to look at the heart rhythm and can diagnose irregular heartbeat or other rhythm issues, such as atrial fibrillation. Other abnormalities in the ECG can provide clues to possible underlying heart concerns, such as a previous heart attack.

How Is It Done?

An ECG or EKG is a simple test that can be done in a doctor's office. Sticky pads with sensors and wires are placed on your body for a short time while the heartbeat is recorded either on paper or on a computer.



Stress Test

What Is It?

When a patient has symptoms indicating an issue with the heart, like dizziness, chest pain, shortness of breath and/or irregular heartbeat, the doctor will often recommend a stress test. This common test is done on a treadmill or a stationary bike to see how your heart reacts to exercise. Sometimes, this test is done with medication instead of exercise if the patient is unable to exert themselves enough.

What Does It Test For?

This test is done to show how blood flows through your heart during physical activity. It is often used to show whether there are any coronary artery blockages and may also be used to help evaluate valve disease and/or heart failure.

How Is It Done?

This test can be done in the doctor's office or a hospital. You'll either get on a treadmill and start walking or start riding a stationary bike. Your blood pressure and heart rhythm will be monitored as you exercise, and you may

be asked to stop at intervals for a brief echocardiogram. Usually you'll be asked to keep going until you need to stop, but sometimes the test is stopped when a certain heart rate is reached. While some patients find this test uncomfortable, it is essential to get a full picture of how your heart is functioning.

Although stress tests may be done with just a treadmill, sometimes the doctor will also look at your heart with an ultrasound (echo) or keep you longer to take pictures of your heart under a camera. The test involving a camera is called a nuclear stress test, and does include some radiation exposure. You should ask your healthcare team what type of stress test you are getting so you arrive prepared.



CT Scan

What Is It?

A computerized tomography (CT) scan is a painless test where a computer combines X-rays showing detailed pictures of your heart to create a 3D model of the whole heart.

What Does It Test For?

This test is used to show calcium buildup, which can indicate problems in the coronary arteries (blockages) and can also look at the aorta and/or valves.

How Is It Done?

A CT scan is typically done in a hospital or clinic, and it usually takes about 15

minutes once you're in the machine. You will lie down on a narrow table and a large donut-shaped circle will move over the area being tested. You might be given something called contrast dye, which is injected into your bloodstream, before the CT scan. The dye helps create better pictures of the blood vessels or heart structures.

CT scans do involve radiation, and some patients are allergic to the contrast dye. Talk to your doctor about the risks and benefits.



Cardiac Catheterization (Cath)

What Is It?

Cardiac catheterization — also called cardiac cath, cath or angiogram — is a test where a long, thin tube is placed into an artery generally either in the wrist or the groin, and then guided up to your heart using images from an X-ray machine. This test allows the doctor to see if there are any blockages in your heart arteries. Contrast dye is generally used with a cardiac cath.

What Does It Test For?

The main reason for this test is to look for blockages, but it can also check pressures and oxygen levels in the heart and evaluate heart failure. In addition, it can test for problems with heart valves and for congenital heart defects.

How Is It Done?

Adult patients are often awake during a

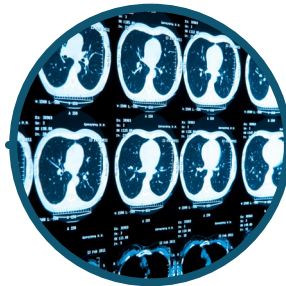
cardiac cath, but are given light sedation beforehand. Children are often sedated so they are not awake.

During the procedure, a long, thin tube (catheter) is inserted into an artery or blood vessel through the groin, neck or arm. The tube is then guided to the heart by doctors using X-rays as their map.

Some treatments can also be done on the heart during a cardiac cath, such as stent placement and angioplasty (ballooning) for blocked arteries.

A cardiac catheterization can also be used for more complicated procedures, too. Narrowed heart valves can be opened in a procedure called valvuloplasty. The pulmonary and/or aortic valves can also be replaced in some patients. Some holes in the heart can be closed. And a cardiac ablation can be done for irregular heart rhythms.

A cardiac cath is common and safe, but risks may include bleeding where the tube was inserted, damage to blood vessels, an allergic reaction to the contrast dye and other less common risks. Some radiation is involved in a cardiac cath, so talk to your doctor about the risks and benefits of this procedure.



Cardiac MRI

What Is It?

A cardiac MRI can provide detailed information about the type and severity of your heart disease to help your doctor decide the best course of treatment. It can also help explain results from other

imaging tests such as chest X-rays and chest CT scans.

How Is It Done?

Before your procedure, a contrast dye to highlight your heart and blood vessels may be injected into a vein in your arm. The MRI machine is a large, tunnel-like machine with a table, and you will lie still on the table as it slides into the machine. You will hear loud humming, tapping, and buzzing sounds when you are inside the machine as pictures of your heart are being taken, but you will be able to communicate with the technician performing the test the whole time. You may be asked to hold your breath for a few seconds during the test.

Cardiac MRIs have few risks. In rare instances, the contrast dye may be harmful to people who have kidney or liver disease, or it may cause an allergic reaction. Because this test can take up to an hour, some patients who are claustrophobic or anxious may have trouble staying still for that long. Please let your healthcare team know if you have concerns about claustrophobia or anxiety so they can either provide sedation for the procedure or have an anesthesiologist available.



Heart Monitor

What Is It?

Heart monitors are used to diagnose heart rhythm problems. Some are external, which means they are placed on the

outside of the body, while others are internal. The internal ones are under the skin, do not attach to the heart, and can be removed after a few years.

How Is it Used?

Holter Monitors and Event Monitors are commonly used for diagnosing problems with a patient's heartbeat. Other monitors may be used after a patient has been diagnosed with an irregular heartbeat to make sure there is no danger to the patient.

You may be given an external monitor during an office visit, or your doctor may have it shipped to you with clear instructions for how to use it. Usually, you'll wear the monitor for a couple of days, but it may be as long as a month, depending on what your healthcare team is looking for. Your doctor might ask you to write down any symptoms during this time so the team can review the data and see if there was a problem with your rhythm at the same time as your symptoms.

Monitoring has minimal risks, although some patients experience skin irritation from the external leads, a part of the monitor stuck to the skin. If you need a heart monitor, ask your doctor about the risks, benefits and monitoring options to make sure you choose the monitor that's right for you.



Being a Caregiver

BEING A CAREGIVER OF SOMEONE with heart disease is an important role. Caregivers can help patients cope with new or evolving health issues, feel more positive and hopeful, stick to treatment plans and help them get well. However, caregivers need support, too. This section covers ways that caregivers can stay strong, healthy and positive throughout this journey.

When a loved one has heart disease, it often affects caregivers both physically and emotionally. When a loved one gets a diagnosis or needs to have heart surgery or other medical procedures, it can be scary. Being thrust into the role of caregiver can happen quickly — in an emergency situation or even with a new diagnosis at a doctor visit. It is not uncommon for people caring for loved one with heart disease to feel overwhelmed and unsure of how to help.

You may also be dealing with fatigue and stress from hospital stays, holding down responsibilities at home, lack of sleep, and over (or under) eating. All of this can lead to anxiety, depression or sometimes even resentment because your life has been disrupted. You may at times feel guilty, thinking you are somehow responsible for your loved one's heart condition. Then you may feel guilty for feeling resentful or upset. At Mended Hearts, we've experienced these issues, too, and have gotten past them with time and support.

The most important thing is for you to realize you are not alone. Caregiving is hard work, so you must take care of yourself in the process. Here are some tips to make your role easier:

Ask For and Accept Help

Acknowledging and accepting that you need help can be difficult. Remember,

“Being a caregiver means I have to take care of my husband but also myself. Some days it’s hard to find the time, but when I don’t take care of myself too, I’m not good for anyone.”
– Charlotte

your family and friends want to help you and support you during this stressful time, so let them! Make a list of things that need to be done to keep your life running, and be realistic about what you have the time and energy to accomplish yourself. Keep the list handy, and next time a friend or family member asks how they can help, pick something from the list.

Part of this process is having an honest conversation about changes in responsibilities and roles in your household regarding budgets, chores, child-care and other tasks. Together, talking about solutions to potential problems can help you manage well as a family.

Stay Informed

Heart disease is unfamiliar territory for many caregivers. This HeartGuide will help you, as a caregiver, become more familiar with this new world and learn what your loved ones can expect before and after treatment. After treatment, every heart patient receives recovery information about diet, exercise, medication and activities. Sifting through that information so that instructions are understood and followed is a big part of your new role and, if possible, accompany the patient to his or her healthcare appointments so, together, you will learn and hear more. Strive to be a partner, not the leader, of this journey; you're in this together.

Stay Calm

It's easy to become overprotective of loved ones in heart recovery, as our mission becomes protecting them from further harm. While that's normal, it can cause feelings of anger, frustration and worthlessness if the patient can't live up to our expectations. Try understanding

the recovery process and be there for support — but don't overdo it. Balance your love and support with a willingness to step back and let your family member chart his or her own course to heart health.

Avoid Burnout

Burnout occurs when caregivers don't get the help they need, or when they take on more than they're able to do, either physically or financially. When you get burned out, you're not able to be an effective caregiver and run the risk of experiencing your own serious health issues.

As a caregiver, you may be so focused on your loved one that you don't realize when your own health and well-being are suffering. Watch for these signs of caregiver stress:

- Feeling overwhelmed
- Feeling tired often
- Getting too much sleep or not enough sleep
- Gaining or losing weight
- Becoming easily irritated or angry
- Losing interest in activities you used to enjoy
- Feeling sad
- Having frequent headaches, body pain or other physical problems
- Abusing alcohol or drugs, including prescription medications

Too much stress, especially over a long time, can harm your health. As a caregiver, you're more likely to experience symptoms of depression or anxiety. In addition, you may not get enough sleep or physical activity, or eat a balanced diet — which increases your risk of medical problems, such as heart disease and diabetes.

If you are experiencing caregiver burnout, take time to take care of

CAREGIVER TIPS

- **C**ommunicate how you are feeling.
- **A**llow time to grieve the lack of normal.
- **R**eflect on the journey — in writing.
- **E**ducate yourself about the disease.
- **G**et involved in your loved one's care.
- **I**nvolve others who can help.
- **V**isit with other Mended Hearts members.
- **E**at right.
- **R**est — get sleep and take breaks.



yourself; you can't be an effective caregiver if you're sick. Talk to others who understand so you'll feel supported in your journey. And remember the importance of finding others to help you. Learn to accept help from others and create time to care for your health.

Take Care of Your Health

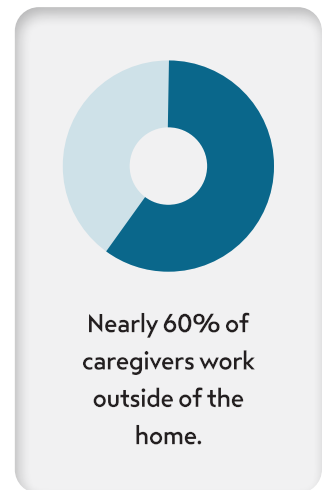
When you're caring for a loved one with heart disease, it's easy for your health to become secondary, but if you aren't healthy, it's more difficult to care for others. Make sure you see your own doctor regularly. Avoid skipping meals and eat healthy foods to keep your energy up and get the nutrition you need. Getting enough sleep and exercise are key to good health, and being outside in nature is good for your mind and body. Pay attention to your emotional state as well, and contact your physician or social worker if you're concerned about depression.

Give Yourself a Break

It may be hard to leave your loved one's side, particularly after surgery or a medical procedure, but you do really need to get a break — even for just a little while. Taking a break is one of the best things you can do for yourself as well as the person you're caring for. Whether you find home healthcare aides to come to your home and provide companionship, nursing services or both while you take a break, or ask friends and family for help, it's important to take time away. When you take a break, make it count by doing something that will help you truly relax — read a book, take a nap, go outside in nature — make sure it's something you enjoy.

Balancing Caregiving and Work

Nearly 60% of caregivers work outside of the home. If you work outside the home and are a caregiver, you may start feeling overwhelmed. Employees



covered under the federal Family and Medical Leave Act may be able to take up to 12 weeks of unpaid leave a year to care for relatives. Ask your human resources office about options for unpaid leave.

If that's not an option for you, you may need to consider other options, such as healthcare aides or other family members to help support your loved one while you work. Don't feel guilty if you need to do this; you're doing the best you can.

Connect With Others

Being a caregiver can lead to feelings of isolation and loneliness. Find support from family and friends, a Mended Hearts member or a local support group. Connecting with others who truly understand will help you in your journey.

Every family has its own way of handling a heart diagnosis and the recovery process and its own support system. For many, it helps to think positively and not assume or assign blame for anyone's heart condition.

You Can Make a Difference

Having a good caregiver can make a huge difference in the well-being and recovery of a heart patient. The work can be exhausting, and you may feel unappreciated at times, but know that you are making a difference.

QUESTIONS TO ASK HEALTHCARE PROFESSIONALS

Your loved one's health journey includes you, so take your own health into consideration and ask the following questions:

- What are the most important things I can do to support my loved one's recovery?
- What should I expect to happen in the weeks and months ahead?
- What appointments need to be scheduled?
- What resources might help me understand my loved one's condition and get help when I need it?
- I feel so isolated and that no one understands what I'm going through. Where do I turn?

Specific Types of Heart Disease



Adult Congenital Heart Disease



NEARLY ONE IN EVERY 110 babies, or 40,000 each year, are born with a congenital heart defect, or CHD. About 25% of them will need heart surgery or medical intervention to survive.

Today, 2 to 4 million Americans have one or more congenital heart defects, and more than half of them are adults. The good news is that nearly 85% of those born with CHDs will live to adulthood.

There are more than 35 commonly recognized types of congenital heart defects, and each has its own risk factors, treatments and/or surgeries. Some treatments and surgeries can repair the heart, but others are temporary solutions and further treatment, possibly including additional surgeries, are needed.

What is Adult Congenital Heart Disease?

A congenital heart defect (CHD) is a problem with the way the heart is formed before the child is born, so a CHD is a birth defect. In fact, CHDs are the most common type of birth defect in the U.S. CHD also stands for “congenital heart disease,” because it is a chronic, life-long condition and not only a birth defect.

Adult congenital heart disease (ACHD) is simply congenital heart disease present after the age of 18. Adults with ACHD face unique issues that should be

addressed by cardiologists and health-care providers that specialize in ACHD.

Living with Adult CHD (ACHD)

CHD is not the same as acquired heart disease (heart disease you are not born with), and medical professionals unfamiliar with CHD may not fully understand the differences and recommend care more appropriate for a patient with acquired heart disease. CHD specialists understand the CHD heart and comorbidities (a fancy word for other diseases and conditions) that can occur with CHD, such as liver disease, arrhythmias, renal disease, hypertension, etc. Adult patients with CHD are twice as likely to have comorbidities than those without CHD.¹ Cardiologists who specialize in CHD can provide care specifically tailored to patients with CHD.

The Adult Congenital Heart Association has a list of ACHD specialists and explains the ACHD guidelines put out by the American College of Cardiology and the American Heart Association. The guidelines were revised in 2018 and are available at <https://www.achaheart.org/media/2750/achdguidelines2020.pdf>.

Adult patients with CHD who are treated in ACHD programs have lower mortality rates and better outcomes than patients who get care at a center that does not specialize in adult CHD. ACHD patients often must learn to

¹ <https://www.ahajournals.org/doi/10.1161/JAHA.119.013450>

advocate for the care they need and actively seek care at a center with experience in treating adults with CHD.

ACHD patients should be aware of certain important issues so they can take steps to improve their quality of life:

- ACHD patients are at a higher risk for some forms of acquired heart disease, so it's important for them to talk to their ACHD specialist about reducing the risk of acquired heart disease. This may include specific exercise and nutrition plans.
- Mental and emotional well-being can be an issue for those with ACHD, so treatment for mental health may be beneficial for physical health as well as emotional health.
- Some ACHD patients have neurocognitive issues that affect the way they take in and process information.
- Exercise is essential to heart health, but ACHD patients need to work with their healthcare team to create an exercise plan that is right for them. ACHD patients may have activity restrictions, but for most ACHD patients, exercise is not only safe, but can improve mental and physical health.
- Endocarditis (inflammation of the lining of the heart, usually caused by bacteria) is a risk for CHD patients. It is important to talk to your doctor about how to minimize risk factors. CHD patients may need to take special precautions for routine and non-routine procedures – even simple ones like dental work or a teeth cleaning.
- Adults with CHD will need to talk to a medical professional specializing in CHD when it comes to family planning. They may have faced issues with puberty, and may face issues with

QUESTIONS TO ASK YOUR DOCTOR:

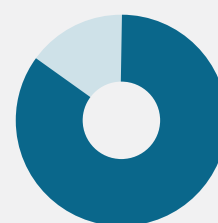
- What is the name of my congenital heart defect and would you explain it to me?
- What surgeries or medical procedures, if any, did I have as a child?
- What treatment, surgeries or procedures will I need in the future?
- What can I do to improve my heart health?
- What exercises can I do safely?
- What medications should I be taking and what are they for, specifically?
- What other issues might I face aside from my heart condition?
- What do I need to know about family planning?
- Do you specialize in adult congenital heart disease? Does this hospital/medical center?

birth control and pregnancy as well that should be addressed with a CHD specialist so they can create a plan that works for them.

- Certain lifestyle choices such as drinking alcohol, smoking, getting tattoos, and engaging in risky behaviors, such as illegal drug use or having many sex partners, may impact those who have CHD differently than those without. These issues should be addressed with a CHD specialist to help CHD patients stay healthy and avoid unnecessary health problems.

Treating ACHD

Because there are more than 35 types of congenital heart defects, there is no specific treatment or surgery that applies to ALL heart defects. To learn more about a specific CHD and its treatment, visit the Adult Congenital Heart Association website (www.achaheart.org), where you'll find excellent educational materials,



85% of those born with CHDs will live to adulthood.

webinars and resources. Also, www.pted.org has images of different heart defects and what occurs during surgical procedures to repair the heart.

Often adults with CHD are prescribed medications for treating CHD that can reduce the risk of other heart disease as well. Anti-coagulants (see Medications) are often prescribed for CHD patients to help avoid blood clots and stroke. Other medications help the heart pump more efficiently. Still others, also used for pulmonary hypertension, can decrease congestion in the veins as blood travels back to the heart.

CHD may affect the heart's rhythm, and some patients will need a pacemaker or an implantable cardioverter-defibrillator (ICD). Some treatments for CHD may be done during cardiac catheterization, such as coiling collateral vessels, valve repair and valve replacement. In severe forms of CHD, surgery may be required — sometimes multiple surgeries — and these surgeries may have to be revised as the patient ages. Sometimes an adult who has CHD will have to have surgery to correct, fix or improve the surgery he or she had during childhood.

Atrial Fibrillation (AFib)



ATRIAL FIBRILLATION (AFIB) IS a relatively common heart condition, and about 20% of Americans 70 and older live with AFib. With chronic AFib that lasts for a long time without interruption, clots can form in your heart, which increases the possibility of a stroke or heart attack. Fortunately, AFib is often treatable with medications. Catheter and surgical procedures are also options to treat and fix AFib. Understanding AFib and knowing its symptoms can help you get treatment and substantially reduce your risk of complications.

What Is Atrial Fibrillation?

Atrial fibrillation refers to an irregular heartbeat, or dysrhythmia. It can make your heartbeat feel quivery or fluttery and puts you at risk for several serious conditions including blood clots, stroke and heart attack.

When your heart has a normal, regular rhythm, it moves in a sequence of contractions to move the blood through your heart. First, the two upper chambers of your heart squeeze (the “lub”), then the lower two chambers squeeze (the “dub”). Together, this sequence sends blood efficiently to the rest of the body. However, if you have AFib, the atria beat rapidly and out of coordination, which means the blood moves less efficiently into the ventricles.

What Causes Atrial Fibrillation?

Some common causes of AFib include:

- **Age.** Age is the most common cause of AFib. While chronological aging is hard to fight, physiological aging is not. Good habits like regular exercise, not smoking, weight control and a healthy diet can make you “feel” younger and you’ll be less likely to have problems like AFib and high blood pressure.
- **Hypertension.** Hypertension, or high blood pressure, is associated with multiple problems because the increased pressure makes your heart work harder. Fortunately, it is easy to treat with regular exercise and medications.
- **Other Heart Conditions.** Other heart conditions like valve disease (mainly mitral valve disease) and coronary artery disease (CAD) can lead to AFib.
- **Heart Surgery.** Heart surgery is a common cause of AFib. It is usually transient (lasting less than several months) and is easy to prevent and treat with medications.
- **Heart Attack.** A heart attack is commonly associated with AFib but, as with heart surgery, it is typically transient and treatable.
- **Lung Disease.** Lung diseases like chronic obstructive pulmonary disease (COPD) and emphysema are associated with AFib.
- **Stimulants.** Big doses of stimulants (like coffee and medications typically

5x

The factor by which people with AFib are at higher risk of stroke

prescribed for asthma) can excite both your brain and your heart. Be aware that some over-the-counter and diet medicines do contain stimulants.

- **Drinking Alcohol.** If you enjoy an occasional drink, be sure to limit the number of drinks you have and discuss what is a safe amount with your doctor. Some evidence suggests a glass of red wine in the evening can actually benefit your health.
- **Overactive Thyroid.** Hyperthyroidism speeds up your metabolism, which can cause a rapid or irregular heart-beat, but treatment should focus on resolving the thyroid issue.
- **Obesity and Diabetes.** Both conditions are linked to hypertension and can cause other changes in your health that lead to AFib.

Diagnosing AFib

In most cases, your heart has a familiar, steady beat. But when it races instead, and this goes on for a few minutes, it could be AFib. AFib can also mimic a heart attack with symptoms including shortness of breath, dizziness, confusion, feeling faint, weak or tired, sweating and/or chest pain. In some cases, there might not be any symptoms at all. It can come and go, or it can be an ongoing condition.

An examination by your doctor can make and confirm the diagnosis. Examination may include:

- Electrocardiogram, or EKG, is a test to record your heart's electrical activity and is considered the gold standard
- Echocardiogram, a portable electrocardiographic monitor, such as a Holter monitor, mobile cardiac telemetry device or other portable ECG machine, worn to record heart activity and identify irregularities in

STAY IN CONTROL: AFIB, DIET, AND LIFESTYLE

If you have AFib, eating a low-salt, heart-healthy diet, staying active and quitting smoking are important.

Your doctor can give you information on eating right and exercising safely. You may also need to reduce or eliminate alcohol and caffeine, as both can trigger AFib episodes.

Also be careful in choosing over-the-counter (OTC) medications: Some contain stimulants that can trigger episodes or interact with anti-arrhythmic medications.

cardiac rhythm

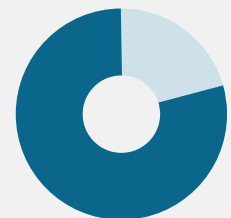
- Chest X-rays to help determine if there are other complications
- Cardiac CT or MRI imaging tests to take pictures inside the heart
- Blood tests to check for possible causes such as thyroid or kidney problems, infection or signs of a heart attack
- Fitness trackers equipped with sensors to detect AFib

Treating AFib

Once you have been diagnosed with AFib, your doctor will determine the best way to manage it, as well as managing risk factors for stroke.

Cardioversion is a medical procedure used to restore the heart's normal rhythm. There are two types of cardioversion:

- **Chemical cardioversion** delivers anti-arrhythmic medication, typically orally or through an IV, to restore your heart's normal rhythm. It is often used in non-emergency cases.
- **Electrical cardioversion** requires sedation while the doctor uses paddles to send an electrical charge to your



Up to an estimated 20% of strokes in the U.S. are Afib-related.

heart. This works, but it doesn't always keep you in a regular rhythm. After cardioversion, you will likely be placed on medications to prevent future AFib. If cardioversion is not successful in keeping your heart in a normal rhythm, you may be prescribed medications. A whole group of medications are effective in keeping you in a regular rhythm.

If you ultimately "break through" and go back to AFib, the next option is catheter ablation, a minimally invasive procedure in which the doctor puts a thin tube into a blood vessel in your leg or neck that sends out electrical signals to destroy the cells or pathways causing the arrhythmia. If the catheter ablation and other methods of getting your heart back into normal rhythm don't work for you, you may need to have a surgical ablation, which is similar to a catheter ablation but done as a surgical procedure. During the surgical procedure, a pacemaker is often put in, which is a small device that helps your heart stay in a normal rhythm.

Blood clots are one of the biggest complications that can accompany AFib. Because of the risks involved, doctors often prescribe blood-thinning medications called anticoagulants to people who are undergoing procedures for AFib. Until the introduction of warfarin/coumadin, long-term anticoagulation required patients to have frequent blood tests to make sure their blood was "thin" enough so it was less likely to clot.



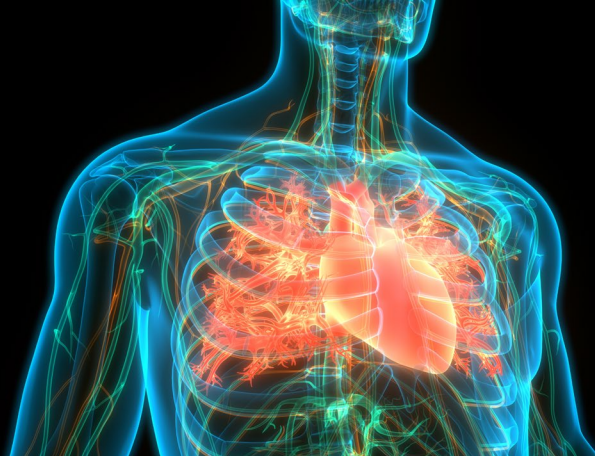
More recently (with the advent of Xa inhibitors), patients just need to take a pill daily and blood test monitoring is not necessary.

Living with AFib

A healthy lifestyle plays a key role in preventing atrial fibrillation. Some ways to reduce your risk of heart disease and AFib incidents include:

- Follow a heart-healthy diet
- Become more physically active
- Avoid smoking and/or vaping
- Limit your consumption of caffeine and alcohol
- Look for ways to reduce and manage stress
-
- Many, many patients live happy and full lives with AFib.

High Cholesterol



THREE-FOURTHS OF THE CHOLESTEROL in our bodies is made/synthesized within our livers. We need and use cholesterol for digestion, making hormones and as important parts of the thin outer layer that wraps all our cells. Like most things, too much and too little are bad. If your cholesterol is too high, there are effective lifestyle changes and medicines to bring it back under control.

When it comes to cholesterol, it's all about the numbers. Some numbers you should know are:

- One in three people has high cholesterol
- Only one in three people with high cholesterol has it under control
- The risk of heart disease is two times as high for those who don't have it under control

The good news is, once you know you have high cholesterol, you can work with your doctor to manage and treat it so that you are back on the path to a healthy heart.

What is Cholesterol?

Cholesterol is a waxy substance found in our cells. Our liver naturally makes most of the cholesterol we need to perform important tasks like digesting fatty foods and making hormones. In fact, cholesterol is an important building block in the thin outer layer that wraps around all the cells in our body.

Animals also make cholesterol; it's

called dietary cholesterol. Meat, seafood, poultry, eggs and dairy products all contain cholesterol, as well as saturated and trans fats. These fats cause your liver to make more cholesterol than it normally would, and can increase your cholesterol to an unhealthy level. Dietary cholesterol is also found in tropical oils like palm oil, palm kernel oil and coconut oil.

Types of Cholesterol

Cholesterol travels through the blood on proteins called "lipoproteins." Two types of lipoproteins carry cholesterol throughout the body. We categorize these fatty-proteins relative to their density, or thickness, so high-density lipoprotein is HDL and low-density lipoprotein is LDL.

LDL (low-density lipoprotein) cholesterol makes up most of your body's cholesterol. High levels of LDL cholesterol raise your risk for heart disease and stroke, so LDL is sometimes called "bad" cholesterol. When your body has too much LDL cholesterol, it can build up on the walls of your blood vessels. This buildup is called "plaque." As more and more plaque builds up, the inside of the blood vessels can narrow and even become blocked. This can cause chest pain (called angina) or a heart attack.

HDL (high-density lipoprotein), or "good" cholesterol, absorbs cholesterol and carries it back to the liver. The liver then flushes it from the body as bile that helps you digest the fats that you eat.



One in three people has high cholesterol.

High levels of HDL cholesterol can lower your risk for heart disease and stroke.

Triglycerides are another important piece to the cholesterol puzzle. They are the most common type of fat in your body, and they, along with LDL cholesterol, can build up within your artery walls and cause plaque and blockages.

Know Your Numbers

It is important to know your cholesterol numbers because high cholesterol has no symptoms, but it can lead to heart disease and stroke. A blood test, called a lipid profile, will help you and your doctor understand what your cholesterol numbers are.

The “lipid profile” measured from your blood sample will give you these cholesterol numbers:

- Total Cholesterol — Your total cholesterol should be under 200.
- LDL — This is the bad cholesterol. It should be less than 100 for most people and less than 70 for anyone with a history of heart disease or diabetes.
- HDL — This is the good cholesterol and the higher the number is, the lower your risk.
- Triglycerides — Less than 150 means your triglycerides are in a normal range. The risk increases as this number increases; anything over 500 is considered very high.

You should know that numbers alone cannot determine your risk of a heart event. The American Heart Association and the American College of Cardiology release guidelines for treating high cholesterol, depending on a lot of factors. [\(link to guidelines\)](#) Your doctor will determine the best treatment for you based on your heart history and other factors such as age.

WHAT IS FH?

Familial hypercholesterolemia (FH) is a genetic disorder in which LDL cholesterol is in the blood in high levels from birth. Fortunately, FH is rare. If you have it, you may already know because your parents, grandparents and aunts/uncles will have had heart problems even at a young age.

The severity, or seriousness, of FH depends on a person’s genetic profile. If a person with FH inherited one faulty gene from a parent, that person’s LDL cholesterol level can be two to three times higher than normal. But if a person inherits two faulty genes (one from each parent), it can be worse, with LDL levels that are three to six times higher than normal. Talk to your doctor to see if you should be tested for FH. Learn more at www.thefhfoundation.org.

Preventing High Cholesterol

- Limit foods high in saturated fats like meat, chicken, seafood, eggs, dairy and tropical oils.
- Eat foods low in saturated and trans fats like lean meats and seafood, fat-free or low-fat dairy products and fruits and vegetables.
- Eat foods packed with natural fiber, like beans and oatmeal, or foods with unsaturated fats like avocado, olive oil and nuts to help prevent high levels of LDL cholesterol and increase levels of HDL cholesterol.
- Maintain a healthy weight. Being overweight or obese raises your levels of LDL cholesterol and slows down your body’s ability to remove LDL cholesterol from your blood.



The Impact of Genetics on Cholesterol

If you have a family history of high LDL cholesterol and cardiovascular disease, you may have a greater chance of developing both conditions. They are caused by an inherited condition called heterozygous familial hypercholesterolemia (HeFH) that prevents the liver from removing bad cholesterol from the body. There are preventive measures that you and your doctor can take to prevent problems. First measure your blood lipid profile and then talk it over with your doctor.

Treating High Cholesterol

For most people, eating healthy and working on a regular exercise program are enough to sustain a healthy lipid profile, but in some cases that's not enough to lower cholesterol levels. When medication is needed, patients should work with their doctor to find a treatment plan that is right for them.

Most patients with high cholesterol are successfully treated with statins, which prevent the production of cholesterol in the liver and lower LDL cholesterol. If you take statins but are having side effects — or if they're not lowering your LDL levels to where they need to be — your doctor may try prescribing other medications, such as:

- Bile acid binders or resins that cause the intestine to get rid of more cholesterol
- Ezetimibe (EZE) that prevents cholesterol from being absorbed in the intestine
- Bempedoic acid and BA/EZE tablets that work together to reduce LDL
- PCSK9 Inhibitors (Proprotein convertase subtilisin/kexin type 9) that prevent the liver's LDL receptors, which remove cholesterol from the bloodstream, from being destroyed

BE INVOLVED: QUESTIONS FOR YOUR HEALTH CARE TEAM ABOUT LIFESTYLE AND RISKS

- How often do I need to have my cholesterol checked?
- What steps can I take to reduce my cholesterol level?
- Do I need to take medicine? What are the risks of medication?
- How can I have a heart-healthy diet?
- How do I read food labels?
- What role does salt play in a heart-healthy diet?
- What other ways can I flavor my food?
- Where can I find more information about heart-healthy eating?
- What sort of exercise should I do to improve my cholesterol levels?
- How often and how much should I exercise?

PCSK9 Inhibitors are given through self-injection and are more expensive than statins. Doctors choose PCSK9s based on several factors such as baseline LDL-C, risk of cardiovascular disease and other factors. Some people are candidates for PCSK9 Inhibitors because they are not able to reduce their cholesterol enough with statins and EZE.

If you have a family history of high levels of LDL cholesterol (familial hypercholesterolemia, or FH), are at risk for a heart attack or stroke and statins aren't working, or if you are having side effects because of your statin medication, it might be time to talk to your doctor about PCSK9 Inhibitors.

Icosapent Ethyl is an innovative medication that can treat high triglycerides. Managing triglycerides is an important part of your cholesterol management. If you're not successfully managing your triglycerides, you may want to talk to your doctor about this option.

Diabetes and Heart Disease



THE CENTERS FOR DISEASE CONTROL (CDC) estimates that more than 29 million Americans have diabetes, or about one of every 11 people. About 8 million of them don't know they have diabetes. Another 86 million — more than one in three Americans over the age of 20 — have prediabetes, a condition in which a person's blood sugar is high, but not yet high enough to trigger diabetes. Diabetes can affect many other organs, so it's important to manage your glucose levels properly to make sure you're protecting your heart.

What is Diabetes and How Does It Impact the Heart?

Diabetes is a chronic disease in which your body does not properly turn food into energy for your body to use. Having diabetes raises your risk for developing other dangerous conditions, especially heart disease and stroke. When people have diabetes, their body can't make enough of a hormone called insulin or can't effectively use the insulin it has. Insulin helps your body digest sugars that come from what you eat and drink. Without enough insulin, sugar builds up in your blood and over time, that sugar buildup damages your nerves, blood vessels, heart and kidneys.

Type 1 Diabetes is when the body's immune system attacks the insulin-producing cells from the pancreas and therefore the body does not produce

insulin. No one knows exactly what causes it, but it may be a combination of environmental factors and genes. It is usually diagnosed in childhood.

Type 2 Diabetes is the most common form of diabetes. With Type 2 diabetes your body does not use insulin properly. Some patients can manage their blood sugar through diet and exercise, but others need medications to help. Your doctor can tell you what treatment plan is best for you.

Tests and Diagnosis

To see if someone has diabetes, a fasting plasma glucose test (FPG) is done after eight hours of not eating. A number between 100 and 125 means you have prediabetes; a number over 125 means you have diabetes.

An oral glucose tolerance test (OGTT) is a blood test done two hours after you drink something that has a certain amount of glucose in it. This test compares the glucose in your plasma before and after the test to see how your body handles glucose.

A1C – A1C index is a test to determine

29m

The CDC estimates 29 million Americans have diabetes.

86m

86 million Americans over the age of 20 have pre-diabetes.

TIPS FROM PATIENTS

“Take your blood sugar at home and record the levels each time. That way you can discuss with your doctor when you visit.”

the amount of glucose (sugar) in your blood. This simple blood test can give your doctor information on how well the treatment is working over time. There is a range of A1C levels, and that number can tell your doctor a lot about how to manage your diabetes.

A normal A1C level is below 5.7%, a level of 5.7% to 6.4% indicates prediabetes, and a level of 6.5% or more indicates diabetes. Within the 5.7% to 6.4% prediabetes range, the higher your A1C, the greater your risk is for developing Type 2 diabetes.

Signs and Symptoms

People with prediabetes and diabetes sometimes have no symptoms, but some of the most common symptoms are:

- Increased thirst
- Increased fatigue
- Increased appetite
- Increased urination
- Weight loss
- Blurred vision

Diabetes increases your risk of heart disease, especially as risk factors for diabetes such as high blood pressure, high cholesterol and obesity are also risk factors for heart disease. If you have prediabetes or diabetes, have your heart checked regularly and know your numbers (blood pressure and cholesterol). You will also want to carefully follow the guidelines in the Risk Reduction section of this HeartGuide. Reducing your risk of heart disease can also reduce your risk of diabetes. The longer your diabetes is not controlled, the more your heart is at risk.

Research shows that people with Type 2 diabetes are twice as likely to develop heart failure. They are more likely to be

hospitalized and have worse long-term outcomes. Managing your diabetes and glucose levels is an important part of taking care of your heart. Heart failure is a disease that continues getting worse over time, and there is no cure. (Learn more in the Heart Failure section of this guide.)

Type 2 diabetes can also damage your kidneys. This is another example of how the organs work together and why managing blood sugar levels is so important. If kidney damage occurs, that can affect your blood pressure and then affect your heart.

Treating Diabetes and Heart Disease

People who are prediabetic or diabetic should work with their doctor to find a plan that is right for them. Most people with diabetes will need to make lifestyle changes such as eating healthy foods, avoiding refined sugar, exercising and losing weight. These actions also reduce cardiovascular risk. Some people with diabetes require medication to manage glucose levels and diabetes patients may also need medication for high cholesterol and/or high blood pressure.

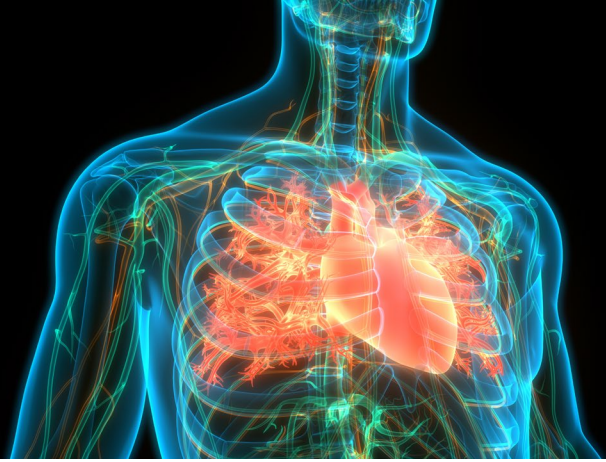
Diabetes patients can often monitor their blood sugar at home with home monitoring devices. Talk to your doctor so you understand your blood sugar numbers and what actions to take. In addition, A1C is typically monitored by your doctor to look at your blood sugar numbers over the last two to three months.

Take care of your blood sugar level now to keep your heart healthy. Talk to your doctor about how to best manage your diabetes.

YOUR A1C



Heart Attack



FEW MEDICAL EMERGENCIES CAUSE fear the way a heart attack can. About 805,000 people have heart attacks every year in the U.S., with more than 75% of them being a first heart attack. Heart attacks can occur suddenly and sometimes happen to people who are not even aware that they are at risk of having one. If you recognize the signs of a heart attack and seek treatment immediately, you are more likely to recover and go on to lead a healthy life.

What Is a Heart Attack?

A heart attack, or myocardial infarction (MI), happens when the coronary artery, a blood vessel that leads to the heart muscle, is blocked and blood can't get through. The heart needs a continuous supply of oxygen and nutrients to function, and the heart muscle will be damaged without it. Coronary arteries become blocked when cholesterol and fatty deposits (called plaque) build up on the inner walls of the arteries. If the plaque breaks open, blood clots can form around it, completely blocking the artery and possibly causing a heart attack. The longer an artery stays blocked, the more damage is done to the heart muscle and the result can be permanent.

Types of Heart Attacks

There are three types of heart attacks:

- **STEMI:** When people think of a heart

attack, they often think of a STEMI, or ST segment elevation myocardial infarction. This occurs when a coronary artery becomes entirely blocked. When this happens, a large part of the heart muscle stops getting blood to it and the muscle may die. Doctors can see this change to the heart muscle when they do an electrocardiogram (ECG) and locate exactly where the heart wall has been damaged.

- **NSTEMI:** A second type of heart attack is an NSTEMI, or Non-ST segment elevation myocardial infarction. Unlike in a STEMI, the affected coronary artery is only partially blocked. Only part of



the heart wall thickness is damaged, and it cannot be seen on an ECG.

- **CAS:** The third type of heart attack is a CAS, or a coronary artery spasm. This silent heart attack happens when the artery tightens so much that the blood flow is reduced or stops. While there is no permanent damage with silent heart attacks, they do increase your risk of having another, more serious heart attack. Sometimes a silent heart attack may be mistaken for muscle pain or indigestion.

What Are the Signs and Symptoms of a Heart Attack?

Signs and symptoms of a heart attack vary; not every heart attack comes on quickly with intense pain like we see in movies or on television. Most heart attacks begin with just a little pain and discomfort, and the person might not even realize what's happening. In fact, one out of five people who experience a heart attack don't even know they've had one. This is a problem because the person is not aware of the heart attack to know to get medical help, and they are at greater risk for a second, and possibly more harmful one.

What are the Risk Factors for a Heart Attack?

Many factors contribute to your risk of having a heart attack. Some are within your control, while others have more to do with your age and background.

Risk Factors You May Be Able to Control:

- Smoking
- High blood pressure (hypertension)
- High cholesterol and triglyceride levels
- Unhealthy weight
- Diabetes, uncontrolled blood sugar

HEART ATTACK SYMPTOMS

If you have any of the following signs and symptoms, you should seek medical treatment as soon as possible.

- Uncomfortable pressure (typically described as “squeezing chest pain), fullness or pain in the center of your chest that lasts more than a few minutes or goes away and comes back.
- Pain or discomfort in one or both arms, back, neck, jaw or stomach.
- Shortness of breath while you are resting (with or without chest discomfort).
- Other signs such as breaking out in a cold sweat, nausea, fatigue or lightheadedness.

- Metabolic syndrome (a combination of unhealthy weight, high blood pressure and high blood sugar)
- Not enough exercise
- Stress
- Recreational drug use (drugs such as cocaine or amphetamines can trigger a spasm of your coronary arteries that can cause a heart attack)

Risk Factors You Cannot Control:

- Age – The older you are, the higher your risk of a heart attack.
- Family history – If you have a close relative who had heart disease at an early age, you are at an increased risk.
- Medical history – Autoimmune conditions such as rheumatoid arthritis or lupus can increase your risk of heart attack. Women who have had pre-eclampsia during pregnancy also have an increased risk.
- Indigenous heritage – First Nations, Metis and Inuit peoples have a higher risk of heart disease and stroke than the general population because they're more likely to have high blood

- pressure and diabetes.
- South Asian and African heritage
– People of African or South Asian heritage are more likely to have high blood pressure and diabetes or other risk factors at a younger age and may need to monitor and control blood pressure and blood sugar to reduce risks.
 - Personal circumstances and environmental factors – Access to healthy food, safe drinking water, health services and social services all have an influence on your heart and your health.

Reducing Your Risk

Even if you have risk factors that are out of your control, there are things you can do to help prevent a heart attack. Get some exercise, beginning slowly with 20 minutes of exercise you enjoy such as walking, swimming or bicycle riding. Exercise three times each week and gradually increase how hard you are exercising. Keep it fun and you'll be more likely to stay with it!

Switch to a healthy diet that's low in saturated fat, trans fat and sodium. Also, see your doctor for regular check-ups and take medications as directed. (For a full list of ways to help stay heart-healthy, please see [page 68](#).)

Treating Heart Attack Patients

Heart attacks are treated in different ways, depending on the cause and severity. Again, a heart attack is typically caused by a blockage or partial blockage of the coronary artery. Sometimes angioplasty is used where the blocked artery is opened up or the plaque is removed. People who have angioplasty may get a stent, which is a device that looks like a mesh tube and keeps the artery open.

“Even though I was really busy, grabbing food on the go and not taking care of myself, I ignored some symptoms I should have paid attention to. I was still shocked when I had a heart attack, but it got me to make a lot of positive changes, so I am grateful that I get a second chance.” – Roger

Heart bypass surgery, or a coronary artery bypass graft surgery (CABG), may be done if the blockage can't be removed. CABG is the most common type of heart surgery and is where a healthy artery or vein is grafted, or attached, to the blocked coronary artery so the blood can bypass the blockage. People who have had a heart attack might also need surgery to repair heart valves that aren't working properly or are leaking. Also, sometimes a pacemaker will need to be implanted to help the heart stay in normal rhythm.

Those who have experienced a heart attack are also typically prescribed medications like aspirin, blood thinners and/or other medications to break up blood clots. These medications help lower the risk of another heart attack and stroke. In fact, people who have had heart attacks may be on aspirin the rest of their lives to prevent blood clots from forming.

Heart attack patients may also be given painkillers, nitroglycerin, beta blockers and blood pressure medication.

If you have had a heart attack, take precautions to prevent another one. Some people feel like their life is over after a heart attack, and although you may have to make changes, many people who have had heart attacks go on to lead healthy, enjoyable lives.

Heart Failure



ABOUT 6.2 MILLION ADULTS IN the United States have heart failure. A diagnosis of “heart failure” can be scary for patients and their loved ones. When most people learn that they have heart failure, they’re afraid that their heart is going to suddenly quit working because it has failed. A heart failure diagnosis means that the heart is not pumping well, but if treated, many patients live enjoyable lives.

What Is Heart Failure?

Heart failure occurs when the heart muscle either weakens and its ability to pump is reduced, or when the heart muscle stiffens and cannot relax enough to fill with blood — or both. In either case, the heart can’t get enough blood to the body.

Types of Heart Failure

Heart failure can be right-sided heart failure, left-sided heart failure or, more commonly, occur on both sides.

Left-Sided Heart Failure

In most people, the left ventricle of the heart pumps blood to the body. In left-sided heart failure, the left side of the heart must work harder to get blood to the body. There are two types of left-sided heart failure: heart failure with reduced ejection fraction (HFrEF) or heart failure with preserved ejection fraction (HFpEF). Patients are divided

equally between the two types, with 50% having HFrEF and 50% having HFpEF.

HFrEF: Heart failure with reduced ejection fraction is when the heart muscle has gotten weak and cannot pump enough blood to the body. In this type of heart failure, the ejection fraction is lower than normal, often under 40%.

HFpEF: Heart failure with preserved ejection fraction is when the heart muscle has become stiff and cannot relax enough to fully fill the ventricle. In this type of heart failure, the ejection fraction may still be in the normal range, or above 50%.

Right-Sided Heart Failure

Right-sided heart failure is usually caused by left-sided heart failure because the blood becomes congested in the lungs and backs up into the right side of the heart, causing it to also lose its ability to pump properly. Right-sided heart failure often includes swelling in the legs and feet, and sometimes the abdomen from fluid backing up in the veins.

Congestive Heart Failure

Congestive heart failure is a serious form of heart failure that happens when fluid backs up in the veins, causing congestion in the body. This can cause fluid in the lungs that can affect breathing, and fluid can build up in other parts of the body too. People with symptoms

EJECTION FRACTION

Ejection fraction is the percentage of blood that is pumped out with each heartbeat. The heart never empties all the blood from the lower chambers (ventricles), so a normal ejection fraction at rest is between 55% and 70%. People can often improve their ejection fraction with a healthy diet, exercise and, if needed, medical treatment.

of congestive heart failure should get medical attention right away.

What Causes Heart Failure?

Heart failure has many causes. The most common are:

- Coronary artery disease
- Cardiomyopathy
- Heart attack
- High blood pressure
- Damage to the heart valve
- Heart muscle disease or inflammation
- Congenital heart defects
- Irregular heartbeat
- Severe lung disease
- Diabetes
- Other diseases

Symptoms of Heart Failure

Some people with heart failure do not have any symptoms. Some of the more common symptoms of heart failure are:

- Shortness of breath, especially with exercise or when lying down
- Swelling in your legs, ankles and feet
- Feeling very tired or weak
- A cough that will not go away
- Being unable to exercise or do normal activities like walking up stairs
- Increased heart rate
- Lack of appetite or nausea

Diagnosing Heart Failure

Patients with symptoms of heart failure should be seen by a doctor. The doctor will do a physical exam and is also likely to order an echocardiogram (see [page 25](#) for more information on echocardiograms) to see what the heart's ejection fraction is.

Heart failure is measured in stages from A to D and with a functional classification system from Class I (mild) to Class 4 (severe). Patients can move up and down in their functional class, depending on their symptoms. Stages refer to structural changes in the heart and progress from stage A, high risk of developing heart failure, to stage D, advanced heart failure.

STAGES OF HEART FAILURE

Physicians often determine the stage of heart failure to determine the best treatment for patients with heart failure. Here are the stages of heart failure (HF) from the American College of Cardiology/American Heart Association classification system.

Stage A

Presence of heart failure risk factors but no heart disease and no symptoms

Stage B

Heart disease is present but there are no symptoms (structural changes in heart before symptoms occur)

Stage C

Structural heart disease is present *and* symptoms have occurred

Stage D

Advanced heart failure

Source: havhrt.com

Treating Heart Failure

While there is currently no cure for heart failure, many patients can be treated with medication, devices, exercise, fluid restrictions and and by eating a healthy diet, often with reduced sodium. Heart failure patients should avoid alcohol and high sodium and fatty foods.

Ace inhibitors, ARBs and diuretics are three classes of medications commonly used to treat heart failure. (See [page 75](#) for more on medications.) It's important to take all medications as prescribed to prevent your heart failure from getting worse.

In some cases, heart failure may progress and require medical intervention. If the heart rhythm is disrupted, a pacemaker may be implanted to help both sides of the heart contract at the same time. In some cases, the heartbeat becomes very rapid, and an implantable cardioverter defibrillator (ICD) may be implanted to prevent cardiac arrest. Sometimes the heart becomes too weak to pump and a left ventricular assist device (LVAD) will be implanted. This is a mechanical pump that can be used while waiting on a heart transplant or for destination therapy, where the patient will live with the pump for the rest of their life.

Living With Heart Failure

Living longer is important, but so is a person's quality of life. By making lifestyle adjustments and following treatment plans, many heart failure patients go on to lead happy, healthy lives. Here are some suggestions from heart failure patients:

Exercise

Exercise is the main thing heart failure patients said improved their lives. One

CLASSES OF HEART FAILURE

One thing physicians look at when deciding the best treatment options for heart failure is the functional status of the patient (Class of Heart Failure). Here is the New York Heart Association functional classification system.



Class I

No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation or dyspnea (shortness of breath).



Class II

Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in fatigue, palpitation or dyspnea.



Class III

Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes fatigue, palpitation or dyspnea.



Class IV

Unable to carry out any physical activity without discomfort. Symptoms of cardiac insufficiency at rest. If any physical activity is undertaken, discomfort is increased.

Source: havhrt.com

atient said it made a huge difference, even when she felt like it was impossible. Patients said walking outside, specifically, helped them feel more positive. Exercise at least three times per week, if possible.

Get Out

As one heart failure patient said, "Don't

stay home! Go to church. Go get the mail. Join a support group. Go bowling or golfing. Walk. Walk. Walk. Volunteer.” The message is clear: Do what appeals most to you but get out of your house if you’re able. Connecting with others is helpful in recovery. Mended Hearts volunteers say they feel as though they benefit more from the support they offer than the people they support.

Eat Better

Healthy eating is good for all of us, but particularly for heart failure patients. Read food labels and try to reduce sodium to 2000mg per day. Eat more fruits, vegetables and lean proteins. Avoid processed foods and canned foods, if you can; they usually have lots of salt in them.

Fluid restrictions are also common for heart failure patients. If your physician asks you to restrict your fluid intake, or drink less, find ways to restrict fluid but still enjoy what you’re eating. One example is freezing grapes and chewing on them throughout the day or brushing your teeth several times a day to keep your mouth moist. Since alcohol consumption can worsen heart failure, limit or eliminate alcoholic drinks.

Educate Yourself

Heart failure patients said they felt more confident and better able to manage their disease when they learned more about heart failure from reliable sources. They often even learned about new treatments and ideas that might help them feel better. When they had to make decisions, patients who educated themselves felt like they knew their choices and were able to make better decisions for them and their families.

AM I EXPERIENCING HEART FAILURE?

Fluid buildup in your body from heart failure commonly causes the following symptoms:

- Shortness of breath during activity, at rest or while sleeping
- Constant tiredness (fatigue) and difficulty doing routine tasks
- Buildup of excess fluid in the body tissues (also known as edema), such as swelling in the feet, ankles, legs, abdomen and veins in the neck; unexplained weight gain; and frequent urination

Fluid buildup may also result in coughing or wheezing that is dry or that produces a white or pink blood-tinged phlegm. This is typically worse at night and when you’re lying down. This may also be a sign of acute pulmonary edema, or fluid buildup in the lungs, which requires emergency treatment.

Take Your Medicine

Most heart failure patients are prescribed medication — sometimes more than one. Heart failure patients tell us that it is *very* important to take your medication exactly as you were told. If you have *any* questions, call your doctor. Heart failure patients can stay healthy longer if they take their medicine. (For more on medications, see [page 75](#).) Your pharmacist can also answer questions about your medications.

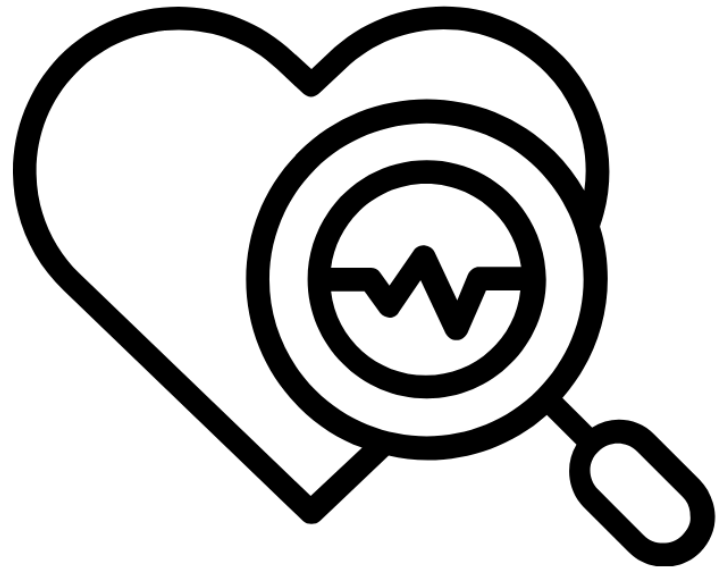
Monitoring Heart Failure

Most of the complications and hospitalizations from heart failure are because of fluid build-up in the lungs and body, so it’s important to monitor heart failure. Your cardiologist can monitor heart failure by listening to your heart and lungs, blood tests, chest X-rays, EKGs,

echocardiograms and other tests. You might also be asked to monitor your weight at home to watch for sudden increases that could mean there is fluid buildup. If there's a big change in your weight, you might be asked to make changes to your diet and/or medications. Some patients are also asked to monitor blood pressure, fluid intake and breathing.

Today, there are some newer devices that monitor heart failure. Some implantable devices are sensors that are placed in the heart during cardiac catheterization to monitor how your heart pumps, heart pressure and fluid levels. One FDA-approved implantable device has been proven to keep heart failure patients out of the hospital by alerting patients when adjustments in medications, fluid intake and sodium intake are needed — before it gets serious.

If you're living with heart failure, ask your doctor about in-home monitoring technology that can help you monitor heart failure and keep you out of the hospital. This can help you track your progress and know when to get medical care.



Heart Transplant



ACCORDING TO THE UNITED Network for Organ Sharing (UNOS), in 2019, the total number of all types of transplants increased 8.7% from the previous year and heart transplants increased by 4.2%.² Organ donation reached an all-time high in 2019 as well, and success rates for heart transplants continue improving, even for older patients. In fact, according to the National Heart, Lung, and Blood Institute, between 85 and 90% of heart transplant patients are still living one year after surgery.

What is a Heart Transplant?

A heart transplant is a surgery to replace a severely damaged or weakened heart with a heart from a deceased donor. Most patients who need a heart transplant are in end-stage heart failure and usually they have tried other treatments that aren't working. In rare cases, a lung transplant and heart transplant are done at the same time.³

Although it's hard to think about for most heart patients and their loved ones, sometimes when an individual's heart is failing the only option is a heart transplant. Heart transplants are typically the last resort, and not everyone is eligible for one, and some may choose not to have one. The idea of having a

² <https://unos.org/data/transplant-trends/>

³ <https://www.nhlbi.nih.gov/health-topics/heart-transplant>

transplant can be frightening, and the process leading up to the transplant itself can be difficult, but the more you know, the better prepared you'll be.

COMMON REASONS FOR A HEART TRANSPLANT

The most common reasons a heart transplant is needed are:

- Coronary artery disease
- Cardiomyopathy
- Congenital heart disease
- Heart valve disease
- Failure of transplanted heart/rejection
- Other heart diseases
- Cancer

Screening Process

Once your medical team decides that you may be a candidate for a heart transplant, you'll go through a screening process. A transplant team will evaluate you to ensure that you're physically and emotionally able to receive a new heart.

Factors that your medical team will review to decide if heart transplant is right for you include:

- Severity of your heart disease
- Medical options to manage your heart disease
- Other diseases that may affect the outcome of transplant or increase the

risks of surgery such as:

- Vascular disease
- Hepatitis
- Lung disease
- Cancer
- Kidney failure
- Diabetes
- Age
- Height and weight, which can affect the waiting period and likelihood of receiving a transplant
- Ability to stick to the treatment plan before and after transplant

Getting a Heart Transplant

If you qualify for a transplant, you'll be placed on a heart transplant waiting list. Your medical information is used to determine your priority status on the waiting list. Status 1 and 2 are patients who urgently need a transplant, with Status 1a being the most urgent.

Some people will get a heart quickly, but it can take months or years depending on how difficult it is to find the right match for you. Factors used for matching include blood type, height and weight and geographic area.

Once a heart is matched to you, the transplant happens quickly. The transplant center will likely require you to stay close to the hospital while on the waiting list, as there is a small window of time from when the heart becomes available to when you need to have the surgery.

BECOME AN ORGAN DONOR

- Indicate your donor status on your driver's license.
- Sign and carry a donor card.
- Register as an organ donor.
- Talk to your family about donating your organs.
- Tell your physician about your choice to donate organs.
- Make an organ donation a part of your advance directives, will and living will.

Source: defensivedriving.org

Most patients are hospitalized an average of two weeks after a heart transplant and it takes six to eight weeks for your incision to heal.

Life After Heart Transplant

It's important to take good care of your new heart. You'll have to manage anti-rejection medications for the rest of your life. These medications lower your immune system, so you'll need to be extra careful to keep yourself healthy.

You also need to stay in the care of your transplant team. This means going to appointments, taking your medications and following all the treatment plans your team gives you. You'll also need to avoid high sodium foods.

Heart transplants are lifesaving and lifegiving. Donors give years of life to heart recipients and their families.

Heart Valve Disease



NORMAL HEARTS HAVE FOUR valves — two that allow blood to go from the atria (top chambers in the heart) to the ventricles (bottom chambers in the heart), and two that allow blood to go out of the heart to the lungs or the body. Valves open and shut to allow the right amount of blood to flow through the heart and body in the right direction. Heart valve disease occurs when one or more of these valves isn't working properly.

Three things that may happen when someone has valve disease are:

- **Regurgitation:** This happens when the valve doesn't close tightly and blood leaks back in the wrong direction.
- **Stenosis:** This happens when the valve gets too thick or stiff or it fuses together, causing the opening to narrow and prevent enough blood from getting through.
- **Atresia:** This is when there is no opening at all for blood to go through.

Types of Valve Disease

There are four types of valve disease:-

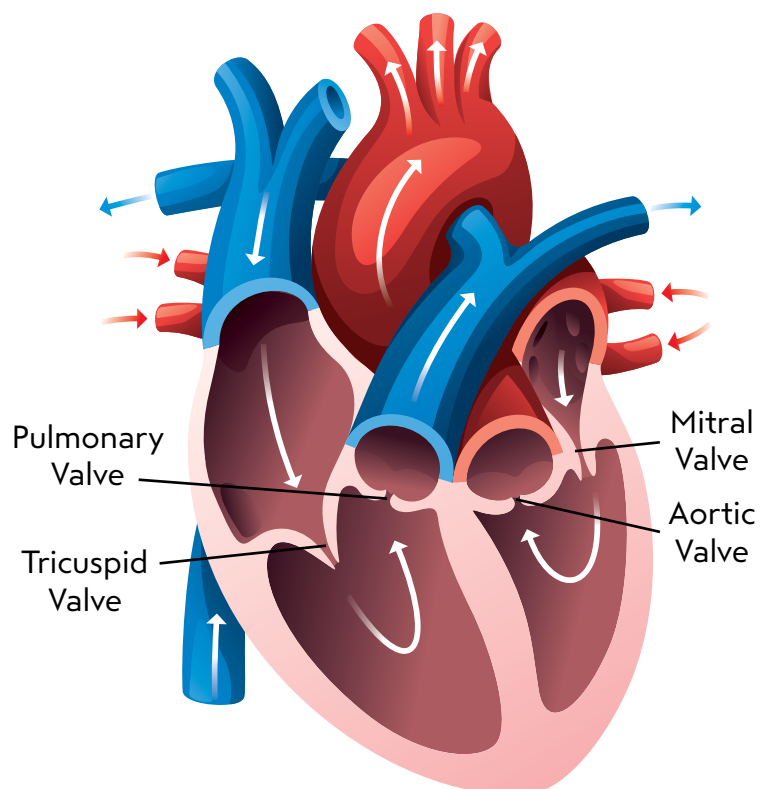
Aortic Valve Disease

When the aortic valve — the valve that allows blood to flow from the left ventricle in the heart out to the body — is leaky or narrowed, a patient has aortic valve disease. This can happen naturally as a person ages. When the aortic valve

is leaky or narrowed, your heart must work harder to get oxygen-rich blood to your body.

Pulmonary Valve Disease

Like the aortic valve, the pulmonary valve — the valve that allows blood to flow from the heart to the lungs — can become leaky or narrowed. In severe cases, the valve may become completely closed, which is called pulmonary atresia. The most common causes of problems with the pulmonary valve are congenital heart defects such as pulmonary stenosis, pulmonary atresia



and Tetralogy of Fallot, or pulmonary hypertension.

Mitral Valve Disease

The mitral valve is the valve between the top chamber (atrium) and the bottom chamber (ventricle) on the left side of your heart. When something is wrong with the mitral valve, blood can get pushed back into the atrium, and there won't be enough oxygenated blood in the left ventricle to go to the body. If mitral valve disease is untreated, it can result in heart failure or arrhythmias (problems with the heart's rhythm). Mitral valves can have stenosis or be leaky, like the aortic and pulmonary valves, but the flaps on the valve can also bulge and not close tightly, called mitral valve prolapse. Mitral valve prolapse tends to run in families and has no known cause.

Tricuspid Valve Disease

When the valve going from the top chamber (atrium) to the bottom chamber (ventricle) on the right side of the heart is leaky, narrowed (uncommon), or closed completely (atresia), a patient has tricuspid valve disease. Tricuspid valve disease may be caused by the same causes as other valve diseases, but it also may be caused by pulmonary hypertension (high pressure in lungs), heart failure or cardiomyopathy (disease of the heart muscle). When a person has tricuspid valve disease, blood flows back into the right atrium, and this can cause an emergency medical situation or weaken the heart over time.

What Causes Valve Disease?

Heart valve disease can be the result of an infection or virus, a congenital heart defect, radiation therapy, calcium buildup or can even occur as a person gets older.

Symptoms of Valve Disease

It's possible to have valve disease with no symptoms at all, but any of the following may be symptoms of valve disease.

- Shortness of breath
- Feeling weak, dizzy or light-headed
- Chest pain
- Irregular heartbeat and/or swelling in your legs, feet or abdomen

These symptoms do not necessarily mean you have valve disease, but you should see a healthcare professional if you have one or more of these.

Diagnosing Valve Disease

Diagnosing heart valve disease is similar to most types of heart disease. The doctor may order a chest X-ray, blood test, echocardiogram and EKG. If the doctor suspects valve disease, he or she may order a cardiac catheterization for further testing and possibly for treatment.

Treating Valve Disease

Valve disease is treated in different ways, depending on the condition and its severity.

Medication

Sometimes valve disease can be treated with medication that helps ease the symptoms of valve disease, although it cannot fix the valve problem.

Balloon Valvuloplasty

If the valve is narrowed, doctors may recommend a balloon valvuloplasty to open it up. This is done during cardiac catheterization (see [page 27](#) for more information on cardiac catheterization) rather than heart surgery. During the cardiac catheterization, the catheter holding a small balloon is inserted into the valve, then inflated to stretch open

“Before I had my valve replaced during a TAVR, I was tired all the time and had no energy. I thought those were just signs of getting old. After I had the TAVR, I felt great! I am so glad they can do this now. Technology is amazing!”
– Cindy

the valve. This procedure can be done with any heart valve, but it does have some risks and limitations, particularly for patients with tricuspid or aortic valve disease.

Annuloplasty

For leaky valves, an annuloplasty may be needed to tighten or repair the ring of tissue called the annulus around the valve in the heart. In this procedure, doctors will sew sutures, or stitches, around the ring to make the opening smaller. In some cases, they may attach a ring-like device around the outside of the valve to help it close more tightly.

Transcatheter Valve Replacement

Transcatheter valve replacement is another way to treat valve disease, and there are different procedures designed to treat specific issues. If you are a candidate for transcatheter valve replacement, there are some benefits over surgery:

- Less risk of infection
- Shorter hospital stay
- Less trauma to the heart and chest
- Reduced recovery time

The types of transcatheter valve replacements are:

Transcatheter Aortic Valve Replacement (TAVR): Adult patients with severe aortic stenosis, even low-risk patients, may be able to have their aortic valve replaced via cardiac catheterization instead of through surgery in a procedure called a TAVR. TAVR is less invasive than heart surgery and recovery is often faster. Today, many patients with aortic stenosis are candidates for the TAVR procedure, so ask your doctor if this procedure is right for you.

Cerebral Embolic Protection with TAVR: Valve replacement increases the

risk of stroke because calcified debris can break loose and travel to the brain. Cerebral embolic protection systems can greatly reduce the risk of stroke with a TAVR. Tiny filters are placed into the arteries that carry most of the blood to the brain, and these filters catch debris so it cannot reach the brain. If you are going to have a TAVR, ask your doctor about cerebral embolic protection availability.

Transcatheter Pulmonary Valve

Replacement: As with aortic valve replacement, the pulmonary valve may be replaced surgically or during a cardiac catheterization. Transcatheter pulmonary valve replacement is available for adults and children over a certain size. This less-invasive procedure takes less time than surgery and recovery time may be faster.

Mitral Valve Clip Procedure: Patients with severely leaky mitral valves who are too sick for surgery may be candidates for a transcatheter procedure where

QUESTIONS TO ASK YOUR DOCTOR:

If you are diagnosed with valve disease, here are some questions that you may want to ask your doctor:

- How severe is my valve disease?
- What might happen if I don't do anything?
- What changes should I make to my diet and exercise routine?
- Are there medications I can take to help me feel better?
- What treatment options are available for me?
- What are the risks and benefits of each option?
- Am I a candidate for a transcatheter procedure?
- What is my recovery time with each option?
- Who is the best person to perform the procedure or surgery?

a small clip, about the size of a dime, is attached to the mitral valve to help it close more completely. This procedure is done during a cardiac catheterization, and the patient may avoid the need for heart surgery.

Surgical Valve Repair or Replacement

Some people have heart valve disease that can't be managed with medicine, and they're not candidates for a transcatheter approach, so a surgical option is often best for them. The good news is that most valves can be repaired or replaced during surgery. Heart valve surgery is a major operation that often lasts two hours or longer. Recovery time is typically the same as other major operations and may take several weeks.

Today, there are some minimally invasive options for surgical valve repair where the surgeon does not go through the breastbone and the heart is not stopped for the procedure. A surgical tool is placed through small

incisions (cuts) and the surgeon views the patient's heart on a video screen to perform the operation.

Types of Replacement Valves

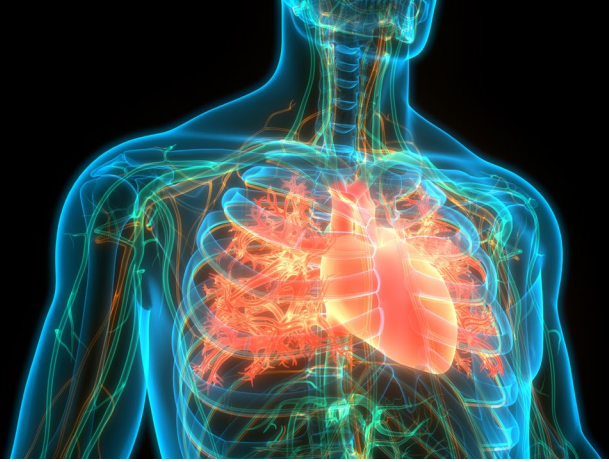
Mechanical: Mechanical valves are often made of metals and can last a long time, which is their main benefit. People who get mechanical valves may need to take anticoagulants (blood thinners). (See more on medications on [page 75](#).)

Biological: These valves come from animals or human donors; human valves may last longer than animal valves. Blood thinners will have to be taken for the short-term with biological valves but can often be stopped eventually.

Living with Valve Disease

In addition to making healthy lifestyle changes, cardiac rehab is highly recommended after valve replacement or surgery. (For more on a healthy lifestyle see [page 68](#).)

Blood Pressure



KNOWING YOUR BLOOD PRESSURE, and keeping it at a healthy level, is important to your health. Your blood pressure (BP) number is useful in measuring how hard your heart is working. You don't want your heart to be "overworking" (hypertension) all the time. Chronic high blood pressure for years or even decades can lead to heart attacks, stroke, kidney disease and blindness. Fortunately, there are lots of easy ways to control your blood pressure.

How Blood Pressure is Measured

Blood pressure readings consist of two numbers – systolic blood pressure and diastolic blood pressure. Systolic blood pressure is always the first number given, and it shows the pressure your blood is creating against your artery walls when your heart beats.

Diastolic blood pressure is the second number given and it reflects the pressure in your blood vessels while the heart is resting between beats.

The test to find out your blood pressure levels is simple and painless. An inflatable cuff with a gauge on it is wrapped around your arm and gently inflated. A health care professional will slowly let air out of the cuff while they listen to your pulse with a stethoscope and monitor the gauge. The gauge uses a unit of measurement called millimeters of mercury (mmHg) to measure the pressure in the blood vessels. Sometimes

this is done by a machine rather than a person.

The Numbers and What They Mean

According to The American College of Cardiology/American Heart Association Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults, a normal blood pressure reading means the systolic number is 120 mm Hg and diastolic is 80 mm Hg. As we age, our blood vessels tend to get stiffer causing our blood pressure to rise. With a program of regular exercise and other lifestyle changes (described below) you can keep your blood pressure in a comfortable range for your heart.

A patient with a reading that puts them at risk of high blood pressure is considered to be **prehypertension**. In this case the systolic number is anywhere from 120 to 129 mm Hg and the diastolic is less than 80 mm Hg.

Patients with a systolic number of 130 mm Hg or higher and a diastolic number of 80 mm Hg or higher are considered to have high blood pressure or **hypertension**.

How To Manage High Blood Pressure

People with high blood pressure can manage their levels with a few lifestyle changes and/or medication. Patients should work with their medical team to

YOUR BLOOD PRESSURE



know what's right for them, but in general, making these lifestyle changes can be easy, practical, relaxing, beneficial, and even fun.

- Get some exercise! Don't overdo it at the beginning; start with 20 minutes three times each week and slowly work up to more.
- Stop smoking. It may not be easy, but you need to quit.
- Eat a healthy diet. Some salt is okay for most people, but overdoing anything is bad. There is even compelling evidence that red wine in the evening, in moderation, may help you live longer; but again, overdoing anything is bad.
- Maintain a healthy weight. If you're eating right and exercising, this will be easier to do.
- Manage stress. This is also easier said than done. Look for ways to reduce stress in your life, whether that comes through exercise, journaling, taking a hot bath or taking a walk.

Medications

If your high blood pressure isn't easy to control with lifestyle changes alone, there are numerous medication options available. There are typically no symptoms associated with high blood pressure, so it's important to remember that you must take your medication every day, even if you feel great. Occasionally, high blood pressure medicines can cause side effects like headaches, dizziness or an upset stomach, so talk to your doctor if you are experiencing any of these.

Some of the most commonly prescribed medications are:

- Angiotensin-converting enzyme (ACE) inhibitors help relax blood vessels by preventing the formation of angiotensin, a chemical in your body that

narrows blood vessels.

- Diuretics, or water pills, remove excess water and sodium from your body, so there is less fluid flowing through your veins and arteries. This reduces pressure on the walls of your blood vessels. The three types of diuretics are thiazide, loop and potassium-sparing.
- Angiotensin II receptor blockers (ARBs) block the action of angiotensin, a chemical in your body that narrows your arteries and veins.
- Calcium channel blockers prevent calcium from entering the cells of your heart and arteries, allowing your arteries to relax and open.
- Beta blockers hinder the effects of the hormone epinephrine, also known as adrenaline, by making your heart beat slower and with less force so it doesn't have to work as hard.
- Renin inhibitors slow the production of renin, a substance produced by your kidneys that triggers a series of steps that increase blood pressure.
- Alpha blockers prevent the hormone norepinephrine (noradrenaline) from tightening the muscles in the walls of smaller arteries and veins, which causes the vessels to remain open and relaxed.
- Alpha-beta blockers also prevent tightening of the muscles in the walls of arteries and veins, but may be prescribed if you have high blood pressure and are at risk of heart failure.
- Central-acting agents are medications that prevent your brain from sending signals to your nervous system to speed up your heart rate and narrow your blood vessels so your heart doesn't pump as hard and your blood flows more easily through your veins and arteries.

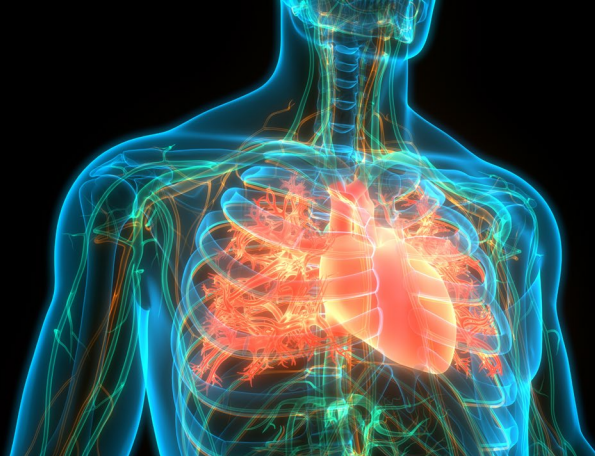
BLOOD PRESSURE MEDICATIONS

- Angiotensin-converting enzyme (ACE) inhibitors
- Diuretics, or water pills
- Angiotensin II receptor blockers (ARBs)
- Calcium channel blockers
- Beta blockers
- Renin inhibitors
- Alpha blockers
- Alpha-beta blockers
- Central-acting agents
- Vasodilators
- Aldosterone antagonists

- Vasodilators prevent the muscles in your veins and arteries from tightening and narrowing so the blood flows more easily and your heart doesn't have to pump as hard.
- Aldosterone antagonists block the hormone aldosterone, which sometimes causes salt and fluid retention. They are often used with other drugs, such as a diuretic, and may be prescribed to people with diabetes or heart failure.

“Remember, life is to be enjoyed. Relax and control your blood pressure with some easy and rewarding lifestyle changes. You can always take medication, but keep up your lifestyle therapy, too. Don't overdo it; if your regimen is too strict and controlling, you won't enjoy it.”

Other Cardiovascular Disease



Acute Coronary Syndrome (ACS)

You've heard of heart attacks, but do you know about ACS? Conditions that block blood flow to the heart — most commonly heart attack and unstable angina — fall under the umbrella of acute coronary syndrome. These emergency situations require immediate treatment.

Risk Factors

Risk factors for ACS include smoking, high blood pressure, high blood cholesterol, diabetes, being overweight or obese, inactivity and a family history of chest pain, heart disease or stroke.

Symptoms

Any pain or discomfort in your chest may point to a problem with your heart and should be taken seriously. If you experience any of these symptoms, seek medical treatment right away:

- Chest pain or discomfort (pain may be constant or come and go and may be accompanied by pressure, tightness, or fullness)
- Pain or discomfort in the arms (one or both), jaw, neck, back or stomach
- Shortness of breath
- Feeling dizzy or light-headed
- Nausea
- Abnormal pulse
- Sweating

Diagnosis

Your healthcare provider will take a medical history and give you a physical

exam. If ACS is suspected, your doctor may order a blood test and an electrocardiogram (ECG or EKG) to measure the heart's electrical activity and heart rhythm.

Treatment

If tests show a blockage of blood flow to the heart, further testing may confirm a diagnosis of ACS. The artery must then be reopened using medicines or angioplasty, in which a small balloon is inflated inside the artery to open it up. A wire mesh tube called a stent may also be placed in the artery to keep it open.

Angina

Approximately 9 million people in the United States have chronic stable angina (also known as "angina"), which is pain or discomfort in the chest or other areas of the body. It's usually caused by blocked arteries in the heart. Plaque builds up over time in the arteries, which is called coronary artery disease, or CAD. (See CAD below.) In CAD, the arteries of the heart become stiff and narrow, making it difficult for oxygen-rich blood to reach your heart muscle. The lack of oxygen can cause the discomfort of angina. Angina is your heart's way of telling you it needs more oxygen.

Triggers of Angina

Episodes of angina are usually brought on by one of the four "E's" — exercise, emotional stress, eating too much or

ACUTE CORONARY SYNDROME RISK FACTORS

- Smoking
- High blood pressure
- High blood cholesterol
- Diabetes
- Obesity
- Inactivity
- Family history of chest pain, heart disease and stroke

exposure to extreme cold. Angina usually goes away with rest or medicine to open blood vessels (nitroglycerin). If you have angina that does not resolve with rest or nitroglycerin, you should seek immediate medical attention by calling 911.

People Experience Angina Differently

Symptoms of angina include discomfort or pain in the chest or surrounding areas (arm, shoulder, back, neck, or jaw). It can feel like tightness, pressure, squeezing or crushing and can spread to the arm, back, jaw, neck and shoulder. Some patients may experience feeling faint, tired, out of breath or as if they have heartburn.

Diagnosis and Treatment

Because angina shares symptoms with other serious heart diseases, you should seek medical care immediately if you experience symptoms. It's important to share all the details about your condition with your healthcare team members so they can diagnose and manage your condition. Your healthcare team will review your personal and family history, assess risk factors, conduct a physical exam and may run tests to determine whether you have angina or another condition. (See [page 23](#) for common tests and therapies).

Once you are diagnosed with angina, your healthcare provider will ask questions to get a better understanding of your angina, including your pain level, and explain which treatments might be right for you. Use the notes section of this HeartGuide to write down your angina symptoms, level of pain and related issues and bring the information with you to every exam.

Atherosclerosis

Atherosclerosis is when you have too much plaque (fatty deposits) and it clogs your arteries. These deposits are made up of cholesterol, fatty substances, cellular waste products, calcium and fibrin (a clotting material in the blood).

As plaque builds up, the wall of the artery thickens. This narrows the artery, which reduces blood flow. That, in turn, reduces the amount of oxygen and other nutrients reaching the body. This can cause different problems, depending on where the plaque builds up. Peripheral artery disease, coronary artery disease, and angina are common cardiovascular diseases caused by atherosclerosis.

Atherosclerosis can progress slowly or quickly. Some individuals develop trouble in their 30s, while others don't see the effects until they are in their 50s or 60s. Some hardening of the arteries is normal as people age.

Coronary Artery Disease (CAD)

Coronary artery disease (CAD) is another form of atherosclerosis and includes all disorders that affect the coronary arteries. The coronary arteries are the arteries that supply blood to the heart.

Risk Factors: Being overweight, physical inactivity, unhealthy eating, and smoking are risk factors for CAD. A family history of heart disease also increases your risk for CAD, especially a family history of having heart disease at an early age (50 or younger).

Symptoms: Angina, or chest pain and discomfort, is the most common symptom of CAD. Angina can happen when too much plaque builds up inside arteries, causing them to narrow. Angina is discussed in detail above. When the

TRIGGERS OF ANGINA — THE FOUR "E's"

- Exercise
- Emotional stress
- Eating too much
- Exposure to extreme cold

arteries narrow, it can cause chest pain because the blood flow to your heart muscle and the rest of your body is blocked or restricted.

Diagnosis and Treatment: Physical exams and imaging tests are used to diagnose CAD. Treatments include lifestyle changes (such as exercise and smoking cessation), medicines to control cholesterol or blood clots, stents to open blocked arteries and graft bypass surgery to go around blocked arteries.

Peripheral Artery Disease (PAD)

Peripheral artery disease (PAD) is a form of atherosclerosis, the hardening and narrowing of the arteries caused by the gradual buildup of fatty deposits and other substances, which restrict the flow of blood. PAD includes all disorders that affect the arteries outside the heart, such as deep vein thrombosis, which is a blood clot that forms in a vein inside the body. The most common form of PAD affects the legs and feet.

Risk Factors: The main risk factor for PAD is smoking. Other risk factors are nearly identical to those for other cardiovascular diseases, including high blood pressure, diabetes, high cholesterol, older age and atherosclerosis in other arteries. Those with clogged arteries often have similarly damaged blood vessels in other parts of their bodies, which put them at a higher risk for heart attack and stroke.

Symptoms: Some people with PAD have no symptoms, particularly in the early stages. About one-third of patients report pain in their legs while they walk that goes away at rest. Due to the lack of symptoms — or the tendency to think symptoms are part of normal aging or arthritis — PAD may go undiagnosed.

Among those who have early-stage

symptoms, the most common are cramping, hair loss on the feet or legs; cold legs or feet; fatigue; color changes; heaviness, pain or discomfort in the thighs, calves, buttocks, or hips during activity; and changes in toenails. The more the muscles demand from the bloodstream during intense physical activities, the worse the pain.

Diagnosis and Treatment: As with CAD (above), physical exams and imaging tests are used to diagnose PAD. Treatments include lifestyle changes (such as exercise and smoking cessation), medicines to control cholesterol or blood clots, stents to open blocked arteries, and graft bypass surgery to go around blocked arteries.

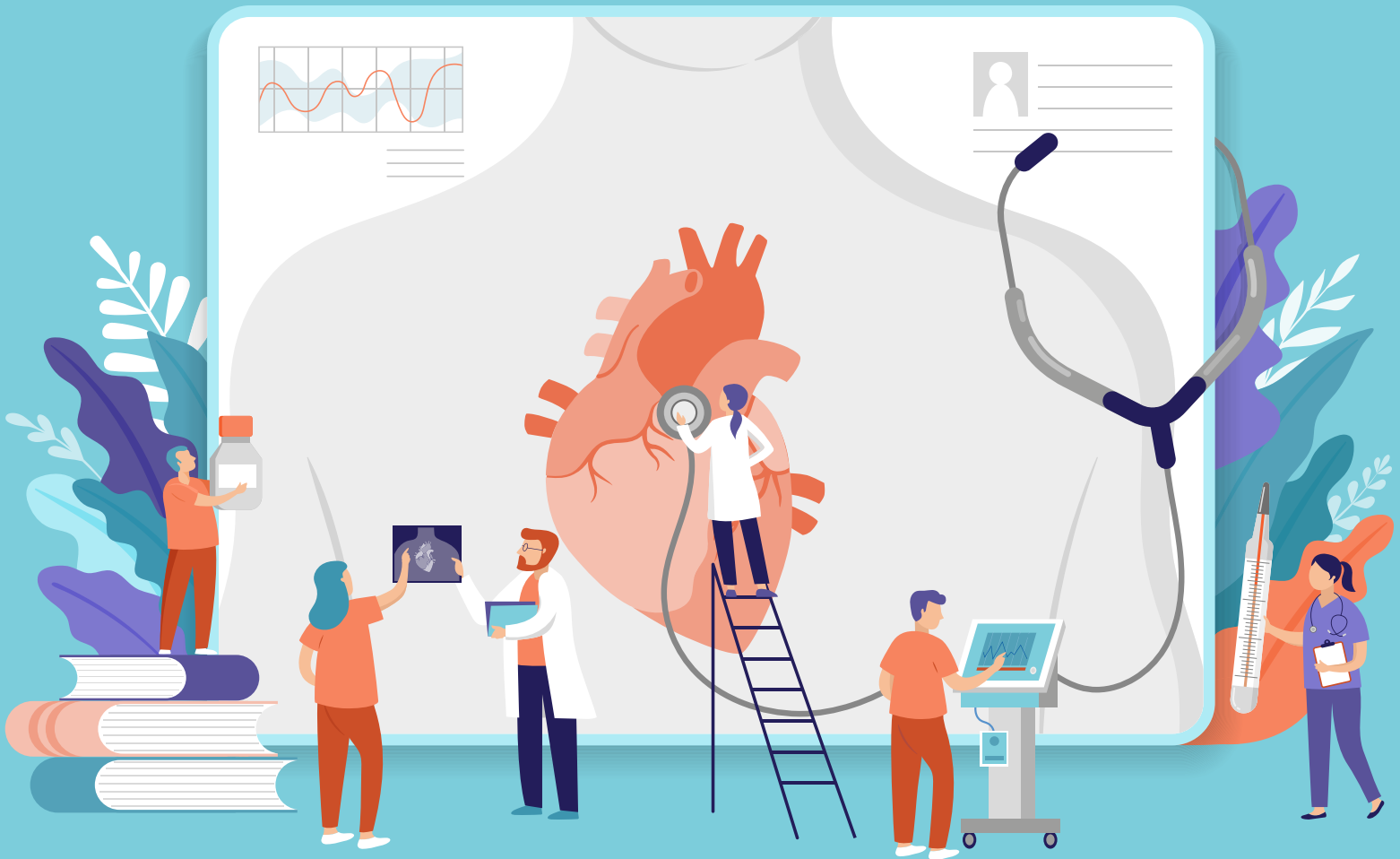
Sudden Cardiac Arrest

At rare times, the heart can go into cardiac arrest without warning. This is called sudden cardiac arrest, an extremely dangerous condition leaving patients with just minutes to receive emergency medical care. If you see a person suddenly lose consciousness and can't find a pulse, get immediate medical help. If the person is unresponsive, rescuers can administer cardiopulmonary resuscitation (CPR) and defibrillation using an automated external-defibrillator (AED), if available, to restore blood flow.

A large blue '4x' icon with a plus sign inside the '4', indicating a fourfold increase in risk.

The factor by which your risk of Peripheral Artery Disease increases if you smoke

Improving Your Heart Health



Controlling Risk Factors

AFTER EXPERIENCING A HEART event or learning you have heart disease, it's normal to feel a loss of control and wonder how you can improve your heart health. Sometimes a heart event is a wake-up call that makes you aware of habits and lifestyle choices that aren't the best for your heart. To regain a sense of control over your heart health, learn about the risk factors that lead to heart disease. Even in cases where heart disease is hereditary or caused by factors beyond your control, making important lifestyle changes can prevent heart disease from worsening while increasing your chances for a healthy heart.

Several major risk factors increase the risk of heart and blood vessel (cardiovascular) disease; some you can change and some you can't. Various health conditions, lifestyle choices, age and family history can all increase the risk for heart disease. Three frequently preventable risk factors found in about half of Americans (47%) are high blood pressure, high cholesterol and smoking. The more risk factors you have, the greater your chance of developing heart disease. For example, if you have high blood pressure and high cholesterol, your risk of heart disease is greater than if you just had one condition.

Risk Factors That Can't Be Changed

No matter how well we treat our bodies, there are some risk factors for heart disease that are out of our control. Given that some factors can't be changed, it's important to treat and control the ones

we can. Here are some of the risk factors for heart disease that people typically cannot control:

Age: Try as we might, we can't fight time. As we age, our risk of heart disease increases; the risk for men goes up after age 45 and the risk for women increases after age 55.

Gender: Men have a greater risk of heart attack than women and tend to have heart attacks earlier in life, but heart disease is the No. 1 killer of both men and women.

Family history (heredity): Children of parents with heart disease are more likely to develop it themselves. Most people with a strong family history of heart disease have one or more other risk factors.

Insulin resistance: Insulin is a hormone that helps blood sugar move to the cells. If your body can't use its own insulin, you have insulin resistance, which may lead to diabetes and heart disease.

Type 1 diabetes: This type of diabetes tends to show up during childhood. (Type 2 diabetes, which can be prevented, is discussed below.) Diabetes seriously increases your risk of developing cardiovascular disease. Even when glucose (blood sugar) levels are under control, diabetes increases the risk of heart disease and stroke, but the risks are even greater if blood sugar is not well controlled. If you have diabetes, it's extremely important to work with your health care team to manage it and control any other risk factors you can.

Being postmenopausal: Postmenopausal women are more likely to develop heart disease.



RISK FACTORS THAT CAN'T BE CHANGED

- Age
- Gender
- Family history (heredity)
- Insulin resistance
- Type 1 diabetes
- Being postmenopausal
- Race

Race: African-Americans, Native Americans and Mexican Americans are more likely to have heart disease than Caucasians.

Risk Factors You Can Control

Throughout your journey, you may feel overwhelmed by medical information and maybe even stressed about things that you can't control. The great news is that there are things you can do to improve your heart health *and* reduce your risk of new or worsening heart disease. You are in control of your health, and it starts with a healthy lifestyle.

Adopting a healthy lifestyle is the most important thing you can do for yourself. This may look different for everyone, but it's important to understand how your lifestyle plays into the health of your heart and body.

Get moving: An inactive lifestyle is a risk factor for heart disease, so it's important to keep moving. Exercise can help control blood cholesterol, diabetes and obesity, and can even lower blood pressure and stress levels in some people. The first step is checking your exercise program with your doctor and/or healthcare team. Cardiologists often offer services where trained professionals will work with you to help you find the exercise that is right for you and your health condition.

When starting an exercise program, remember everyone has to start somewhere. For some people that may be a lap around the house, stretching each morning or going up and down one flight of stairs. Find one exercise or physical activity you can add into your day, even if it's for just 10 minutes, and keep doing it. Add more when you feel ready. When you are able, moderate-intensity activities like walking have a

positive effect if done regularly and over the long term. If your doctor approves, and you are ready, you can progress to regular, moderate-to-vigorous physical activity.

Fitness trackers are a great tool to help document your progress and manage your goals. In addition to counting your steps, fitness trackers can monitor your heart rate, your sleep and the number of calories you burn. They range from basic and inexpensive to detailed and high-end. It's important to find one that works for your needs, so take the time to research the various options. Many mobile phones have health trackers built in as well.

Cardiac rehab (discussed more on [page 74](#)) is a great resource for heart patients. This program will help you find exercises that fit your body and can even help you with other areas of living a healthy lifestyle. Talk with your doctor about entering a cardiac rehab program and be sure to stick with it.

Stop Smoking: People with heart disease who smoke cigarettes are twice as likely to die from sudden death than nonsmokers. Cigarette smoking combined with other risk factors greatly increases the risk for coronary artery disease. Second-hand smoke increases the risk of heart disease also, even for nonsmokers. Smokeless tobacco, vaping and other tobacco products increase your heart disease risk as well.

Smokers who quit start to improve their heart health and reduce their risk for heart disease immediately. Within one year, the risk of heart attack drops dramatically, and even people who have already had a heart attack can cut their risk of having another if they quit smoking. Within five years of quitting, smokers lower their risk of stroke to

TIP: BULLET JOURNALING FOR SUCCESS

One useful tool that you can use on your healthy lifestyle journey is to track your goals. You can do this by creating a bullet journal for success. In the tools section of this guide, you'll find a blank journal template to use as your starting point. Set your goals for each month, fill in each day that you reach those daily goals and then reflect on your goals at the end of the month.

that of a person who has never smoked. Explore smoking cessation programs with your doctor and look for support from others who have successfully quit. You can do this!

Control your cholesterol: As the “bad” blood cholesterol — LDL (low-density lipoprotein) — rises, so does the risk of heart disease. Most health experts agree that individuals with a total cholesterol level of greater than 200 mg/dl are at higher risk. When combined with other risk factors such as high blood pressure and smoking, the risk is even greater. Make sure you manage your cholesterol and talk to your doctor. Find out more about high cholesterol on [page 40](#) of this guide.

Manage your blood pressure: High blood pressure increases the heart’s workload, causing the heart to thicken and become stiffer. It also increases your risk of stroke, heart attack, kidney failure and heart failure. It’s important for you to manage and control your blood pressure. Changing your lifestyle (including quitting smoking and eating a healthy diet) may lower your blood pressure, but you may need medication management as well. Normal range for blood pressure is below 120/80. If your numbers are higher than that, talk to your doctor about your options.

Maintain a healthy weight: People with excess body fat — especially if a lot of it is around the waist — are candidates for heart disease and stroke even if they have no other risk factors. Excess weight increases the heart’s work. It also raises blood pressure, blood cholesterol and triglyceride levels, and lowers “good” HDL (high-density lipoprotein) cholesterol levels. It can also make you more likely to develop diabetes.

If you are overweight, take the steps

to lose the weight now and reduce your risk of other complications that can come from carrying those extra pounds. Make sure you choose a heart-healthy diet instead of looking for fast results from a fad diet.

Eat a heart-healthy diet: A heart-healthy diet may look a little different for each person, depending on your individual need. But, as a general rule, an overall healthy diet pattern emphasizes:

- fruits and vegetables
- whole grains
- low-fat dairy products
- skinless poultry and fish
- nuts and legumes
- non-tropical vegetable oils

A heart-smart diet also limits fried foods, red meat, sweets and sugar-sweetened beverages.

Preparing foods in a healthier way can also improve your diet. Broil, bake or grill your food instead of frying it. Limit your gravy and heavy sauces, reduce portion sizes and use oil and vinegar on your salads instead of sugar-packed (and calorie-packed) options.

Eating at home and learning to prepare your meals in a healthy way is important. You may want help from a dietician or a healthcare professional, so talk to your doctor about these options if you need more guidance and information.

Manage your sodium intake: To reduce your sodium intake, pay attention to the places where sodium might hide. For example, 70% of sodium intake comes from prepackaged or restaurant food.

Here are some tips:

- Prepare your meals at home using fresh vegetables and fruits.
- Spice up your meals with garlic, onions and other spices instead of salt.
- Drain and rinse canned vegetables



TIP: USE THE BUDDY SYSTEM

Get yourself a buddy who will hold you accountable. This can be a friend, neighbor or another Mended Hearts member. Surround yourself with people who want you to succeed.

- and choose “low sodium” or “no sodium” canned vegetables.
- Avoid frozen vegetables that are packed with sauces, which contain a large amount of sodium.
- Use condiments sparingly and choose low sodium options.
- Cook your pasta and rice without salt in the water.
- Watch out for words like pickled, brined, barbecued, cured, smoked and au jus, and avoid prepared broths, soy sauce, miso or teriyaki sauce. These tend to be high in sodium.
- Look for foods that are steamed, baked, grilled, poached or roasted.

Take your medication as prescribed:

On your journey to a healthy heart, you may be prescribed medication to help you reach your goal. Later in this guide you’ll find more details on how to get help with your medications. But now let’s look at why it’s important to stay on your medications.

One of your healthcare team’s roles is to prescribe medicines and therapies to help you recover from heart disease and maintain a healthy heart. Patients don’t always take their medications as prescribed, and this is a nationwide problem that not only might harm the patient, but it also can increase healthcare costs for us all.

Medication adherence is a fancy phrase for taking your pills as you were told by your doctor or healthcare team. It can be just as important to your recovery after a heart event as following diet and exercise guidance. Medications can be expensive, but the costs of hospitalization are far greater to our pocket-books and our overall health.

When you don’t take medications as instructed, you could end up back in the hospital, which is called readmission.

Readmissions are expensive and put you at risk for more cardiovascular events in the future. If cost is preventing you from taking your medications, talk with your healthcare provider about alternatives. You should never stop a medication unless directed by your healthcare provider.

Reduce stress: Stress and emotional health play a key role in your overall health. When you are experiencing a stressful situation, your body releases adrenaline, a hormone that temporarily causes your breathing and heart rate to speed up and your blood pressure to rise. These reactions prepare you to deal with the situation — known as the “fight or flight” response. Now and then, this is not harmful to your body, and in emergency situations it may save your life. But constant stress is hard on your heart and can also lead to risky behaviors such as overeating, drinking too much alcohol or smoking.

Finding ways to reduce stress is important to your emotional and physical well-being. In fact, a lot of the things you can do to keep your heart healthy, such as eating right, exercising and not smoking, can help reduce stress as well. Activities like yoga or meditation are effective ways to relax. Practicing mindfulness, journaling and talking to others are also beneficial.

If you’re experiencing high levels of stress or anxiety, talk to your healthcare provider about how to manage it.

Get your flu shot: People with heart disease and those who have had a stroke have a higher risk of developing serious complications from the flu, so getting your flu shot is especially important.

In addition to getting a flu shot, take actions to prevent getting sick such as covering coughs, washing hands often,




It is estimated that at least half of all patients do not take their medications as directed.

eating well, getting enough sleep and avoiding people who are sick. People with heart disease should also maintain a two-week supply of their regular medications during flu season.

If you get the flu or another respiratory infection, don't stop taking your regular medications without consulting your doctor. People with heart failure should pay attention to changes in their breathing and should promptly report changes to their doctor.

Avoid heavy alcohol use: Drinking too much alcohol can raise blood pressure, cause heart failure and lead to stroke.

Get enough sleep: Sleep is essential to your heart health. Not getting enough sleep (or getting too much) can affect your body. Long, deep periods of sleep activate certain chemicals that allow the heart rate and blood pressure to lower for an extended time. Missing out on these periods of sleep can lead to higher blood pressure during the day and a greater chance of cardiovascular problems.

You need between seven and nine hours of sleep every night. Getting a good night's rest may be hard, but here are some tips:

- Have a set sleep schedule. Try going to bed at the same time every night and getting up at the same time each morning.
- Avoid napping later in the day.
- Avoid TV, cell phones, or other electronic devices for an hour before bed.
- Exercise daily but avoid strenuous exercise late in the day.
- Avoid caffeine later in the day.
- Keep your bedroom dark and at the right temperature (not too hot or too cold).

If you have symptoms of sleep apnea or another sleep disorder, talk with your

doctor so they can help you manage it. This could make a difference in your heart health, as poor poor habits and sleep disorders can put you at risk of heart disease as well.

Stay up to date on your vaccines:

Heart disease can make it harder for you to fight off certain diseases and makes it more likely that you will have complications. As a heart patient, you should make sure you're reducing your risk of serious illness that may lead to more heart complications.

The following vaccines are recommended by the Centers for Disease Control (CDC) for adults over the age of 50, in addition to the flu shot:

- **Tdap vaccine.** You should get the Tdap vaccine once if you did not receive it as an adolescent to protect against pertussis (whooping cough) and then a Td (tetanus, diphtheria) booster shot every 10 years.
- **Shingles vaccine.** The shingles vaccine protects against shingles and the complications from the disease. It is recommended for healthy adults 50 years and older.
- **Pneumococcal polysaccharide vaccine (PPSV23).** The PPSV23 vaccine protects against serious pneumococcal disease, including meningitis and bloodstream infections. It is recommended for all adults 65 years or older and for adults younger than 65 years with certain health conditions.
- **Pneumococcal conjugate vaccine (PCV13).** The PCV13 vaccine protects against serious pneumococcal disease and pneumonia. It is recommended for all adults with a condition that weakens the immune system, cerebrospinal fluid leak or cochlear implant. Talk with your doctor to make sure you're following the guidelines for your



RECOMMENDED VACCINES FOR PEOPLE OVER 50

- Tdap
- Shingles
- Pneumococcal polysaccharide (PPSV23)
- Pneumococcal conjugate (PCV13)

specific healthcare needs. You can talk with your primary care doctor, your cardiologist or another healthcare provider.

Get Support: You don't have to do this alone. Some of the best advice came straight from a patient....

“Find a connection, people who understand your situation and will support you.” – Julia

“I didn't know how I was going to change my eating habits and still enjoy food. The support of others helped a lot” – Sue

**“Mended Hearts support saved my life, literally.”
– Marvin**

“Seeing so many other heart patients let me know I could have a good life and I was not alone.” – Robert

Following Treatment Plans

AN IMPORTANT PART OF YOUR heart journey is to follow the treatment plan prescribed by your healthcare professional. These plans are different for everyone but will probably include diet and exercise, monitoring your heart condition and medications.

The resources in the following pages of this HeartGuide are designed to help you set goals, follow treatment plans and take your medications as prescribed.

Here are some tips from patients themselves on following treatment plans:

“It’s all about attitude. Patients say that a positive attitude with some determination, flexibility, hope, persistence and commitment makes a big difference.”

“Educate and empower yourself. Attend webinars, go to reliable online sources, and ask your doctor what materials can help you get more information about your cardiovascular disease.”

“Friends and family are key in helping patients stay motivated and stick with their treatment plan. Many patients say spouses or partners and adult children were very helpful.”

“Patients tell us that supportive doctors and medical teams are another major factor in sticking to treatment plans. They said to make sure your doctor will answer questions and help you find the information and resources you need.”

“Getting involved and active is another way patients are able to stick to their plan. They recommend finding things that you have passion about so you are more likely to stick to them.”

“Diet and exercise are very important for all of us, but particularly heart patients. Make small changes to your diet and activity—don’t try to do too much at once and you are more likely to stick with it.”

“Join a support group like Mended Hearts where you can learn from others, share your story, and get support when you need it. Patients who have “been there” often have good ideas for sticking with your treatment plan.”

“When in doubt, ask. If you have side effects from medication, you cannot do some things on your treatment plan, or if you want to make some changes, talk to your healthcare team instead of stopping. Your treatment plan has to work for you.”

“Take time for yourself. Patients tell us that spiritual practices, gratitude practices, journaling, meditation and other activities for mind, body and spirit can be very helpful.”

“Find helpful resources like apps to help remind you about medication, exercise apps, coaches, nutrition specialists, cardiac rehab, local gyms and other resources can really help you stay on track.”

Cardiac Rehabilitation

THE FIRST STEP TOWARD HEART health often begins with cardiac rehabilitation, a medically supervised program designed to help patients heal after a heart event and learn how to reduce heart problems in the future. These programs typically include four components: medical evaluation, physical activity, lifestyle education and peer support — like that offered by Mended Hearts.

Studies show that cardiac rehabilitation has dramatic benefits. Many patients experience an improved quality of life, including being more motivated, enjoying life more, building strength and endurance and having a sense of well-being. Patients who stick to a rehab program also significantly reduce the likelihood of another serious heart event.

Here is what your healthcare team will typically look at before prescribing your cardiac rehabilitation program:

- **Overall health.** A medical assessment will determine your physical abilities and limitations, your risk factors for cardiovascular disease and other health issues.
- **Exercise.** Near-daily exercise is the goal for optimal heart health, so your healthcare team will assess your ability to exercise and tailor an exercise program to your needs. Your healthcare team will also help you find the right mix of aerobic exercise and strength training. The program may start slowly and gradually increase as you build endurance.

- **Lifestyle.** Your healthcare team will help you set and meet goals for a healthier lifestyle, which is key to successful cardiac rehabilitation. This includes guidance about what foods to choose, how to stop smoking if you are a smoker and how to manage the pain and fatigue that sometimes show up during recovery and more.
- **Support.** Recovering from a heart event is a team effort. No one can go it alone. That's why family and friends are so important to helping you get back on your feet. But you may want to include other forms of support, too, such as social and learning activities with other heart patients, or counseling and therapy sessions. Mended Hearts and our HeartGuide are also sources of support.

Cardiac rehabilitation requires a referral and typically is part of outpatient care. Ask your doctor if you are eligible for a cardiac rehab program and be sure to sign up. The program is specifically designed for each patient and is typically eight to 12 weeks long.

Commit to attending cardiac rehab for the entire program. Talk with your doctor about the barriers you might have for attending; as a team, you can find a solution that works best for you.

Most importantly, make a commitment to become healthier no matter what your age; cardiac rehab is an important part of this process.



FOUR PARTS OF A CARDIO REHAB PROGRAM

- Medical Evaluation
- Physical Activity
- Lifestyle Education
- Peer Support

Medications

MANY PATIENTS WITH CARDIO-vascular disease are prescribed medication(s). If you are prescribed medication, it is critical that you take it as directed. As discussed in the Controlling Risk Factors section of this HeartGuide, many people don't take their medications as prescribed. This can have several negative effects on your health, including worsening symptoms or even another heart event.

Important Considerations for Taking Medications

- Understand the medication and what it is for. Talk to your doctor to learn the “why” behind why you are being prescribed the medication. Some medications are prescribed for different conditions than the most common use of the medication, so don't stop taking it just because you don't have the condition it is typically used for.
- Review prescriptions before you have them filled and make sure they are correct. Pay special attention to the name and dosage as well as when and how often you should take the medicine. Review prescriptions with your physician, nurse or pharmacist to make sure you're both reading off the same label.
- Read the label and check to see that your prescription is properly filled before leaving the pharmacy. It is important to read, understand, and follow the information on the label. All prescription labels provide this basic information:
 - Name, address and phone number

- of the pharmacy that filled the prescription
- Prescribing physician's name
- The generic or brand name of the medication. You may get the generic version of the medication that has a different name than the brand name prescribed; double check to make sure it is the same medication.
- Labels may also provide warnings about drug, food or drink interactions with the medication and activities and situations to avoid while using it. Ask your pharmacist to review the label to make sure you

QUESTIONS TO ASK YOUR DOCTOR

Here are some important questions to ask your healthcare provider so that you can successfully manage your medication plan.

- Why are you prescribing this medicine?
- What are both the brand and generic names of the medicine?
- How do you spell the name of that medicine?
- What does the medicine do and what is it for?
- What are the side effects?
- How and when do I take it? For how long? Are there refills?
- Where can I get this medication?
- What food, drink, other medicines, supplements and activities should I avoid while taking this medicine?
- Does this medication replace another one I'm currently taking?
- Should I continue taking other medications that were prescribed to me?
- What happens if I miss a dose?

take the medication exactly as the doctor prescribed.

- Check your prescription each time you get it filled. This can help make sure that you're getting the correct medication. If the medication looks different, ask your pharmacist to verify that it is correct. Sometimes manufacturers change a medication's appearance.
- Keep your medication in a safe place. Some medications need to be refrigerated, but most will not. For most medications, store them in a cool, dry place out of sunlight and out of reach of children and pets. Do not share your medications or take medications prescribed for others.

Tips for Success

- Fill your prescriptions on time; many pharmacies have automatic refill options to ensure you never run out.
- Take advantage of mail order prescriptions when you can to save trips to the pharmacy.
- Take the medication according to the label's instructions and make sure you understand when the medication should be taken.
- Keep your doctor informed about how you feel while taking the medication. **If you experience side effects, call your doctor. Never stop taking medication without your doctor's permission.**
- Find a system that will help you remember to take your medication. If you take multiple pills at different times throughout the day, it's easy to become confused. Pill boxes that divide medications by time, day and week are a great way to make sure you take the correct pill at the right time.

"I always start my day and in the bathroom, whether it's getting ready for the morning brushing my teeth and shaving or getting ready for bed at night. So I have learned that keeping my medicines also in a certain location in the bathroom helps me keep check and I am able to remember to take my medicine both in the morning and at night." – Deanna, Heart Patient

- Set a reminder or alarm on your mobile phone to remind you to take your medication every day at the same time. Some apps for mobile devices are made specifically for medication reminders.
- Make it a habit! It takes 21 days to create a habit, so don't give up. Place a note on your mirror, on your fridge or somewhere that you will look at each day.
- If you're traveling, pack all the medications you'll need for the trip and take a few extra doses in case you're delayed getting home. Keep your medication with you and never place it in a checked bag.
- Reach out to others who are managing medications and ask for their tips.
- In the forms section ([page 91](#)) you'll find a form to track your medications. Print the form and color in the box each time you take your medicine on time.
- Keep an up-to-date list of your medications to reference in case of an emergency, and tell a loved one where you keep the list.

Get Help Paying for Your Medicine

Heart medications can be expensive, which is a common reason many people don't take them as directed. If you're struggling to pay for your medication, talk to your doctor or pharmacist — they may be able to help you find a solution.

Health Insurance and Government Assistance

Under the Affordable Care Act (ACA), private health plans offered through the health insurance marketplace must cover the same set of 10 essential health benefits. Prescription drug coverage is one of them. Learn more at www.healthcare.gov.

For those who qualify for Medicare, the ACA reduced prescription drug costs available under the Medicare Part D program.

Learn more at www.medicare.gov.

Medicare beneficiaries may also qualify for the Extra Help program, which helps individuals pay for their Medicare prescription drug plan costs. Under this Social Security Administration program, qualifying beneficiaries may receive assistance worth up to \$4,000 per year. Learn more at <https://www.ssa.gov/benefits/medicare/prescriptionhelp/>.

Discounts and Assistance

Check to see if your supermarket or pharmacy offers discount cards or generic medications at a lower price than your health plan co-payment. Check the pharmacy's website and ask your doctor or pharmacist if you could benefit from discounts.

Here are some other websites that offer assistance:

NeedyMeds.org	This site offers information about private and government prescription assistance and provides a comprehensive database of free and low-cost prescription medicine programs, drug discounts, mobile phone apps and more.	www.needymeds.org
GoodRx.com	Among other tools, this site lets you compare prices for government-approved prescription drugs offered at most U.S. pharmacies.	www.goodrx.com
Patient Assistance Program	This program, a collaboration of many pharmaceutical companies, helps qualifying patients without prescription drug coverage search for and obtain medicines for free or nearly free.	www.patientassistanceprograms.org

<p>PAN Foundation</p>	<p>The PAN Foundation can assist you in affording certain medications. They receive grants from pharmaceutical companies to provide to patients. You can find out if you qualify online or by telephone.</p>	<p>www.panfoundation.org</p>
<p>Patient Assistance Programs (PAPs)</p>	<p>Pharmaceutical companies may cover some or all of a medication’s cost through its PAP. Learn more at the following websites. You can go directly to the pharmaceutical company’s site, or you can go to:</p>	<p>www.patientassistant-programs.org</p>
<p>RxAssist.org</p>	<p>This searchable database features programs offered by states and pharmaceutical companies to offset (or eliminate) the costs of medications for those who qualify. RxAssist.org also offers its own drug discount card for people who don’t have prescription insurance.</p>	<p>www.rxassist.org</p>

Common Medications for Treating Cardiovascular Disease

YOUR HEART ISSUES ARE UNIQUE TO YOU, AND ONLY YOUR HEALTH CARE TEAM knows which specific medications you need. However, most heart medications fall under certain broad categories. The table below describes the most common heart medications and their uses.

Anticoagulants	By reducing your blood's ability to clot, anticoagulants prevent blood clots from forming or prevent existing clots from getting larger.
ACE-Inhibitors and Angiotensin Receptor Blockers (ARBs)	These relax blood vessels, lower blood pressure and reduce heart stress by lowering the effects of a substance called angiotensin-II.
Antiplatelet Agents	These prevent clotting caused by sticky platelets in your blood and reduce the chance of heart attack and stroke caused by clots. They also help keep stents open.
Beta-Blockers	Used to lower blood pressure, fix abnormal heart beats (arrhythmias) and treat angina, these lessen the work your heart must do by, among other things, decreasing your heart rate and relaxing your blood vessels.
Calcium Channel Blockers	Often prescribed to treat high blood pressure, angina and coronary artery spasms, these reduce the flow of calcium into your heart muscle and blood vessels, lowering blood pressure and putting less strain on your heart. Some also decrease heart rate.
Digoxin	Typically prescribed to treat certain types of irregular heart rhythms or the symptoms of heart failure, this increases the heart's pumping function and slows the heart rate.

<p>Diuretics (“water pills”)</p>	<p>Used to treat high blood pressure or heart failure, these help your body remove excess fluid and salt buildup through increased urination.</p>
<p>Nitrates and Antianginal</p>	<p>These agents — of which nitrates are the most common — are used to prevent, reduce or relieve angina discomfort by relaxing blood vessels and increasing the flow of blood and oxygen to your heart.</p>
<p>PCSK9 Inhibitors</p>	<p>Your liver has cells which are responsible for sweeping away LDL or “bad” cholesterol. PCSK9 is a protein which is responsible for destroying these receptors. By blocking PCSK9, the PCSK9 inhibitors increase the ability of the liver to clear LDL and lower the concentration in the blood.</p>
<p>Statins</p>	<p>Statins lower cholesterol by blocking a substance your liver needs to make cholesterol.</p>

More Support Available

OUR MISSION AT MENDED Hearts is to make sure that you, as a patient or caregiver, are educated and supported on your journey. Our trained volunteers — who are patients, parents and caregivers themselves — make more than 200,000 visits each year to those in the hospital or in recovery. They lead support groups, help educate others and provide many other services to hospitals and cardiology offices. Our goal is to make sure that no one walks this journey alone; when you need us, we are there.

Here are ways that you can find the support you need:

Become a member. Membership in Mended Hearts is **FREE!** With your free membership you can access our member-only content, read our award-winning Heartbeat magazine online, receive our national e-newsletter and participate in other educational and support opportunities. If you choose to make a donation, your membership benefits increase. To become a member, sign up here: <https://mendedhearts.org/connect/member-enrollment/>

Local chapters. We have over 250 local community-based chapters across the country that host support group meetings, provide educational opportunities and engage heart patients and their families in community activities. Find contact information for our Mended Hearts chapters on our website here: <https://mendedhearts.org/connect/get-help/find-your-chapter/>

Telephone, email, text and video chat support through My Heart Visit®. Anyone can request a visit

from a trained volunteer by telephone, email, text or video chat. You can schedule a visit or simply call our Heartline hotline at 1-844-HEART87 (1-844-432-7887) to speak to someone. This is a great opportunity to share your feelings and ask trained patients and caregivers questions about living with heart disease. To connect with someone over the phone, call 1-844-HEART87 or email vistme@mendedhearts.org.

TAVR visiting. We have a specialized visiting program to meet the needs of TAVR (Transcatheter Aortic Valve Replacement) patients. These patients share a unique experience, so we connect them with trained volunteers who have had a TAVR themselves and therefore understand and can help. If you're considering having a TAVR, or you have had a TAVR procedure, get support by reaching out to TAVR@mendedhearts.org

Online support. Our online communities offer a network where participants can ask questions, share their journey and find support. Heart patients, caregivers and families are all welcome. To connect with us online visit <https://connect.mendedhearts.org/home>

Patient/parent matching. If you're the parent of a child with a congenital heart defect, you can receive support from someone who has a child with the same or a similar diagnosis as your child. We do our best to match by diagnosis and other needs when at all possible. To request a parent match, go online to <https://mendedhearts.org/request-support/>



Mended Hearts®



little
mended hearts®

Social media connections. We're on most social media channels and host a variety of public and private Facebook groups. To follow us and connect via social media you can visit us at:

- Mended Hearts Facebook: <https://www.facebook.com/mendedhearts/>
- Mended *Little* Hearts Facebook: <https://www.facebook.com/MendedLittleHeartsNationalOrganization/>
- Mended Hearts Twitter: @MendedHearts
- Mended *Little* Hearts Twitter: @MLH_CHD
- Mended Hearts Instagram: @Themendedhearts
- Mended *Little* Hearts Instagram: @mendedlittleheartsnational
- We also can be found on LinkedIn

Online Resources

For additional resources, please visit <https://mendedhearts.org/toolsresource/web-resources/>

A note about our support

Accredited visitors are volunteers who are trained on topics like active listening, privacy and confidentiality, diversity sensitivity and on our "Rules of Conduct" (no giving medical advice, no comparing hospitals or medical professionals, being positive and supportive, referring patients to their healthcare team for medical questions, etc.). All visitors must be accredited before providing support and must be reaccredited every year.

Appendix



Glossary

Ablation	A procedure to cure irregular heartbeats (arrhythmia) using a catheter placed within a beating heart that creates a small scar using an energy source to stop the arrhythmia.
Acute MI	Acute myocardial infarction, or heart attack
AFib (AF)	Atrial fibrillation, or when the upper chambers beat much faster than the lower heart chambers in an irregular and rapid fashion that places a patient at risk of stroke.
Angina	Pain or discomfort that occurs when your heart does not get enough oxygen; angina is usually a symptom of a heart problem known as coronary artery disease (CAD) or coronary heart disease (CHD).
Angiogram	An image of artery blood vessels that can be seen after the patient receives an injection of dye to outline the vessels.
Aorta	The main artery of the body, supplying oxygenated blood to the circulatory system. In most humans it passes over the heart from the left ventricle and runs down in front of the backbone.
Aortic valve	The aortic valve is a valve in the heart between the left ventricle and the aorta. A normal aortic valve has three leaflets, but some individuals are born with a bicuspid aortic valve, meaning there are only two leaflets in the valve.
Arrhythmia	Erratic heartbeats or a problem with the rhythm or rate of the heartbeat. The rhythm might be too fast, too slow or irregular.
Atherosclerosis	The buildup of waxy plaque inside the artery walls that restricts blood flow.
ASD	An atrial septal defect (ASD) is a hole in the wall (septum) between the two upper chambers of the heart (atria). The condition is present at birth (congenital).

Atria	Each of the two upper cavities of the heart from which blood is passed to the ventricles. The right atrium receives deoxygenated blood from the veins of the body; the left atrium receives oxygenated blood from the pulmonary vein.
Balloon valve repair	A balloon valvuloplasty is a less-invasive valve repair for stenosis. A surgeon inserts a catheter with a balloon at its tip through a blood vessel to the faulty valve in the heart and the doctor inflates the balloon to widen the valve's opening.
Bradycardia	This refers to an abnormally slow heartbeat.
Bicuspid aortic valve	A bicuspid aortic valve (BAV) is an aortic valve that only has two leaflets, instead of three.
CABG	Coronary artery bypass graft (bypass surgery, a type of open-heart surgery).
CAD	Coronary artery disease (see arteriosclerosis and atherosclerosis).
Cardiac amyloidosis	Cardiac amyloidosis is a disorder caused by deposits of an abnormal protein (amyloid) in the heart tissue. These deposits make it hard for the heart to work properly.
Cardiac arrest	Sudden stoppage of the heart pumping function, due to a very irregular heartbeat that is often caused by a heart attack.
Cardiac catheterization	A diagnostic procedure to gather information about potential heart artery blockages, heart pumping functions or problems with the heart valves (a left heart catheterization involves a coronary artery angiogram; see angiogram).
Cardiac CT	Cardiac CT is a cardiac computerized tomography where detailed images of the heart and its blood vessels are taken and stacked to create a three-dimensional picture of the heart.
Cardiomyopathy	A disease involving changes in the heart muscle that can lead to heart failure, arrhythmias and other heart problems.
Cardioversion	Electrical shock to the heart to restore normal heart rhythm

Cardiac rehab	Cardiac rehabilitation (or rehab) is a medically supervised program designed to improve your cardiovascular health after a heart attack, heart failure, angioplasty or heart surgery.
CHF	This stands for congestive heart failure, which is when the heart fails to pump blood properly, causing fluid to build up around the heart and in the lungs.
Cholesterol	Cholesterol is a waxy substance found in your blood. Your body needs cholesterol to build healthy cells, but high levels of cholesterol can increase your risk of heart disease.
Congenital heart defect (CHD)	A congenital heart defect is a problem with the structure of the heart that is present at birth.
CVD	This stands for cardiovascular disease, which affects the heart structure and/or blood vessels.
Deep vein thrombosis	Also referred to as DVT, this occurs when blood clots form in a vein deep inside your body, usually in the leg.
Defibrillator	This is a device that recognizes an abnormal heart rhythm and restores normal heart rhythm by delivering an electrical shock to the heart. An ICD (see below) is implanted in the body. An AED is a portable device that can be used by others to help someone having a severe heart rhythm problem.
Echocardiogram	Echocardiogram uses sound waves (ultrasound) to generate moving images to assess the chambers and valves of your heart.
EKG	Electrocardiogram (also known as ECG) is a painless test that uses electrodes placed on the skin to record the heart's rhythm (electrical activity).
Endocarditis	Endocarditis is a bacterial infection of one or more of the heart valves.
Fibrillation	Fibrillation is the rapid, irregular and unsynchronized contraction of muscle fibers within the upper or lower or both chambers of the heart.

FH	FH stands for familial hypercholesterolemia, a common life-threatening genetic condition that causes high cholesterol. Untreated, FH leads to early heart attacks and heart disease
HDL	HDL stands for high-density lipoproteins. It is sometimes called the “good” cholesterol because it carries cholesterol from other parts of your body back to your liver.
HF	Heart failure (HF) is when the heart can’t pump enough blood to meet the body’s needs.
HFpEF	Heart failure with preserved ejection fraction (HFpEF), also referred to as diastolic heart failure, has the same signs and symptoms of heart failure, but the ejection fraction is preserved, or normal (greater than 50%).
HFrEF	Reduced ejection fraction (HFrEF), also referred to as systolic heart failure, is when the heart muscle doesn’t contract, or squeeze, effectively so less oxygen-rich blood is pumped to the body and the ejection fraction is reduced (lower than normal).
ICD	An implantable cardioverter defibrillator (ICD) is a device that is implanted in the body to recognize and correct certain types of life-threatening heart rhythms.
LDL	LDL stands for low-density lipoproteins. It is sometimes called the “bad” cholesterol because a high LDL level leads to a buildup of cholesterol in your arteries.
Low EF	Low ejection fraction refers to an insufficient amount of blood pumping out of the heart’s ventricle, usually below 45%.
LVAD	An LVAD, or left ventricular assist device, is a mechanical device placed inside or outside the body that “assists” the heart to pump oxygen-rich blood from the left ventricle to the body.
MI	This stands for myocardial infarction, which is another term for heart attack.

Mitral valve	The mitral valve, also known as the bicuspid valve or left atrioventricular valve, is a valve with two flaps in the heart located between the left atrium and the left ventricle.
MRI	MRI, or magnetic resonance imaging, is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body. MRI scanners use strong magnetic fields, magnetic field gradients and radio waves to generate images of the organs in the body.
Pacemaker	A surgically implanted device that helps the heart in maintaining normal rhythm.
PAD	PAD is also known as peripheral arterial disease or peripheral vascular disease (which includes both arteries and veins). PAD affects the blood vessels causing them to narrow, therefore restricting the blood flow to the arms, kidneys, stomach and, most commonly, the legs.
Palpitations	Palpitations are unpleasant sensations of irregular and/or forceful or fast beating of the heart.
PCI	Percutaneous coronary intervention (PCI) is a nonsurgical procedure that relieves narrowing and obstruction of the arteries going to the muscle of the heart, usually by placing a coronary artery stent.
Pericarditis	This refers to inflammation of the outer membranes and sac around the heart.
PCSK9i	PCSK9 inhibitors are a new class of drugs that lower LDL (“bad”) cholesterol.
Prolapse	This refers to the drooping down or abnormal bulging of the mitral valve’s leaflets backward into the heart’s atrium when the heart is contracting.
PSVT	Paroxysmal supraventricular tachycardia (PSVT) refers to episodes of rapid heart rate that starts in a part of the heart above the ventricles. (“Paroxysmal” means from time to time.)

Pulmonary embolism (PE)	Pulmonary embolism is a blockage in one of the pulmonary arteries in your lungs. In most cases, pulmonary embolism is caused by blood clots that travel to the lungs from deep veins in the legs or, rarely, from veins in other parts of the body (deep vein thrombosis).
Pulmonary valve	The pulmonary valve, sometimes referred to as the pulmonic valve, is the valve of the heart located between the right ventricle and the pulmonary artery. It has three leaflets.
Restenosis	This is when an artery or valve narrows again after it has been corrected.
SCA	Sudden cardiac arrest (SCA) is when the heart abruptly stops beating.
Sinus rhythm	Sinus rhythm is the normal regular rhythm of the heart set by the natural pace-maker of the heart called the sinus node.
Statin	Statins are a class of drugs often prescribed by doctors to help lower cholesterol levels in the blood. Lowering the levels helps prevent heart attacks and stroke.
Stent	A stent is a medical device made of expandable metal mesh that is inserted into a coronary artery, via a catheter, to hold the artery open.
Stenosis	Stenosis is the term for a valve that is narrowed and doesn't open properly. The flaps of a valve may thicken, stiffen or fuse together, preventing the valve from opening fully.
Stroke	A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or the blood vessel bursts or ruptures. This prevents part of the brain from getting the blood and oxygen it needs, which results in brain cells dying.
Tachycardia	A very rapid and often uncontrolled heartbeat.
TAVR	Transcatheter aortic valve replacement (TAVR) is a procedure that allows for the aortic valve to be replaced via a cardiac catheterization instead of open-heart surgery.

TEE	Transesophageal echocardiogram (TEE) is a diagnostic test that uses ultrasound waves to make images of the heart chambers, valves and surrounding structures. This test is done through the esophagus.
TMVR	Transcatheter mitral valve replacement (TMVR) is a procedure that allows for the mitral valve to be replaced via cardiac catheterization rather than through open-heart surgery.
Tricuspid valve	The tricuspid valve is one of the two main valves on the right side of your heart. Normally, the tricuspid valve has three leaflets that open and close, allowing blood to flow from the right atrium to the right ventricle in your heart and preventing blood from flowing backward.
Triglycerides	Triglycerides are a type of fat (lipid) found in your blood. When you eat, your body converts any calories it doesn't need right away into triglycerides. The triglycerides are stored in your fat cells. Later, hormones release triglycerides for energy between meals.
Valve	The heart has four valves – the aortic, mitral, tricuspid and pulmonary valves. Like valves used in house plumbing, the heart valves open to pump blood forward and then close to prevent fluid from flowing backward.
Ventricle	The two lower chambers of the heart. The right ventricle receives blood from the right atrium and pumps it into the lungs via the pulmonary artery, and the left ventricle receives blood from the left atrium and pumps it into the body via the aorta.
VSD	A ventricular septal defect, or VSD, is a hole in the wall (septum) separating the ventricles of the heart. VSD is the most common type of heart problem present at birth (congenital heart disease).

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Mended Hearts®

About My Heart

NAME: _____ DATE: _____

HEART CONDITION(S): _____

TREATMENT PLAN: _____

DOCTOR(S) AND/OR HEALTHCARE PROVIDERS:

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

SURGERIES AND/OR PROCEDURES (if any): _____

MEDICATION(S):

MEDICATION NAME: _____ DATE PRESCRIBED: _____

MEDICATION NAME: _____ DATE PRESCRIBED: _____

MEDICATION NAME: _____ DATE PRESCRIBED: _____

MEDICATION NAME: _____ DATE PRESCRIBED: _____

HOSPITAL (if any): _____

PHARMACY: _____ PHONE: _____

WHO DO I CONTACT IF I HAVE QUESTIONS OR CONCERNS?

NAME: _____ PHONE: _____

EMAIL: _____



My Healthy Heart Tracker

Color in each square when you reach your healthy habit goal for that day. There is also a blank column for you to add your own goal.

Month	 Water	 Movement	 Blood Pressure	 Healthy Eating	 No Smoking	 Take Medication	
1.							
2.							
3.							
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							
24.							

REFLECTIONS: _____



Appointment Tracker

This form will help you keep track of appointments.

DOCTOR(S) AND/OR HEALTHCARE PROVIDERS:

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

NAME: _____ PHONE: _____

WHO DO I CONTACT IF I HAVE QUESTIONS OR CONCERNS?

NAME: _____ PHONE: _____

EMAIL: _____

Date	Time	Appointment With	How I Am Getting There	Purpose of Appointment	Questions to Ask



Medication Tracker

Write in the time you take your medication if you choose. Mark in each square when you have taken this medication. Keep this form handy so you can keep track. Use a separate form for each medication. A small folder or binder may help if you have many medications.

MEDICATION NAME: _____

GENERIC NAME (if any): _____

THIS MEDICATION IS FOR: _____

POSSIBLE SIDE EFFECTS: _____

WHO DO I CONTACT IF I HAVE QUESTIONS OR CONCERNS?

NAME: _____ PHONE: _____

EMAIL: _____

PHARMACY: _____ PHONE: _____

REFILL ON (date): _____

Month	AM	Midday	After-noon	PM	Other	Comments (side effects, questions, concerns, helpful hints, etc.)
1.						
2.						
3.						
4.						
5.						
6.						
7.						
8.						
9.						
10.						
11.						
12.						



About Us

WELCOME TO MENDED Hearts®, Mended *Little* Hearts® and Young Mended Hearts™!

The Mended Hearts, Inc. is the nation’s largest nonprofit cardiovascular support organization for heart patients of all ages and their families, and we are here to support you.

In 1951 in Boston, Massachusetts, four post-heart surgery patients — at the suggestion of the father of heart surgery, Dr. Dwight E. Harken — began sharing their experiences with each other. The patients found hope and healing in sharing their experiences. They said, “It’s great to be alive!” Dr. Harken added, “...and to help others.” This small group called themselves “The Mended Hearts,” and from that humble beginning, a worldwide caring support network began.

The Mended *Little* Hearts program

began in 2004 to support the “littlest heart patients of all” and their families and has become the nation’s largest congenital heart disease support program. Mended *Little* Hearts fills a unique need of providing support and education to those affected by congenital heart disease/defects, the nation’s number one birth defect, affecting one in 110 babies, or 40,000 annually. Mended *Little* Hearts’ motto is “*Little hearts hold big hopes*™.”

Young Mended Hearts is our newest program. Formed in 2021, this program supports young adults (18-55) either born with congenital heart defect or who have been diagnosed with heart disease and their unique needs. This program helps adults with heart defects or heart disease by providing education, support, and advocacy.

Today, Mended Hearts directly serves more than 380,000 patients, caregivers and families annually!

Mission Statement®

To inspire hope and improve the quality of life of heart patients and their families through ongoing peer-to-peer support, education, and advocacy.

Vision Statement®

To be the premier nationwide resource and peer-to-peer support network for all heart patients and families affected by heart disease across the lifespan.

Support Statement®

To support heart patients and their families by creating an inclusive and compassionate community through meaningful connections so no one feels alone.

Education Statement®

To empower heart patients and their families by providing relevant education and resources that enable them to make better decisions about their healthcare.

Advocacy Statement®

To energize and engage heart patients and their families through advocacy, enabling them to make informed decisions that improve their quality of life.

About Mended Hearts®

- Mended Hearts is the world's largest peer-to-peer support program for all heart patients and their caregivers across the lifespan. We support, educate and advocate for you and with you.
- Mended Hearts has been offering hope and support since 1951 making it the second oldest peer-to-peer support organization after Alcoholics Anonymous (1934).



- Mended Hearts volunteers conduct more than 200,000 patient and family visits each year!
- Mended Hearts has over 70,000 members in all 50 states in North America and serves more than 300 hospitals. Mended Hearts now has international members in over a dozen countries, as well.
- Mended Hearts and Mended *Little* Hearts® have more than 250 chapters in North America.

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It's great to be alive
and help others!

About Mended *Little Hearts*®

- The Mended *Little Hearts* (MLH) Program was started in 2004 to address the unique needs of families with children who have congenital heart defects/disease (CHD). Since then, Mended *Little Hearts* has been providing families with hope, support, and connection so they never have to go through their journey with CHD alone.
- MLH has more than 120,000 Followers and Likes on its local and national social media venues.
- MLH's Rock Your Scar® campaign (featured in Times Square in 2020 and 2021) is the nation's largest CHD Awareness Campaign designed to empower children and adults to show how they embrace their CHD rather than being defined by it.
- Our Bravery Bag Program provides needed items for children and families in the hospital. It is more than just a bag; it's a lifeline.
- The Remember Our Hearts campaign highlights the importance of remembering ALL children and adults with CHD, even those gone too soon.



Little hearts hold big hopes.™

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SCAN ME