

Heart Failure

A Guide for Patients and Their Families



FRANKEL CARDIOVASCULAR CENTER
UNIVERSITY OF MICHIGAN HEALTH SYSTEM

Welcome to Michigan Medicine

The University of Michigan Frankel Cardiovascular Center offers multidisciplinary care for all stages of heart failure. Our providers have broad expertise in evaluating and managing patients with weakened heart muscles. The Frankel Cardiovascular Center also offers expert medical management, access to advanced surgical care, a range of heart-assisting technology, and comprehensive rehabilitation programs. Our Heart Failure Program is the only accredited heart failure disease management program in the state. The Center is also the national leader in circulatory support and heart transplantation.

All of the faculty and staff at the Samuel and Jean Frankel Cardiovascular Center are committed to ensuring your care is patient and family centered. You are a valued patient and a very important member of your health care team. We understand you and your family will have questions and concerns about your diagnosis and treatment. This booklet is designed to answer many of them. However, we encourage you to ask for further information or assistance at any time.



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What is Heart Failure?

The term "heart failure" makes it sound like your heart is no longer working or stopped. Actually, heart failure means your heart isn't pumping or relaxing as well as it should be. While heart failure is a serious condition, people often live very fulfilling lives with medications and other treatments their doctor recommends.

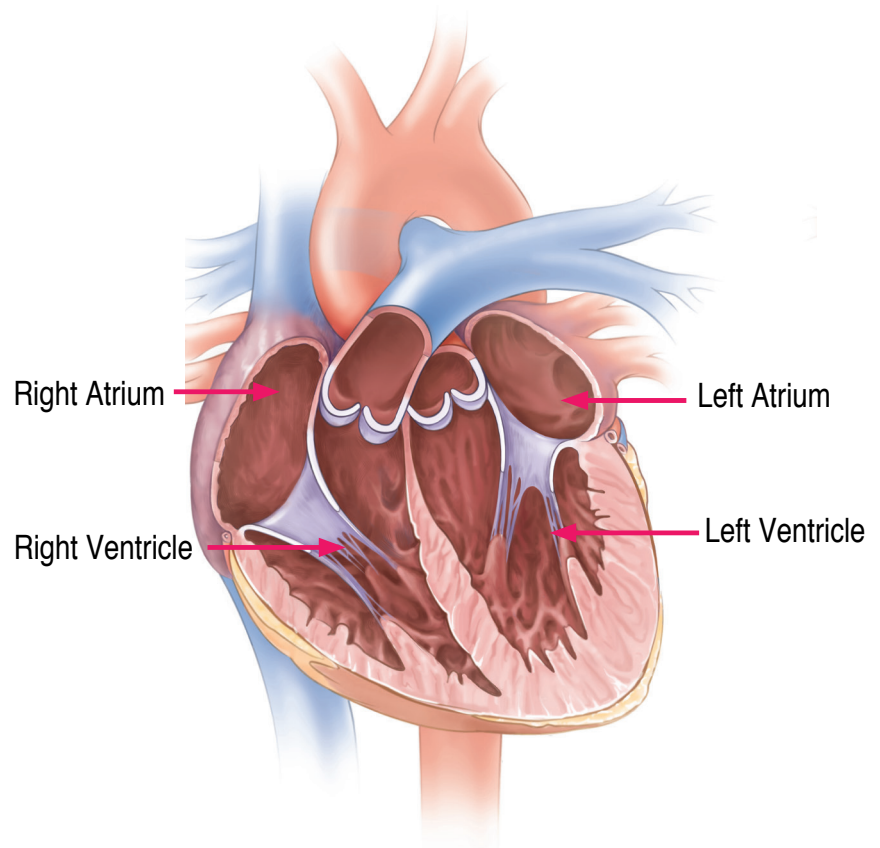
How does a normal healthy heart work?

A normal healthy heart is a strong, muscular pump about the size of your fist, located slightly to the left and behind your breastbone. Its function is to pump blood throughout your body. The right side of the heart receives blood from the body and pumps blood to the lungs to pick up oxygen. The left side of the heart receives the oxygen-rich blood from the lungs and pumps it to the body.

The heart has four chambers,
two on the right and two on the left:

- The two upper chambers are called **atria** (left atrium and right atrium)
- The two lower chambers are called **ventricles** (left ventricle and right ventricle)

Normal Heart



What is Ejection Fraction (EF)?

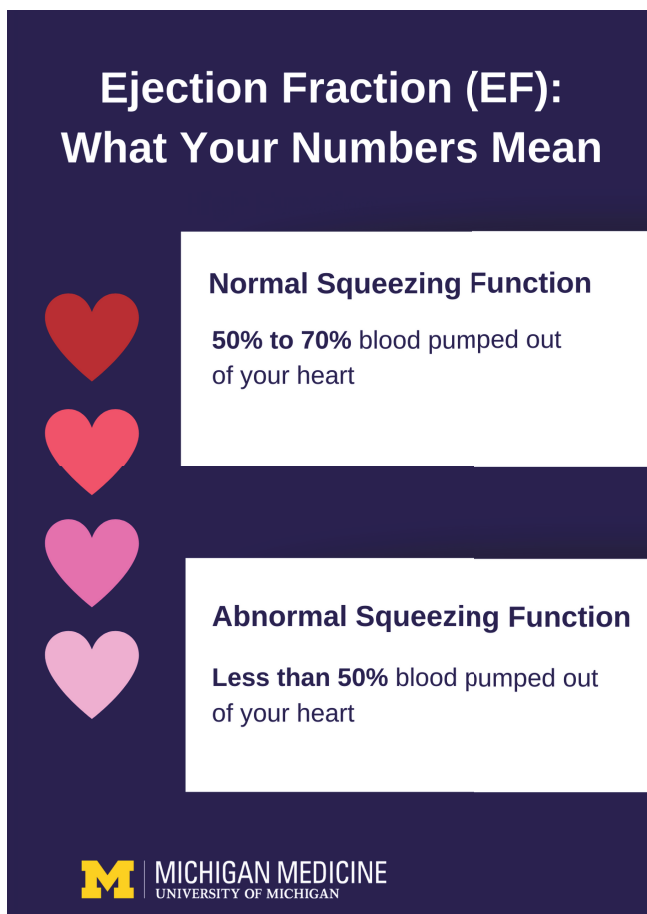
With each heartbeat, the two pumping chambers (left and right ventricles) of your heart fill with blood then squeeze the blood out. The ejection fraction (EF) refers to the amount of blood your heart squeezes (ejects) with each beat. In other words, the chamber fills with blood and pumps a portion (the EF) of that blood out of the heart. The ejection fraction is expressed as a percentage.

A normal heart squeezes out a half to three quarters (50 to 70%) of the blood that enters it. Thus an EF of 50-70% is considered normal.

This percentage (EF) of the left ventricle helps your doctor determine what type of heart failure you have.

- Heart failure with preserved EF (HFpEF) is a filling problem → Normal EF
- Heart failure with reduced EF (HFrEF) is a squeezing problem → Low EF

A normal heart squeezes out between 50 to 70% of the blood that enters it.



**Ejection Fraction (EF):
What Your Numbers Mean**

Normal Squeezing Function
50% to 70% blood pumped out of your heart

Abnormal Squeezing Function
Less than 50% blood pumped out of your heart

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What is Heart Failure?

Heart failure is a chronic, progressive condition in which the heart muscle is unable to meet the body's needs for blood and oxygen.

The volume of blood pumped by the heart is determined by:

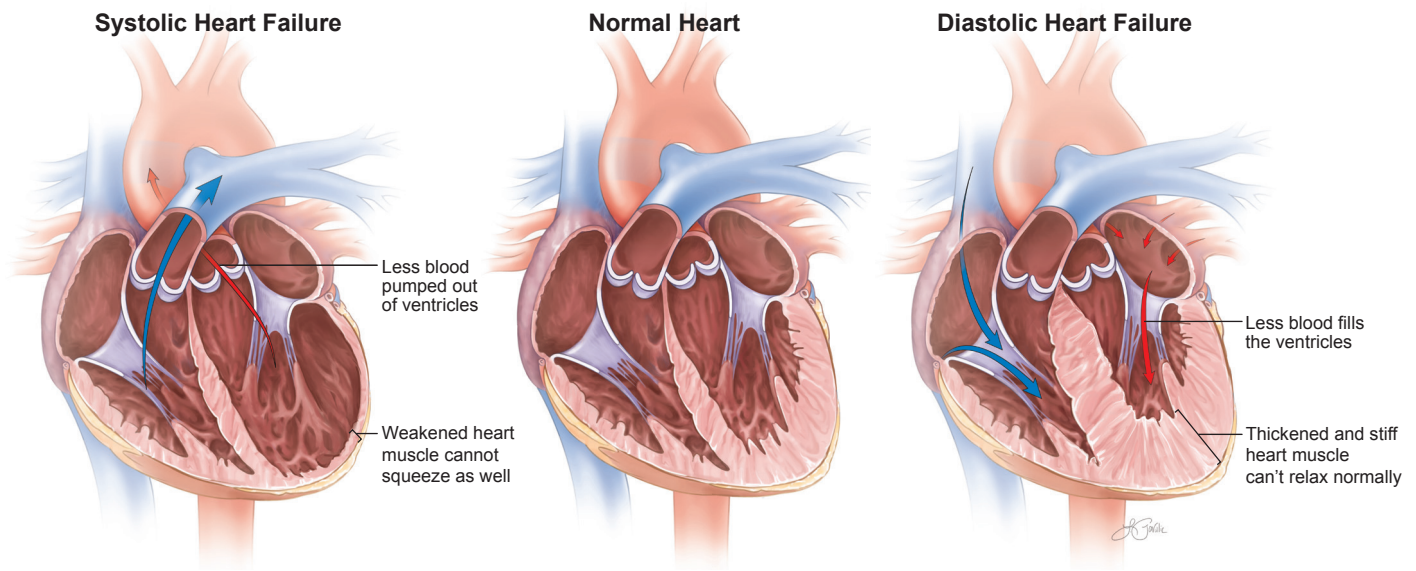
- The contraction of the heart muscle — how well the heart squeezes
- The filling of the heart chambers — how well the heart relaxes and fills with blood

We classify heart failure based on which of these two functions is abnormal.

People with heart failure often live very fulfilling lives with medications and other treatments recommended by their doctor.



Left-Sided Heart Failure Definitions



Heart failure with preserved ejection fraction (HFpEF; previously called diastolic heart failure):

The heart muscle squeezes normally but loses its ability to fill normally because the muscle has become stiff. This limits the amount of blood that can be pumped to the body at rest or with exercise.

Heart failure with reduced ejection fraction (HFrEF; also called systolic heart failure):

The heart muscle does not squeeze effectively and less blood is pumped to the body.

Did you know ?

Congestive heart failure is a term that is often used interchangeably with heart failure. The term “congestive” refers to fluid that congests your heart, lungs and veins causing swelling and shortness of breath.

Left-sided Heart Failure

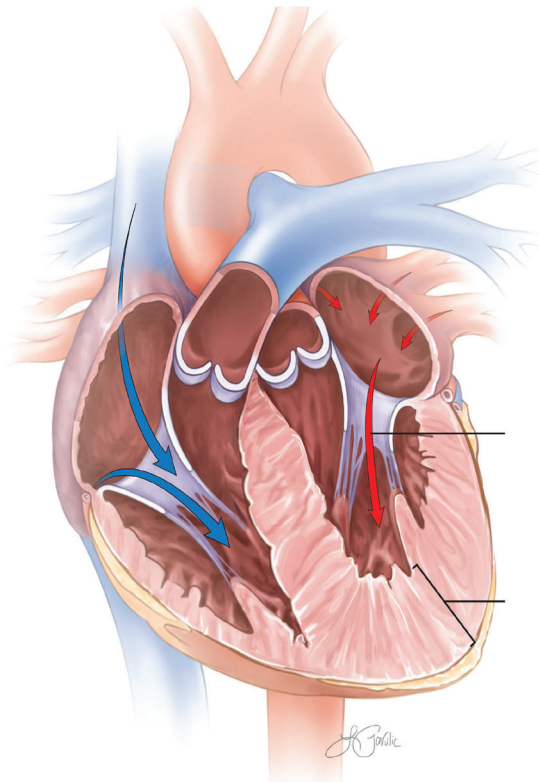
The heart can't pump blood to the rest of the body

Preserved Ejection Fraction

(*HFpEF*)

A "filling problem"

The heart does not fill back up with blood properly.



Ejection Fraction (EF)

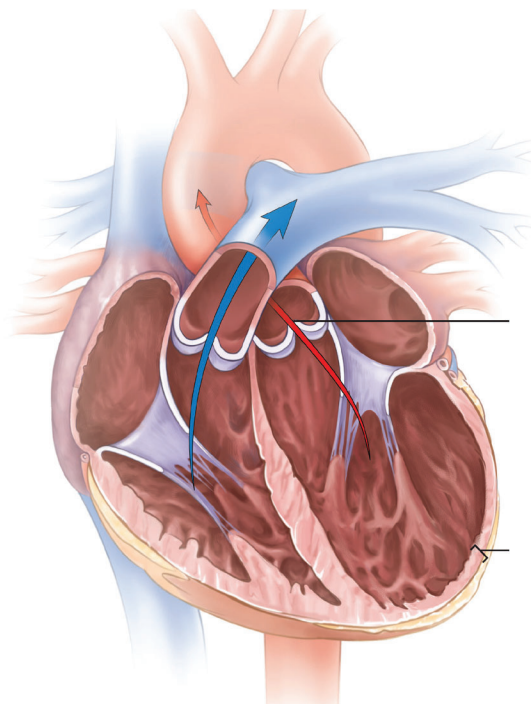
Normal
The EF is normal

Reduced Ejection Fraction

(*HFrEF*)

A "squeezing problem"

The heart does not pump blood the way it should.



Low
The EF is low

What causes heart failure?

A number of health conditions can weaken or stiffen your heart causing heart failure. The following medical conditions may lead to heart failure:

- Blockages in the heart's arteries (coronary artery disease)
- High blood pressure
- Heart attack (myocardial infarction)
- Abnormal heart rhythm (atrial fibrillation)
- Abnormal heart valves
- Heart muscle disease (cardiomyopathy) or inflammation (myocarditis)
- Heart defects present at birth (congenital heart disease)
- Severe lung disease
- Diabetes
- Obesity
- Sleep Apnea

What are the symptoms of heart failure?

The effects of heart failure can be felt throughout your body.

Typical signs of heart failure include:

- Swelling in the ankles, feet, legs or belly
- Extreme tiredness (fatigue that limits your activity)
- Shortness of breath with activity or at rest
- Shortness of breath when you lie flat
- Persistent coughing or wheezing
- Feeling lightheaded
- High or irregular heartbeat
- Lack of appetite or nausea
- Unexplained weight gain

How is heart failure diagnosed?

To diagnose heart failure, your doctor will ask you questions about your symptoms and medical history. Your doctor will also complete a full physical examination.

To help determine the cause and severity of your heart failure, your doctor may order one or more of the following tests:

Chest x-ray

Chest x-ray- takes a picture to check the size of your heart and see if there is extra fluid in and around your lungs.

What will happen?

When you have a chest x-ray, you will be asked to sit or stand in different positions while holding your breath so that a picture can be taken.

Blood tests

Blood tests- will be ordered to check your kidney and liver function, sodium and potassium levels, blood count and other measurements. Blood tests used to specifically diagnose and monitor heart failure include **BNP** (B-type natriuretic peptides) and **NT-proBNP** (N-terminal pro-B-type natriuretic peptides). These are hormones released into the blood in people with heart failure.

What will happen?

A technician will take samples of your blood. Your doctor will use the results of your blood work to select and adjust treatments for your heart failure. Blood tests often are repeated to check for changes over time.

Echocardiogram (Echo)

Echocardiogram (Echo) – is a test that uses sound waves (ultrasound) to create images of your heart. It is a test used to measure ejection fraction (EF) and check valve function.

What will happen?

A technician puts gel on your chest to help the sound waves pass through your skin. The ultrasound probe is moved across your chest. The probe produces sound waves that bounce off your heart and “echo” back to the probe. These waves are changed into images of your heart.

This test helps your doctor find out:

- The size and shape of your heart
- How your heart squeezes and fills
- If your heart valves are working correctly

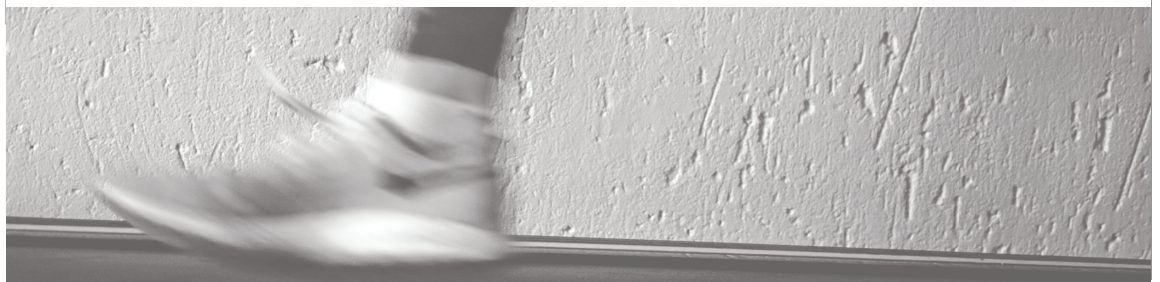
This test is non-invasive and may require you to position your body in certain ways to maximize image quality.

Treadmill Exercise Stress Test

Treadmill Exercise Stress Test- this test is used to measure the effect of exercise on your heart and how well your heart pumps blood during exercise.

What will happen?

This test involves walking on a treadmill while electrodes monitor your heart rate and rhythm. The walk starts off slowly, then the speed and incline increase at set times. You walk as long as you can or until you reach a target heart rate.



Radionuclide ventriculography or nuclear scan (MUGA)

Radionuclide ventriculography or nuclear scan (MUGA)- this test measures the heart's pumping ability.

What will happen?

- A nurse puts an intravenous line (IV) in a vein in your arm. A small amount of radioactive substance called a tracer is injected into the vein.
- You will be brought in to the scanner room. You lie on a table while a special camera is positioned over your chest to take images of your heart.
- The special camera, called a gamma camera, detects the small amounts of radiation release by the tracer to produce computer-generated movie images of your beating heart.

Right heart catheterization

Cardiac catheterization- is done to check how well your heart is working.

This test helps your Doctor:

- Assess the severity of your heart failure.
- Check the pumping function of your heart.
- Evaluate the pressure in each chamber of your heart.

What will happen?

- A thin hollow tube, called a catheter, is placed into a blood vessel and, using an X-ray machine, passed into your heart.
- Once the catheter is in place, several tests may be done to evaluate your heart function.

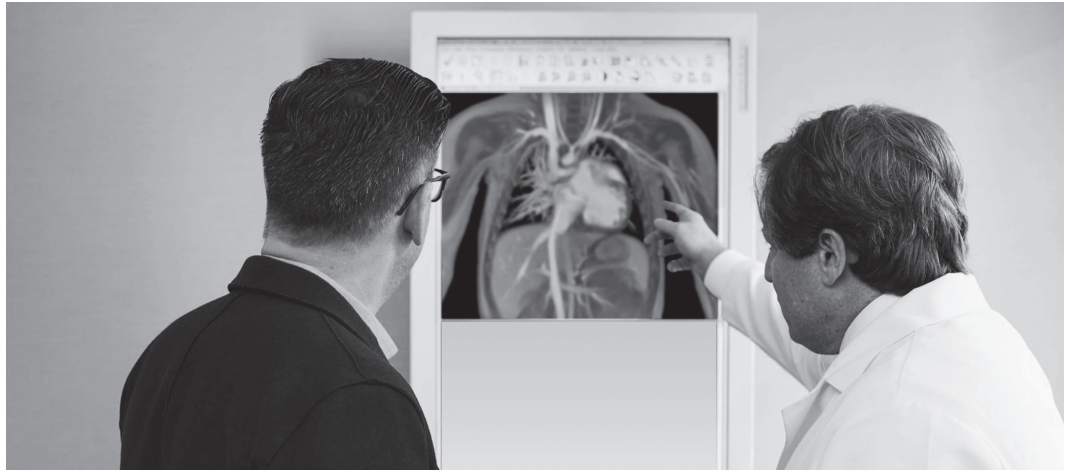
Cardiac Magnetic Resonance Imaging (MRI)

Cardiac Magnetic Resonance Imaging (MRI)

MRI provides detailed pictures of the heart and vessels. It also reveals how well your heart is functioning.

What will happen?

- The machine looks like a long metal tube. You lie down on a movable table that slides into the opening of the tube.
- There will be a technologist who monitors you from another room. You can talk with this person by microphone. During the MRI scan, the magnet produces repetitive tapping, thumping and other noises. Earplugs or music may be provided to help block the noise.
- In some cases, a contrast material may be injected through an intravenous (IV) line into a vein in your hand or arm to allow your doctor to see parts of your body more clearly.
- You must hold very still because movement can blur the test results.



What happens after I have been diagnosed with heart failure?

After your diagnosis is confirmed, your doctor will classify, or rank, your heart failure based on the severity of your symptoms. At Michigan Medicine we use the New York Heart Association (NYHA) Functional Classification system. It places patients in one of four categories based on how much they are limited during physical activity. These classes may change as you undergo treatment.

To learn more about the NYHA Functional classification categories visit the American Heart Association website at:

<https://www.heart.org/en/health-topics/heart-failure/what-is-heart-failure/classes-of-heart-failure>

Notes

My heart failure is caused by:

What is my ejection fraction?

Commonly Prescribed Medications for Heart Failure



Hear failure patients will need to take some combination of medications for life. The types and amounts of medications may change over time, but all patients will need an ongoing medication schedule. This section will provide an overview of medications and what heart failure patients may expect. You will have an individualized medication plan. If you have any questions about your medications, please discuss them with your provider.

How do medications help treat heart failure?

The use of medication to treat heart failure has several purposes:

- Protects your heart from stress hormones that can damage the heart
- Helps improve the heart's pumping action
- Reduces how hard the heart muscle has to work
- Helps the body remove extra fluid and sodium

These medications help people with heart failure improve their symptoms, reduce the need for hospital stays and live a longer life.

Medication tips to achieve success:

1. Do not miss doses
2. Refill medications early
3. Check weight and blood pressure daily, if directed by your provider
4. Contact your provider with questions

What medications are commonly used to treat heart failure and why do I need to take so many?

A combination of medications is often used to treat heart failure. The type of medication your doctor will recommend depends on the type of heart failure you have and how severe your symptoms are. The following section summarizes the most commonly prescribed heart failure medications.

These medications can be put into two different classes:

Medication class 1: Medications that improve your chances of living longer and reduce your risk of being hospitalized

When your heart is weak, stress hormones are released in the body that can further damage the heart. These medications reduce symptoms of heart failure and improve heart function.

Type of medication	Medication name	Common side effects
Beta-Blockers	Metoprolol, Carvedilol, Bisoprolol	<ul style="list-style-type: none"> • Fatigue • Dizziness • Wheezing • Increased shortness of breath • Sexual dysfunction
Angiotensin-Converting Enzyme Inhibitors (ACE)	Lisinopril, Enalapril, Ramipril	<ul style="list-style-type: none"> • Cough (ACE only) • High potassium
Angiotensin receptor blockers (ARBs)	Losartan, Valsartan	<ul style="list-style-type: none"> • Worsening kidney function • Dizziness
Angiotensin Receptor Nephilysin Inhibitors (ARNIs)	Sacubitril-Valsartan	<ul style="list-style-type: none"> • Swelling in lips or throat (angioedema) <p>You cannot use these if planning a pregnancy!</p>
Aldosterone Antagonists	Spironolactone, Eplerenone	<ul style="list-style-type: none"> • High potassium • Breast tenderness (Spironolactone only)
SGLT-2 Inhibitors	Dapagliflozin (Farxiga®), Empagliflozin (Jardiance®)	<ul style="list-style-type: none"> • Urinary tract infections • Worsened kidney function • Slow healing of foot & leg wounds
Hydralazine and Isosorbide Dinitrate	Hydralazine Isosorbide Dinitrate	<ul style="list-style-type: none"> • Light headedness • Headache

Your doctor will prescribe medications from all categories listed in this table until you reach doses that have been shown to offer the best benefit for your heart.

For example, your team may start you on Entresto 24/26mg twice daily. Over several weeks, the goal is to gradually increase the dose to find the ideal dose for you. Your provider will increase doses **even if you feel well** because of the long-term benefits they offer your heart. To find the right balance, your provider may need to make adjustments to your dose. They will adjust your medication doses based on your:

- Blood pressure
- Heart rate
- Lab values (blood tests)
- Side effects

To help your care team monitor your health status, you will be required to:

- Keep a log of daily blood pressure, pulse, and weight measurements
- Complete all blood tests
 - You will have frequent lab work ordered for the first few months after you are diagnosed and with medication changes: every 1-2 weeks or more frequently based on your health status.
- Communicate frequently with your providers

Some of these medications lower blood pressure. We will increase these medications even if your blood pressure is “normal” as this can **strengthen the heart** which prevents blood pressure from decreasing.

Medication class 2: Diuretics (also called “water pills”)

When you have heart failure, your body may hold extra fluid. To remove this extra fluid, you may be prescribed diuretics. **Diuretics**, also called “water pills”, help your body remove extra fluid by making you urinate. Decreasing the amount of extra fluid in your body will help improve your heart failure symptoms including: shortness of breath and swelling in your ankles, feet, or belly (abdomen). Unlike the medications listed above, diuretics do not strengthen your heart but they are very helpful in improving your symptoms.

You may be prescribed diuretics from one or both of the following categories:

Type of medication:	Medication name:	Common side effects
Loop Diuretics	Furosemide, Bumetanide, Torsemide	<ul style="list-style-type: none"> • Low potassium • Muscle cramps • Dizziness
Thiazide Diuretics	Hydrochlorothiazide, Metolazone	

What are my responsibilities when taking a diuretic?

- Take your diuretic at the same time each day.
- **Do not** take your diuretic before going to bed as this may cause you to get up at night to urinate. To avoid this, try to take your diuretic before **6pm**.
- If you take your diuretic twice a day, take your first dose in the morning and take the second dose 6 to 8 hours later.
- **Do not** skip your diuretic when you are away from home. If needed, adjust your dosing around your trip. You can take your diuretic earlier or wait until after you return home.
- Weigh yourself daily and record on your log.

Potassium and magnesium (also called electrolytes) are often prescribed when you are taking diuretics. They replace the electrolytes you lose because of the water pills. Examples of these supplements include:

Type of supplement:	Supplement name:	Common side effects
Potassium Supplements	K-Dur®, K-Lyte®, K-Lor®	<ul style="list-style-type: none"> • Nausea • Vomiting • Diarrhea • Abdominal discomfort
Magnesium Supplements	Mag-Ox®, Maox®, Uro-Mag®	

Other medications that might be prescribed

Your doctor may also prescribe other medications depending on your symptoms and additional health problems.

These medications include:

Type of medication	Medication name	Common side effects
Cardiac glycoside	Digoxin	Excessive amounts may cause <ul style="list-style-type: none">• Nausea or vomiting• Blurred or colored vision• Abnormal heart rhythm
I _f channel blocker	Ivabradine (Corlanor®)	<ul style="list-style-type: none">• Low heart rate• Flashes of bright colors that may appear in your field of vision
Soluble Guanylate Cyclase (sGC) Stimulator	Vericiguat (VERQUVO®)	<ul style="list-style-type: none">• Low blood pressure• Dizziness

What can I do to manage the risks of medication side effects?

Sometimes a medicine can cause unwanted effects. These are called **side effects**. Below is a list of some of the side effects (but not all) for your heart failure medicines and what to do if you experience them. It is important to talk to your healthcare provider if you are experiencing any of these side effects.



Side Effect	What action should I take?
Dry cough	Talk to your provider about switching to another medication.
Dizziness	Monitor your blood pressure and weight daily. Change positions slowly .
Fatigue	Talk to your provider. They may need to make changes in your dose. Fatigue may go away after your medication is adjusted.
Shortness of breath	Call your provider. This may be a medication side effect or a symptom of your heart failure.
High or low potassium blood levels	Schedule regular checkups with your provider so they can check your blood lab values. Diuretics make your body lose potassium. You will have a blood test to check your potassium level and to determine if you need to take potassium pills.
Worsening kidney function	Schedule regular checkups with your provider so they can check your lab values to monitor how your kidneys are working. Monitor your weight daily.
Breast tenderness	Talk to your provider. They may need to switch your medication.
Swelling in lips or throat (angioedema)	Call 911 immediately.

What medications should I avoid?

There are some over-the-counter (OTC) medications that may cause problems for a person with heart failure. Examples of medicines that should be avoided are listed on the following page:

- **Non-Steroidal Anti-Inflammatory Drugs (NSAIDs):**

NSAIDs (over the counter medication used for pain) can worsen heart failure and decrease kidney function. Examples of NSAIDs include ibuprofen (Advil®, Motrin®), naproxen (Aleve®, Naprosyn®). We recommend taking acetaminophen (Tylenol®) for pain.

Please note: Aspirin is an NSAID, but you may use if prescribed by your provider.

- **Antacids:**

These medications are high in sodium and may increase buildup of water in the body. They can also decrease the effectiveness of your heart failure medication.

- **Decongestants:**

Decongestants for coughs and colds can increase your blood pressure or heart rate. Please discuss with your provider before taking.

- **Alternative or Herbal supplements:**

A few that you may have heard of are ginkgo biloba, ginseng, echinacea and valerian root. These drugs may interfere with the action of your heart failure medications and may have other harmful effects. Please discuss with your provider before taking them.

Diet and Nutrition Guide for Heart Failure



Your diet and nutrition are very important for managing your heart failure and reducing your risk of further health problems. Because your heart is not functioning normally, your body is not able to handle extra amounts of sodium or fluid. This means that you need to pay extra attention to your diet, particularly the amount of sodium you eat and the amount of fluid you drink.

This guide is a comprehensive resource that will help you do 2 things: transition to a low sodium diet and manage your fluid intake. You will learn about why these changes are vital for managing your heart failure.

Adopting a new diet can be a big change. You will make smaller changes over time, and soon your new heart healthy diet will feel normal and manageable. Until then, keep trying and don't forget we are here to support you through this change and beyond.

Managing Sodium in Your Diet

As a part of managing your heart failure, you need to adopt a heart-healthy low-sodium diet. This is one of the most important self-care behaviors you can follow to prevent hospital stays and slow the progression of your heart failure.

The goal of this section is to help you learn:

- How to follow a low-sodium diet
- Your sodium goals (daily and per meal)
- Ways to reduce sodium in your diet
- How to read a food label
- The sodium content of selected foods and condiments
- Substitutes for high-sodium foods and condiments
- How to track your sodium intake

Why is it important for me to follow a low-sodium diet?

Too much sodium in your diet can make your heart failure worse. Sodium acts like a sponge that holds fluid in your body. This extra fluid makes your heart work harder and leads to fluid buildup in your body. One of the most effective ways to reduce extra fluid is to have less sodium in your diet. Following a low-sodium diet has the following benefits:

- Your body maintains a better water (fluid) balance
- Better management of your heart failure symptoms
- Protects your heart's pumping ability
- You may experience higher energy levels and better overall well-being

What happens if I don't follow a low-sodium diet?

Eating a low-sodium diet is a priority for heart failure patients. Failure to manage the sodium in your diet may lead to severe symptoms, increased need for hospital stays, and a quicker progression of your disease.

Eating too much sodium may cause the following symptoms:

- Swelling in your feet, ankles, legs and belly
- Shortness of breath during activity
- Weight gain
- Cough
- Urinating less
- Decreased appetite
- Feeling full quickly/bloated when eating
- Worsening fatigue
- Trouble breathing when lying flat (need to sit in chair or use more pillows to sleep)

Who will work with me to understand my diet?


Our Registered Dietitian Nutritionists (RDN) are food and nutrition experts who are available to discuss heart healthy food and nutrition choices with you. They provide sound, easy-to-follow nutrition advice. You have the opportunity to work closely with a dietitian and your nurses to discuss what foods to eat more of and what foods to avoid or limit.

What is the difference between sodium and salt?


We often use salt and sodium as if they mean the same thing. But they aren't quite the same. Salt is made up of two minerals: sodium and chloride.


Sodium and Salt - What's the Difference?

Here is a clear way to tell the difference between sodium and salt:



Sodium is a natural mineral found in many foods. It is also added to processed foods during manufacturing.





Salt is made up of two minerals, sodium and chloride. Salt is what we add to our food.

The problem:
sodium increases the amount of fluid in the blood vessels

Is there a health advantage to eating other forms of salt or salt alternatives?

Many forms of table salt are marketed as being “natural” or a “healthier alternative”: sea salt, rock salt, or pink Himalayan salt. Many people believe these forms of salt contain less sodium and must be better for them. **All of these salts contain comparable amounts of sodium and should be avoided.**

Garlic salt, onion salt and celery salt are also popular alternatives to table salt. Do not be fooled! Salt is salt. These products combine table, rock or sea salt with small amounts of dried garlic, onion or celery.

Use garlic powder or onion powder instead.

How much sodium can I have?

The nutrition plan for people with heart failure limits the sodium you get from food and drink to 2,000 milligrams (2 gram) per day or less. This amount cannot be "saved" over several days. Your provider may change this limit at any time based on your specific nutritional needs.

Daily Sodium Amount

Your doctor has recommended that you limit your sodium intake to:

2000 mg per day or less
(equal to 2 grams)

To give you an idea of how much that is:

1 teaspoon of salt =
approximately 2,300 mg
of sodium



Follow this general guide as a starting point:

- Eat less than 2,000 milligrams (2 grams) of sodium per day.
- Eat three meals each day, limiting each meal to 600 mg or less of sodium.
- If you are only eating half of your normal meals, try eating 4-6 small meals daily.
- Eat less than 140 mg of sodium per single serving of food.
- Limit your snacking throughout the day to less than 200 mg of sodium.

How do I reduce sodium in my diet?

Follow these six general guidelines to reduce the amount of sodium in your diet:

1

Read the Nutrition Facts label

The nutrition facts label on the back of the package will tell you how much sodium is in a food product. Learning this skill will help you make healthier food choices when grocery shopping or preparing food at home.

Nutrition Facts	
8 servings per container	
Serving size	2/3 cup (55g)
Amount per serving	
Calories	230
% Daily Value*	
Total Fat 8g	10%
Saturated Fat 1g	5%
Trans Fat 0g	
Cholesterol 0mg	0%
Sodium 160mg	7%
Total Carbohydrate 37g	13%
Dietary Fiber 4g	14%
Total Sugars 12g	
Includes 10g Added Sugars	20%
Protein 3g	
Vitamin D 2mcg	10%
Calcium 260mg	20%
Iron 8mg	45%
Potassium 235mg	6%

* The % Daily Value (DV) tells you how much a nutrient in a serving of food contributes to a daily diet. 2,000 calories a day is used for general nutrition advice.

Step 1:

Check the serving size and the number of servings in the package.

- The serving size tells you how much of this food product is in one serving.
- A package often contains multiple servings. Serving sizes vary a lot.

Step 2:

Check the amount of sodium in one serving.

- Food labels list the amount of sodium in the food in milligrams (mg).




Remember: your sodium limit is 2,000 mg a day or less.

2

Learn the meaning of sodium label claims

Food and beverage packages may have sodium label claims that are misleading. Food manufacturers use marketing terms such as “reduced sodium” or “light in sodium” to trick you into believing their foods are low in salt. Look for “low-sodium” on the food label. This term is federally regulated.

Understanding a labeling claim can help you quickly identify foods that contain less sodium. The table below is a guide to common sodium claims and what they mean:

Choose these:		
	Sodium free	One serving contains no more than 5 mg sodium.
	Very low sodium	One serving contains no more than 35 mg sodium.
	Low sodium	One serving contains no more than 140 mg of sodium.
Check the sodium content of these:		
	Light or Lite sodium	The sodium content has been reduced by 50% as compared to its regular version.
	Reduced or Less sodium	The sodium content has been reduced by 25% as compared to the reference food. You need to look at the actual mg of sodium because it still may be high.
Avoid these:		
	High sodium	One serving contains 480 mg sodium or more; or 20% Daily Value or more.

Food and beverage packages may have sodium label claims that are misleading.

What are some hidden sources of sodium?

Sodium is found in:

- Table salt: 1 teaspoon contains 2,300 mg of sodium.
- Seasonings: onion salt, garlic salt, seasoning salt, seasoning blends.
- Leavening agents: baking powder (488 mg per teaspoon) and baking soda (1,259 mg per teaspoon).
- Additives and preservatives: brine, di-sodium phosphate, monosodium glutamate, sodium erythorbate, sodium benzoate, sodium hydrozide, sodium propionate, sodium sulfite, and sodium nitrite.
- Medications such as antacids, laxatives and antibiotics. Ask your pharmacist if you have questions.

3 Add flavor without adding sodium

- Don't add salt to your food during cooking, baking or at the table.
- Try no-salt seasoning blends, herbs, or spices instead of salt.
- Avoid butter and broths with the word sodium or salt in the name or ingredient list.

4 Build a heart healthy pantry

Remove high-sodium canned soups, sauces, mixes and boxed foods (including flavored rice, instant noodles, and ready-made pasta) from your pantry.

5 Choose low sodium versions or alternatives of your favorite foods

Prepare your own foods. Use the low-salt resources found on page 11 of this section.

According to the Centers for Disease Control, more than 40% of the sodium we eat each day comes from only 10 types of food.

High-Sodium Foods	Low-Sodium Alternatives
Breads and rolls	Look for “No Salt Added” or “Low Sodium” products
Cheese (regular and processed)	Low-sodium cheeses, cream cheese, ricotta cheese, Swiss and mozzarella
Cold cuts and cured meats	Look for “No Salt Added” or “Low Sodium” products
Burritos and tacos	Use “No Salt Added” or “Low Sodium” seasoning
Mixed meat dishes (beef stew, chili, meatloaf) and mixed pasta dishes (lasagna, spaghetti with meat sauce and pasta salad)	Prepare meals from scratch. Season with fresh herbs and spices instead of salt
Pizza	Limit cheese, remove meat and add more vegetables
Poultry (frozen and processed)	Select a fresh product
Sandwiches (hamburgers, hot dogs, and submarine sandwiches)	Sandwiches made with unsalted roasted meat or poultry
Chips, crackers, popcorn, pretzels, and snack mixes	Unsalted crackers or chips, plain popcorn, unsalted nuts
Canned Soups	Homemade soup without added salt

Did you know?

A processed food is any food that has been changed from its original, raw agricultural form. Heavily processed foods typically contain added sodium. Some examples include boxed foods, frozen meals and snack foods like chips and cookies.

6 Decrease the number of times you eat restaurant food each week

According to the Center for Disease Control, more than 70% of the sodium you eat is from processed and restaurant foods.

How do I track my sodium intake?

You need to keep track of how much sodium you eat and drink every day. You can use the log below to track what you eat.

Extra copies of this Sodium Tracking Log can be printed from the *Michigan Medicine Care Guides from Your Clinician* site:

<https://careguides.med.umich.edu/>

Type in the keywords **heart sodium log** and then download and print.

Meal	Food/Beverage	Sodium (mg) per Serving	Servings eaten	Total Sodium (mg)
Example	1 can of Campbell's low sodium chicken noodle soup	120mg	1 serving of each	120+ 48 = 168mg
	Dannon Greek Vanilla Yoqurt	48mg		
Breakfast				
Snack				
Lunch				
Snack				
Dinner				
Snack				
Total Daily Sodium (mg):=				

There are smartphone apps to help you track too. Many of these apps have the nutritional information for a wide range of foods which makes it easier to track your sodium.

Below are some examples of free apps you can use:






MyFitnessPal	Fooducate	MyNetDiary	MyPlate	Lose It!
				



Photo credit: TasteOfHome.com

What do I need to think about when meal planning?

- It is important to eat a well-balanced diet rich in vitamins, minerals, fiber and other essential nutrients you need.
- Eat a mix of foods across all food groups:
 - Protein foods:
 - Seafood
 - Lean meats and poultry
 - Eggs
 - Legumes (beans and peas)
 - Nuts, seeds
 - Soy products
 - Fruits and vegetables
 - Whole grains
- Break down the amount of sodium you eat by meal.
- Plan your meals ahead of time. Think about what you are going to eat throughout the week and shop for these items.
- Search the Internet for low sodium recipes.

Below are some good websites for low sodium recipes:

American Heart Association Recipes:

<https://recipes.heart.org/en>

Calorie King Food Database:

www.calorieking.com

“Don’t Pass the Salt” Recipes for Success:

www.aahfn.org/resource/resmgr/Docs/awareness/cookbookpdf.pdf

Eat Right:

www.eatright.org/health

Keep the Beat Recipes: Deliciously Healthy Dinners:

www.nhlbi.nih.gov/health-topics/all-publications-and-resources/keep-beat-recipes-deliciously-healthy-dinners

Did you know ?

The Mardigian Wellness Resource Center at the Frankel Cardiovascular Center has a great selection of low-sodium cookbooks you can check out for free from the lending library. You can return the resources in person or by mail with a pre-paid envelope.



What are some shopping tips for lowering sodium?

- Make a list so you know what to buy before you go shopping.
- Shop from the outer aisles of the grocery store, where most of the fresh foods are found.
- Buy fresh, frozen or no-salt added fruits and vegetables.
- Read food labels carefully. Look at serving size and the sodium content per serving.
- Choose items labeled “No Salt Added” or “Low Sodium”.
- Avoid boxed items with seasoning packets, such as rice or pasta blends, as these are high in sodium.
- Buy fresh poultry, fish, pork, and lean meat.
- Avoid cured, salted, smoked, and other processed meat.
- Avoid “basted” or “self-basted” products which may contain injected broth with salt.
- Buy lunch meat labeled “No Salt Added” or “Low Sodium”.
- Look for low sodium cheeses, such as Swiss, Goat or Farmers cheese.
- Review food labels on condiments. Foods like ketchup, soy sauce, salad dressing, and seasoning packets are high in sodium.

What are some cooking tips for lowering sodium?

- Making your own meals is a great way to eat less sodium, because you are in control of what goes into your food.
- Remove the salt from your favorite recipes.
- Don’t add salt to the water when you cook pasta or rice.
- Experiment with no-salt herbs, spices and seasoning mixes.
- Try a new low sodium recipe.
- If preserving your own food, salt is not necessary for safe canning or freezing of fruits and vegetables.

How can I follow a low-sodium diet when eating out?

Eating out, whether it is at a restaurant, a friend's house, or a party for a special occasion, can be challenging. The following tips will help you follow a low-sodium diet when eating out:

At a restaurant:

- Check to see if the restaurant has nutritional information posted on their website.
- You can also find restaurant nutritional information on these websites:
 - Calorieking.com
 - MyFitnessPal
- Ask to see nutritional information (available in all chain restaurants), and then choose lower sodium options.
- Ask for your meal to be prepared without salt.
- Ask for sauces and salad dressings to be served “on the side,” then use in small amounts.

When eating out, consider the following:

Appetizers:

- Avoid pickles, cured meats, cheeses, and salted nuts.

Main Courses: choose items that are:

- Grilled
- Baked
- Broiled
- Roasted

Ask that food be prepared without:

- Salted butter
- Salt
- MSG
- Dressings
- Order condiments, sauces and dressings on the side

At fast food restaurants:

Keep takeout and fast food as an occasional treat.

At a party:

- Eat fresh fruits and raw vegetables.
- Limit the use of dips and party spreads.
- Avoid snack foods such as potato chips, salted popcorn, pretzels or peanuts.

What if I don't cook?

- **Meal services** such as:
 - Meals on Wheels
<https://www.mealsonwheelsamerica.org/>
 - Mom's Meals
<https://www.momsmeals.com/>
 - Seattle Sutton meals
<https://www.seattlesutton.com/>
- **Frozen Dinners** (look for meals with lower sodium) such as:
 - Healthy choice
 - Smart Ones



What about potassium in my diet?

We talk a lot about sodium, but your body also needs potassium to work properly. Some heart failure medicines can cause potassium levels to go either up or down. Your provider will check your blood potassium level regularly and tell you if you need to change your diet to keep your potassium level normal.

Foods high in potassium (more than 200mg/serving):



Artichoke



Avocado



Bananas



Broccoli



Bok Choy



Cantaloupe



Chocolate



Coconut Water
& Coconut Milk



Dried Fruit



Greens
(Beet & Spinach)



Kiwi



Mango



Milk & Soy Milk



Nectarines



Nuts & Seeds



Orange Juice
& Oranges



Pomegranate



Potatoes
(White & Sweet)



Pumpkin



Raisin Bran



Raisins



Salt Substitute



Squash
(Winter & Summer)



Tomatoes &
Tomato Juice



Yogurt



Zucchini



If you are told to limit potassium in your diet, be very cautious about using salt substitutes such as NuSalt[®]. Most contain some form of potassium.

Check with your provider or RDN before using a salt substitute.

Fluid Management

When you drink too much fluid, your heart has to work much harder to pump the extra fluid around your body. This can make your heart failure symptoms worsen. Limiting fluid intake is key to preventing Emergency Room visits and hospital stays.

The goal of this section is to help you learn:

- Why you need to limit your fluid intake
- What is considered a fluid
- Your daily fluid goal
- How to measure and monitor your fluid intake
- Tips to help you with this lifestyle change

What is a fluid restriction?

A fluid restriction means you can only have a certain amount of fluid each day. Your provider will recommend **limiting fluids to 8 cups (2000ml or 2-liters) per day**. They may change this limit based on your specific plan of care.

What should I count as fluid?

Fluid from both food and drink should be counted toward your daily fluid limit. Any food that is liquid at room temperature counts as fluid. If it melts or pours at room temperature it is a fluid.

Here are some examples of drinks and foods that count as part of your fluid total:

Any beverage you drink	
Water	Milk
Coffee	Liquid creamer
Tea	Juice
Soda pop	Fruit-flavored drinks, lemonade, punch
Sports drinks	Nutrition supplements like Ensure or Boost
Liquid medicine	Alcohol

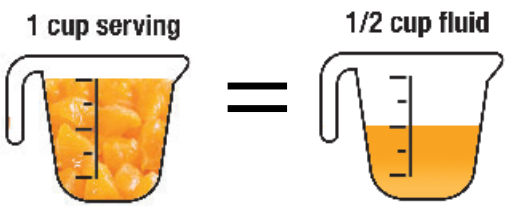
Fluids that are part of a food	
Soup	Broth
Gravies	Sauces

**Foods that melt down to a liquid
(1 cup = ½ cup fluid)**

Jell-O®	Sherbet
Popsicles	Frozen yogurt
Ice cream	Ice cubes
Milkshakes/smoothies	

Juicy fruits or vegetables (1 cup = ½ cup fluid)

Melons (watermelon, cantaloupe, honeydew, etc.)	Cucumbers Tomatoes
Oranges, Grapes, apples, peaches, berries	Applesauce



How do I track my fluid intake?

Fluids can be measured in different ways. To help you measure, the chart below lists some common equivalent household amounts:

Tablespoon/Cup of fluid	Equivalent fluid ounce	Equivalent milliliters (ml)
1 tablespoon	½ fluid ounce	15ml
2 tablespoons	1 ounce	30 ml
½ cup	4 ounce	120 milliliters (ml)
1 cup	8 ounce	240 ml
4 cups	32 ounce	1000 ml (1-liter)
5 cups	40 ounce	1.2 liters
6 ¼ cups	50 ounce	1.5 liters
8 cups	67 ounce	2000 ml (2-liters)



2 liter bottle
or pitcher

Keeping track of your fluids- container method

There is an easy way to track your fluid intake using a water pitcher or 2-liter pop bottle:

1. Fill the container with 2 liters (2000 ml) of water.
2. Each time you eat or drink, count the amount of fluid coming from beverages and food. This includes fluid from each meal, snack, or beverage break.
3. Pour an equal amount of fluid out of the container after each meal, snack, or beverage break.
4. When the container is empty, you will know you have reached your fluid limit for the day.

Keeping track of your fluids- written method

You need to keep track of how much fluid you have every day. You can use the log below to track your fluid.

Extra copies of this Fluid Tracking Log can be printed from the *Michigan Medicine Care Guides from Your Clinician* site:

<https://careguides.med.umich.edu/>

Type in the keywords **heart fluid log** and then you can download and print.

Meal	Food or beverage:	Fluid (ml) per serving:	Total fluid (ml):
<i>Example:</i>	<i>Coffee Cantaloupe Ice chips</i>	<i>1 cup of coffee= 240ml 1 cup fruit (½ cup fluid) =120ml ½ cup (1/4 cup fluid) =60ml</i>	<i>240+120+60= 420ml</i>
Breakfast			
Snack			
Lunch			
Snack			
Dinner			
Snack			
Total Daily Fluid (ml) =			

What are some helpful hints for fluid control?

Plan ahead. Spread your fluid allowance over the whole day. Don't drink it all at once. The chart below can help you plan your fluid amounts:

Menu Planner for Fluids			
For a 1.5 Liter (1500 mL) daily limit:		For a 2 Liter (2000 mL) daily limit:	
Breakfast:	1 ¼ cups fluid	Breakfast:	2 cups fluid
AM Snack:	1 cup fluid	AM Snack:	1 ¼ cups fluid
Lunch:	1 cup fluid	Lunch:	2 cups fluid
PM Snack:	1 cup fluid	PM Snack:	1 cup fluid
Dinner:	1 cup fluid	Dinner:	1 cup fluid
Night Snack:	1 cup fluid	Night Snack:	1 cup fluid

- Know how much fluid your cups, bowls, mugs, and glasses hold.
- Use small cups and glasses for beverages.
- Keep track of your fluid intake. A fluid log can help you record your fluids and add up your total each day (see previous page).

What do I need to remember about fluids and taking medications?

- Remember to save some fluids to take with your medicine. Fluid you use to take medications must also be counted in your fluid restriction.
- Ask your pharmacist what medicines you can take with food.
- Save fluids from your meals to take pills. Some medicines say to take with a full glass of water- check with your nurse or provider first.

What if I get thirsty?

It is very important to follow the fluid limit set by your provider. But it can be difficult. Try one of these tips if you feel thirsty:

- Chew sugarless gum or suck on hard sugarless candies or mints
- Snack on frozen fruit like grapes or strawberries (this still counts toward your fluid restriction)
- Gargle with alcohol-free mouthwash, rinse with cold water and spit out
- Suck on a lemon slice
- Chew on fresh peeled ginger
- Apply lip balm to your lips if they are dry
- Try artificial saliva products
- Breathe through your nose and not your mouth
- Use a humidifier to moisten the air

Action steps you can take:

- Limit fluid intake to 8 cups per day
- Count the full volume of fluids
- Count half the volume of foods that melt
- Count half the volume of juicy fruits and vegetables
- Start tracking today

Living with Heart Failure: Monitoring Your Symptoms



Credit: Pixabay/CC0 Public Domain

You play an active role in monitoring your health at home. It's important to track your condition carefully. This handout will help you learn about your body and the symptoms that tell you if your heart failure is getting worse. You will be able to recognize problems before they become too serious and avoid a hospital stay.

How do I monitor my health at home?

Heart failure requires you and your caregiver to pay close attention to any changes in your symptoms. Follow these steps below to help notice changes in symptoms early and manage them better.

1. You will need to perform the following symptom checks daily

- **Weigh yourself every day.**

Follow these steps below to get the most accurate weight possible:

- Weigh yourself at the same time each morning: after you urinate but before you eat or drink.
- Use the same scale every day. Place the scale on a hard, flat surface without carpet.
- Weigh yourself with no clothing or wear the same amount of clothing each time.

- Do not wear shoes.
- Record your weight on your log, calendar or phone app each day.
- Tell your doctor if your weight increases by 2 or more pounds in one day or 4 pounds in a week.
- **Ask yourself the following questions:**
 - Is my energy level normal?
 - Am I having shortness of breath more often when I am doing my everyday activities?
 - Am I having shortness of breath at night?
 - Are my clothes or shoes feeling tight?
 - Are my ankles, feet, legs or belly (abdomen) swollen?
 - Am I coughing more often?
 - Is my appetite decreased or do I become full more quickly?
- **Check the Heart Failure Action Plan to see what Zone you are in.**
- **Check your blood pressure and pulse in the morning, if directed by your provider.**

Heart Failure Action Plan: When to Call Your Doctor or Nurse

When you are living with heart failure, it can be really hard to know when to call your doctor. The heart failure action plan on the following page provides clear instructions about when and who to call for you and your caregivers. If any new signs or symptoms develop, reference the plan below and call the numbers provided.



Heart Failure Action Plan

Do not guess. Call your doctor if you have any questions about this plan.

Green Zone: Doing Well	<p>Your goal weight is: <input style="width: 300px; height: 20px;" type="text"/></p> <p>You are in the Green Zone if:</p> <ul style="list-style-type: none"> You have no shortness of breath, no swelling, no weight gain, no chest pain, or no decrease in your ability to maintain your activity level <p>The Green Zone means that your symptoms are under control and you should:</p> <ul style="list-style-type: none"> Continue taking your medications as ordered Continue weighing yourself daily Follow your 2-gram sodium diet and fluid restrictions Keep all your doctor and blood draw appointments
Yellow Zone: Caution Call Your Doctor	<p>You are in the Yellow Zone if you have any of the following:</p> <ul style="list-style-type: none"> Weight gain: 2 pounds or more in a day, or 4 pounds or more in one week New cough or wheezing Shortness of breath with activity Decrease in urine output Change in your appetite (you are eating less but not losing weight) Worsening tiredness Increased swelling in your ankles, feet or belly (abdomen) Trouble breathing when lying flat (need to sit in chair or use more pillows to sleep) <p>How to call? Mon-Fri: 8:00am to 5:00pm call (888) 287-1082. After 5:00pm, on weekends or holidays call: (734) 936-6267 and ask the operator to page your heart doctor.</p>
Red Zone: Call 911	<p>Call 911 immediately if you have any of the following:</p> <ul style="list-style-type: none"> Chest tightness at rest Unrelieved chest pain Persistent, sever cough or wheezing Confusion Fainting spell Shortness of breath when you are at rest

What do I do if I have other questions or concerns?

Call the Frankel Cardiovascular Call Center at (888) 287-1082 between 8am-5pm Monday through Friday.

You can also use the [MyUofMHealth.org](https://myUofMHealth.org) secure patient portal to communicate with your care team about non-urgent matters. This tool allows you to:

- Request an appointment, view and cancel appointments, or self-schedule an appointment with an established provider
- Receive laboratory and other test results
- Send non-urgent message to your care team (avoid phone tag!)
- Review prescription medications and request prescription renewals

If you need further assistance using the Patient Portal, you may email the Health Information Management department at HIM-PatientPortal@med.umich.edu, or you can call (734) 615-0872 Monday-Friday 7:30 am -4:00 pm.

2. You will need to record your symptom checks daily

Be sure to record the results of your home symptom checks (see log sheet on page 5 of this section). Please bring your log with you to appointments so you can easily share it with your health care team. You may prefer to use your own method such as a notebook, calendar, or phone app. Look for the free *HF Path* app from the American Heart Association on the Google Play App Store (for Android phones) or the iTunes App Store (for iPhones). You can use it to track your weight and symptoms.

A nurse clinical care coordinator will go over your self-check results with you during routine phone calls and at your clinic visits.

Use this daily log to monitor your heart failure symptoms:

- Mark the month you are monitoring
- Fill in the day of the month (in the left column)
- Record your symptoms for each day of the month

Symptom self-check log: record your findings below								
Month _____								
Record pulse and blood pressure if directed by your provider								
Date	Weight	Change in your breathing	Swelling	Fatigue	Change in appetite	Heart Failure Zone	Pulse	Blood Pressure
(Example) 12/01/20	150 lbs	No	Yes, ankles	Yes	Yes	Yellow	80	110/70

Extra copies of this Symptom Monitoring Log can be printed from the *Michigan Medicine Care Guides from Your Clinician* site:

<https://careguides.med.umich.edu/heart-failure>

Notes

My goals:

My blood pressure

My pulse:

My weight:

For patients with diabetes - my A1C:

Heart Failure: Getting Active and Staying Active

People with heart failure feel better when they stay active. In the past, patients were told to rest and give up activities. Today, research shows that daily activity is safe for most people with heart failure. Your care team will work with you to create an activity plan that is right for you.

This information is a guide to the overall benefits of activity and teaches you how to safely become more active.

Why is daily activity important?

Daily physical activity and exercise can have immediate and long-term health benefits. Most importantly, regular activity can improve your quality of life.

What are the benefits of regular physical activity?

- Improves mood
- Boosts energy
- Decreases symptoms
- Lowers blood pressure and cholesterol
- Improves your heart's function
- Lowers the risk for diabetes

Staying active is one of the best ways you can improve your symptoms. If it is easier, you can divide your activity sessions into smaller blocks of time. Make it a goal to do some activity for a total of 30 minutes every day. Start slowly and increase your activity in gradually. Do not forget to include time for a warm up and a cool down.

Activity Step 1: Warm up

A proper warm up will allow you to safely ease into activity. Warming up is very slow, light activity that prepares your muscle for aerobic or weight training exercise. An appropriate warm up should last 5-10 minutes. Some possible warm up activities include:

Perform each activity 10 or more times as tolerated.



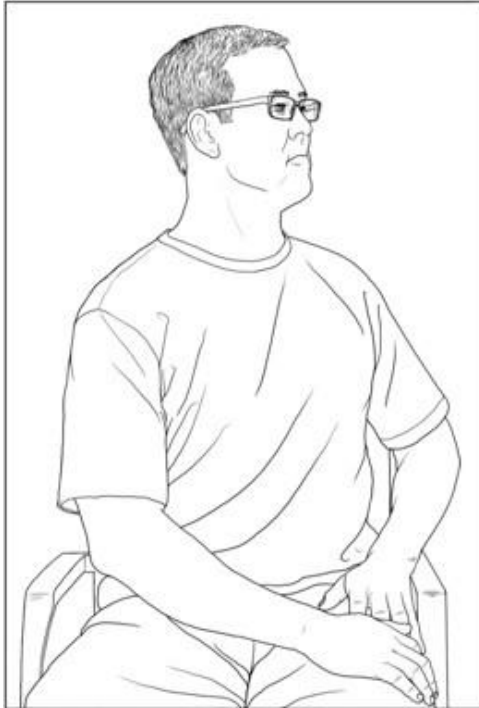
1. Shoulder Shrugs

- Bring your shoulders up to your ears while breathing in.
- Then relax your shoulders down while breathing out.
- Repeat.



2. Shoulder Circles

- Sitting upright, roll your shoulders in a smooth motion up, back and down in a circle.
- Repeat then reverse direction.



3. Trunk Twists

- Slowly rotate your trunk to the right, looking over your shoulder.
- Hold and stretch.
- Then rotate your trunk to the left, hold and stretch.
- Repeat sequence.

4. Trunk Sidebending

- Hold your arms relaxed at your sides and maintain your trunk upright.
- Lean to your right side slowly.
- Hold and stretch.
- Then lean to your left side, hold and stretch.
- Repeat sequence.



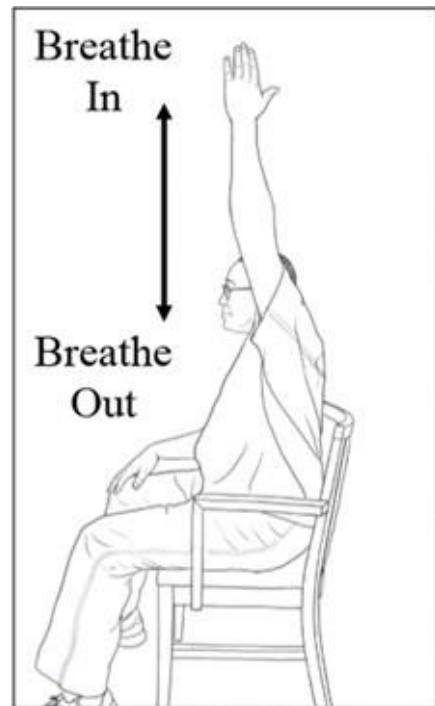


5. Chest Stretch

- Place your hands behind your head while sitting upright.
- Move your elbows back breathing in until you feel a stretch, hold.
- Relax elbows forward breathing out to rest.
- Repeat.

6. Forward Arm Raise

- Sitting with upright posture, straighten your arm with your thumb facing up.
- Raise your arm up to the front over your head. Your elbow should be next to your ear.
- Repeat with your other arm.

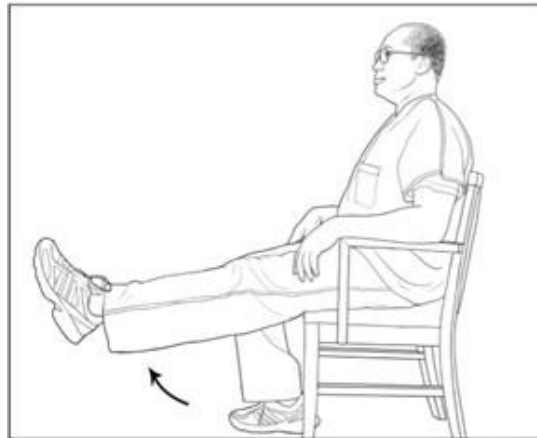


7. Ankle Pumps

- Move your ankle up and down (like pressing and releasing a gas pedal).
- You may perform this exercise sitting or lying down.
- Repeat.

8. Leg kicks

- Sitting with upright posture in a chair or in the bed, slowly kick your leg out straight.
- Hold for 3 seconds, then repeat with the other leg.



Activity Step 2: Aerobic Activity

Aerobic activity means moving your large muscles in a continuous way for a sustained period of time. Walking, swimming or pedaling are examples. Aerobic activity should be done daily. The key to becoming more active is to do it slowly and build up gradually. Move at a pace that is comfortable for you. Be sure to listen to your body and be aware of your symptoms.

How do I follow an aerobic activity program, like a walking or pedaling program?

1. Complete your warm up exercises described above.
2. Perform activity at a moderate effort for 30 minutes or more daily. You can complete these minutes in a single session or break it up over the course of the day.
3. Track your minutes spent doing aerobic activity (see activity log on page 15 of this section).

If you are unable to walk without assistance, please consider including the seated activities described above in your 30 minute daily program.

How will I rate my activity intensity?

During aerobic activity, you will rate your effort. This means that your care team wants you to estimate how hard the activity is for you. This is called **exertion** or effort. Use the table below while you are doing an activity. It ranges from 6 to 20. **6 means "no exertion at all" and 20 means "maximal exertion."**

How will I use the perceived exertion scale?

During activity, take a moment to sense how you are feeling. Now relate that feeling to one of the numbers on the **rate of perceived exertion (RPE)** scale below. For example, sitting in a chair you might feel like you are exerting yourself at a 6. This means it is "no exertion" (or very low effort) on the perceived exertion scale. Walking at a moderate pace, you might perceive to be a 11 "fairly light" or 13 "somewhat hard" effort. It is advised that you **do not exercise at "very hard" or "very, very hard" effort.**

Identify the level of exertion you are feeling:		Activity zone instructions	
6	No exertion		
7	very very light exertion		
8			
9	very light exertion		
10			
11	fairly light exertion		This is your exercise goal: a rating of 11-13 is ideal
12			
13	somewhat hard		
14			Slow down your movements to get back to the green zone
15	Hard		
16			
17	very hard	Stop and rest	
18			
19	very very hard		
20			

What are the signs and symptoms of overexertion?

During exercise, it is normal to feel short of breath, sweat and have a faster heartbeat than normal. If exercise puts too much strain on your heart, you may experience signs of overexertion. The following signs are things to watch for:

- Significant shortness of breath
- Chest pain or tightness
- Unusual or extreme fatigue
- Dizziness or lightheadedness
- Fast or irregular heartbeat

Steps to take if you have any of these symptoms while you are active:

1. Slow down
2. Rest while standing
3. Rest while sitting
4. **Stop** the activity, if your symptoms do not get better with the first 3 steps.
5. **Call 9-1-1** if your chest pain or other symptoms do not go away.



**Never stop exercising suddenly.
This may cause you to feel dizzy or lightheaded.
Always do a cool down routine.**

Activity Step 3: Strengthening Activity:

The purpose of this exercise program is to improve strength and mobility. Please do not attempt these standing activities without assistance unless you are able to walk independently without an assistive device (cane, walker).

Do these exercises while standing and holding onto something stable. With each exercise remain upright and stable.

Perform these exercises as directed by your Physical Therapist.

Repeat each exercise _____ times, _____ times per day.

Remember: Never hold your breath while exercising.

1. Heel and Toe Raises

- Raise your heels off the ground.
- Then raise your toes off the ground.



2. Marching

- Lift one knee up towards the ceiling.
- Repeat with the other leg.

3. Hip abduction/adduction

- Bring your leg out to the side keeping your foot pointing straight in front of you, return your leg to the start position.
- Repeat with the other leg.



4. Hip extension

- Bring your leg out behind you, emphasizing your thigh going behind you, squeezing your buttocks.
- Repeat with your other leg.

5. Hamstring Curls

- Bend one knee, bringing your ankle up towards your bottom.
- Repeat with your other leg.



6. Mini Squats

- Start by having a chair behind you while you are holding onto the kitchen counter.
- Stick your bottom out backwards and bend your knees as if you're going to sit down.
- Do not sit down entirely; rise back up before you touch the chair.
- Only lower as far as you can without losing control.

7. Forward Step Ups

- Step up with the right foot, followed by the left foot.
- Step down with the left foot, followed by the right foot.
- Repeat starting with the opposite foot.



8. Lateral Step Ups

- Standing sideways, step up with your right foot, followed by your left foot.
- Make sure you leave enough room for your left foot, on the step.
- Step down leading with your left foot, followed by your right foot.
- Repeat with the opposite side.

9. Trunk Twists

- Slowly rotate your trunk to the right, looking over your shoulder.
- Then rotate your trunk to the left.
- Repeat sequence.

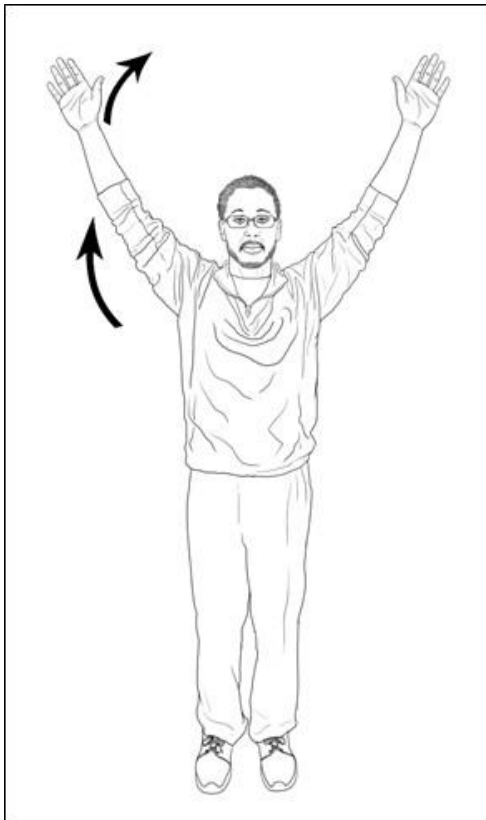


10. Trunk Side Bends

- Hold your arms relaxed at your sides and maintain your trunk upright.
- Lean slowly to your right side.
- Then slowly lean to your left side.
- Repeat sequence.

11. Forward Arm Raise

- Straighten your arm with your thumb facing up.
- Raise your arm up to the front of your head. Your elbow should be next to your ear.
- Repeat with your other arm.



12. Out, Up and Over

- Hold your arms straight at your sides with your thumb up.
- Raise your arm(s) up to the side over your head.
- Repeat sequence.

13. Arm Circles

- Hold your arms straight out to your sides.
- Move your arm(s) in a forward and circular motion.
- Repeat, moving in a backwards circular motion.



Activity Step 4: Cool Down

Similar to the warm up phase, your cool down should last 5-10 minutes. This will help your body recover from activity. The best way to cool down is to decrease the intensity of your activity. For example, decrease your walking speed or complete 3-4 seated exercises described on pages 2-5 of this section.

How do I track my activity at home?

Using a tracking tool is a great way to monitor your daily activity and keep you motivated. You can use this tracking log to record your activities and watch your progress. A full-page version of the Activity Tracking Log can be printed from the Michigan Medicine Care Guides from you Clinician site:

<http://careguides.med.umich.edu/>

- Find the activity you performed (in the left column) and check the box on the day the activity was done.
- You can divide your activity sessions into smaller blocks of time just make it a goal to do some activity for a total of 30 minutes every day.
- Don't forget to warm up and cool down.

Activity instructions:	Mon	Tues	Wed	Thurs	Fri	Sat	Sun
Warm up: 5-10 minutes							
Aerobic Activity (walking, pedaling, etc.) 30 minutes daily							
Strength Activities As instructed by your Physical Therapist							
Cool down: 5-10 minutes							

There are a variety of activity trackers available to help you track too. An activity tracker is a device that tracks your movement, such as a traditional pedometer or other **wearable device**, or a **smartphone app**.

Below are examples of some you can use:

Wearable devices: Jawbone, Fitbit, Nike FuelBand, Withings

Smartphone apps: MyFitnessPal

What are my exercise goals?

The overall goal for most people with heart failure is to reach 30 minutes of exercise throughout the day. This can be done with rest breaks. For example, you can be active for three 10-minute blocks to get to your 30- minute goal.

Activity Goal Example

What is your goal?

My goal: I will walk for 10 minutes 3 times per day.

How I will reach this goal?

I will walk with spouse two times per day and one time by myself.

See the last page of this section for your own goal setting.

Cardiac Rehabilitation Programs

What is Cardiac Rehabilitation?

Cardiac Rehabilitation, or cardiac rehab, is a program designed to teach you how to be more active and make lifestyle changes that can lead to a stronger heart and better health. Your cardiac rehabilitation program will be tailored to your needs and based on your health status. We use a patient and family centered approach to empower patients towards better health.

What happens in Cardiac Rehabilitation?

In Cardiac Rehabilitation you will learn how to:

- Exercise safely under the supervision of a certified exercise physiologist or physical therapist.
- Eat a heart-healthy diet under the supervision of a registered dietitian.
- Make healthy lifestyle changes to reduce your risk factors for heart and blood vessel disease.
- Manage and reduce your stress and symptoms of depression.

What are the benefits of Cardiac Rehabilitation?

The benefits of a Cardiac Rehabilitation program include:

- Improved blood pressure and cholesterol levels
- Improved symptoms
- Improved overall health and quality of life
- Increased energy level and ability to return to usual activities
- Improvement in taking medications correctly and safely
- Fewer hospital admissions
- Improved mood and self-esteem
- Greater social interaction

How do I enroll in Cardiac Rehabilitation?

As a heart failure patient you may be eligible to participate in cardiac rehab. Exceptions include cardiac rehab after procedures to implant a pacemaker or implantable cardioverter defibrillator (ICD). Coverage for heart failure is limited to patients with a heart that has very limited ability to pump out blood (Ejection Fraction <35%). Cardiac rehabilitation will begin about 6 weeks after you are discharged from the hospital. Check with your medical team and health insurance company to determine if cardiac rehab is covered under your insurance plan.

Returning to work

In most cases, your heart failure can be adequately treated and controlled, allowing you to continue to work. Your ability to return to work will depend on a number of things:

- Your overall health
- Your symptoms
- The type of work you do

Your health care provider can help you determine if and when you are ready to go back to work and if you are able to return to your regular job. Each situation will need to be addressed on an individual basis.

Sexual Activity

Is it safe to have sex if I have heart failure?

Intimacy is an important aspect of everyday life, and just because you have heart failure doesn't mean you cannot continue to enjoy intimacy with your partner. Most people with heart failure can still have an active sex life. You should feel comfortable bringing up the topic of sex at any time with your provider. It is also important to ask your provider when it is safe to resume sexual activity.

You can view sexual activity like any cardiovascular exercise. Typically, sex requires an effort similar to brisk walking, heavy household cleaning, or mowing the lawn. Most people experience a slight increase in heart rate and blood pressure, which is normal.

Here are some general guidelines for sexual activity:

- Choose a time when you are rested and relaxed.
- Wait two hours after eating a meal or drinking alcohol.
- Remember it is normal for your breathing and heart rate to increase during sex and that these should return to normal shortly afterward.
- Stop and rest if you have trouble breathing.
- Stop if you:
 - Feel lightheaded
 - Have chest pain or pressure
 - Have heart palpitations (racing, pounding, fluttering, or skipping a beat)
- Call 911 if your chest pain or other symptoms are not relieved when you stop.
- Use foreplay as a warm-up to prepare your heart for the increased effort sexual activity requires.
- Avoid positions in which you support your weight with your arms.
- Have sex in positions that are less strenuous such as lying on the bottom or with you and your partner lying side by side.
- If you are not ready for sex, there are other intimate activities that you can do such as kissing, holding hands, or massage to express your feelings for your partner.
- Talk to your provider if you have any questions or concerns.

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Notes

What is my activity goal?

How will I reach this goal?

Putting it all Together: Living a Healthy Lifestyle



How can I start living a healthier lifestyle?

Your lifestyle and eating habits can help improve your heart failure symptoms, slow your disease progression and improve your everyday life. Below are some tips to get you started on the path to better health.

The **single** most important thing you can do for your heart is to **stop smoking**.

Stop Smoking

Quitting smoking will improve your heart health. Smoking has many harmful health effects:

- Decreases the oxygen supply to the heart muscle
- Causes artery wall damage
- Decreases HDL (good) cholesterol
- Increases heart rate and blood pressure
- Can contribute to problems with heart rhythm

You must decide to quit smoking. No one else can make you stop. You can gradually eliminate cigarettes or stop all at once.

Here are some tips to help:

- Set a date to quit.
- Get support from family and friends.
- Get support from your health care providers. For example, your doctor can sometimes prescribe medications that will aid you in your efforts to quit.
- Use substitutes – sugarless candy, crafts or even a short straw that you hold in your hand.

- Join a quit-smoking program – your doctor or local lung and heart associations can recommend one.
- Call the UM Tobacco Consultation Service for help at (734) 998-6222. The Michigan Tobacco Quit Line (800) 784-8669 is free to Michigan residents.
- If you fail to quit, try again - **You can do it!**

Achieve and maintain a healthy weight

Achieving and maintaining a healthy weight is important for your health. It helps your body to function better, limiting the chance of future disease and discomfort. The easiest measure for assessing how your body weight is affecting your health is BMI or Body Mass Index. It is important to try to achieve a healthy BMI to reduce strain on your heart and keep your blood pressure under control. A phrase to remember that can help you is "move more and eat less". However, do not begin a weight loss program without consulting with your doctor. A dietitian can help you with meal planning and portion control.

Eat a healthy diet

A lifestyle that promotes a heart healthy diet helps you feel better and helps to manage your heart failure symptoms. Healthy eating starts with healthy food choices.

This eating plan should include a diet which is:

- High in fruits and vegetables
- High in whole grains
- High in legumes (peas and beans)
- High in skinless poultry, fish and low-fat dairy products
- Low in sodium
- Low in saturated fat and added sugars



Importance of Potassium

Potassium is a mineral that helps the heart work properly. Some heart failure medications can cause potassium levels to go either up or down. Your provider will tell you if you need to change your diet to keep your potassium level normal.

Reduce Sodium in Your Diet

Too much sodium in your diet can make your heart failure worse. Sodium acts like a sponge that holds fluids in your body. This extra fluid makes your heart work harder to pump blood throughout your body. One of the most effective ways to reduce extra fluid is to have less sodium in your diet. The nutrition plan for people with heart failure **limits the sodium you get from food and drink to 2,000 milligrams (2 grams) per day or less.**

Watch Cholesterol

Cholesterol can build up in the inner walls of your arteries. This causes your arteries to become clogged and narrowed which reduces your blood flow. Eating a healthy diet with a focus on eating foods low in saturated fats can help you control your cholesterol.

Please see the *Diet and Nutrition Guide for Heart Failure* in Chapter 3 of this binder for more detailed information on a healthy diet.

Limit alcohol

Your provider will talk to you about how much alcohol is safe for you to drink. Alcohol may limit the function of your heart muscle.

In general, you should follow these recommendations:

- **Do not** combine alcohol with your heart failure medications. Drinking alcohol prevents the medications from working effectively and may cause serious side effects.
- Limit alcohol to no more than 1 drink (12 oz. of a beer, 5 oz. of wine or 1.5 oz of hard liquor or distilled spirits) per day.
- **Do not** drink alcohol if you have a history of alcohol use disorder or alcohol related heart disease.
- Count alcoholic drinks as a part of your sodium and fluid intake.
- Remember alcohol does not provide any nutritional value to your diet.

Limit fluids

When you drink too much fluid, your heart has to work much harder to pump the extra fluid around your body. This can make your heart failure symptoms worsen so limiting your fluid intake can help you control these symptoms. The fluid limit for people with heart failure is **8 cups (2000 ml or 2-liters) per day.**

Please see *The Diet and Nutrition Guide for Heart Failure* in Chapter 3 for more detailed fluid information.



Get active

Regular activity can strengthen your heart muscle and increase your body's ability to use oxygen.

Great forms of exercise are:

- Brisk walking
- Jogging
- Swimming
- Bicycling

Your activity program should start slowly in the hospital and gradually increase. Physical activity should be fun and should fit into your lifestyle. Everyone is different. Some people will be able to walk long distances and others will not. Simply do as much as you can, as often as you can.

Please see *Heart Failure: Getting Active and Staying Active* in Chapter 5 of this binder for more detailed information on physical activity, including information on returning to work and sexual activity.

Control diabetes

Diabetes directly affects your heart and blood vessels. Good control of your blood sugar is important to help prevent or delay long-term, serious health problems. If you have any questions about a proper treatment plan, please ask your nurse or dietitian for diabetic diet education materials to help you control your blood sugar. Dietitians can help you choose healthy foods and develop meal plans to help you control your blood sugar.

Monitor your blood pressure

High blood pressure can make your heart work too hard and lose strength. It can also damage your blood vessels, making them stiff, weak or narrow.

If you take a blood pressure medication:

- **Do not** stop taking your medication without speaking to your doctor.
- **Do** follow a low sodium diet and avoid adding salt to your foods.
- **Do** exercise regularly and lose weight if necessary.
- **Ask** your doctor what your blood pressure goal should be.

Get vaccinated

Flu and pneumonia can add extra stress on your heart so they pose a greater danger for people who have heart failure.

Ask your doctor about getting a yearly flu vaccine, a 1 time pneumococcal vaccine and a COVID-19 vaccine.

Get enough sleep

The amount and quality of your sleep is important for a healthy lifestyle. Prioritize sleep and create a healthy sleep routine for yourself to follow.

Having heart failure increases your risk of having a sleep disorder called **sleep apnea**. Sleep apnea causes people to stop breathing during sleep. These repeated interruptions to sleep and drops in blood oxygen level can increase heart rate and blood pressure, making the heart work harder.

If you have these any of these symptoms please tell your doctor:

- History of loud snoring, waking up gasping or choking
- Stop-breathing episodes in sleep reported by a bed partner
- Not waking up refreshed in the morning
- Morning headaches
- Excessive daytime sleepiness

Take Care of your Emotional Health

It is important for you and your caregivers to practice being good to yourselves, both physically and emotionally. We have information, in this chapter, about *Living with Heart Failure: Your Emotional Health* and *How to be an Effective Caregiver for a Person with Heart Failure*.

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Living with Heart Failure: Your Emotional Health



When you have been diagnosed with a long-term illness like heart failure, it is normal to feel a lot of different emotions including:

- Anger
- Curiosity
- Fear/Worry
- Frustration
- Gratitude
- Guilt
- Loneliness
- Motivation
- Overwhelmed
- Sadness
- Surprise
- Uncertainty

While having a range of emotions is normal, if your negative emotions continue or interfere with your normal everyday activities, you may be experiencing **depression**. Depression can impact your ability to recover and may put you at risk for future health concerns.

What is depression?

Depression is characterized by persistently sad or down feelings and a loss of interest in activities, causing significant impairment in daily life.

Symptoms of depression may include:

- Feelings of sadness, emptiness or hopelessness
- Sleeping too much or too little, trouble falling asleep or staying asleep
- Changes in appetite
- Fatigue
- Loss of interest or pleasure in activities that used to be enjoyable
- Restlessness, jitteriness, feeling worried
- Anger, agitation, irritability
- Trouble concentrating, thinking, or making decisions
- Problems with memory
- Change in your sexual desire
- Thoughts of death or suicide

How do I know when to seek help for symptoms of depression?

If you experience any of the symptoms of depression for 2 weeks or longer, contact your heart doctor or primary care doctor for help and support.

Your safety and your life matter

Suicidal thoughts or thinking about death, dying or not wanting to wake-up should not be ignored. If you find yourself having suicidal thoughts or feelings, call 9-1-1, go to the nearest emergency room or call the National Suicide Prevention Lifeline at **(800) 273-8255**. The National Suicide Prevention Lifeline is available 24 hours a day, 7 days a week and provides free and confidential support. Chat options are also available through their website: <https://suicidepreventionlifeline.org/>

How can I get emotional support for heart failure if I need it?

Your doctor is a good resource for finding the emotional support that's right for you. Your primary care doctor or heart doctor can:

- Determine if further support is needed
- Connect you to additional support services, like social workers

Social workers are professionals trained to talk with you and help you understand and cope with your feelings and emotions. We have social workers in both the inpatient and outpatient settings at Michigan Medicine.

How can I reach a social worker?

- **Outpatient Social Work**

Call the Frankel Cardiovascular Center social worker at:

(734) 232-1559

- **Inpatient Social Work**

Ask your nurse or doctor to contact social work for you, or you may call us at **(800) 888-9825** Monday- Friday, 9:00am to 4:30pm.

What additional resources are available?

- National Alliance for Mental Illness
<https://www.nami.org/>
- Anxiety and Depression Association of America
<https://adaa.org/>

- Mended Hearts
<https://mendedhearts.org/>
- Michigan Medicine Psychiatry Depression Toolkit
<https://www.depressioncenter.org/depression-toolkit>

What can I do to manage my feelings and emotions?

Managing your emotions is one way to gain more control so you can start to feel better. Recognizing your emotions is the first step to managing them. Practicing some daily self-care can help make your emotions feel less overwhelming.

Some helpful actions you can take include:

- Set small goals for yourself every day
- Walk/exercise daily within your limits
- Get enough sleep and rest
- Participate in hobbies and social activities that you enjoy
- Share your concerns and successes with a supportive person
- Journal, or keep a regular record of your experiences and feelings
- Learn and use stress-reduction techniques (meditation, prayer etc.)
- Take an active role in your health
- Join a Support Group for people with heart failure and their families.

Call the CVC social worker at **(734) 232-1559** for more information.

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How to be an Effective Caregiver for a Person with Heart Failure



Heart failure is a diagnosis that not only impacts the person diagnosed, it impacts their support system too. Sometimes becoming a caregiver can be an unfamiliar and challenging role. The caregiver role is fluid; as your loved one's condition changes, so may your role. At times, you may need to be more or less involved. There are many ways caregivers can be helpful in assisting their loved one.

Some important tasks and roles of a caregiver are to:

- Buy groceries and help make meals
- Assist with household chores (cleaning, laundry)
- Provide transportation
- Arrange and attend medical appointments
- Monitor medications and help with prescription refills
- Talk with doctors, nurses, care managers, and others to understand what needs to be done

How do I care for myself?

Caring for yourself is one of the most important things you can do as a caregiver. When your needs are taken care of, you will be a more effective and loving caregiver. There are self-care practices you can use to help make the situation more manageable for yourself.

Below are some effective ways to care for yourself:

- Make your health a priority. Eat well, stay active, and get plenty of sleep.
- Be patient – it is not unusual for your loved one to have good or bad days.

- Share your feelings with someone you trust, or join a support group.
- Build your personal support network. It is important to have a team of people who can help you.
- Ask for help. Be specific on how others can help you, don't try to do it all yourself.
- Let your doctor know if your responsibilities as a caregiver are making you feel depressed or anxious.
- Make time for yourself each day. Do something you enjoy and find relaxing.

What other resources are available?

Caregivers need a range of support to remain healthy, improve their caregiving skills and remain in their caregiving role. The resources below can help:

AARP: Family Caregiving

<https://tinyurl.com/bt23zgu>

This site provides both practical and emotional information on caregiving, including webinars and videos. An Online Community is also available.

American Heart Association: Caregiver Support

<https://www.heart.org/en/health-topics/caregiver-support>

This section provides information on the rights and responsibilities of caregivers, as well as lifestyle and communication tips.

Caregiver Action Network (CAN)

<http://www.caregiveraction.org/>

CAN is a national nonprofit organization dedicated to empowering family caregivers to act on behalf of themselves and their loved ones, and to remove barriers to their health and wellbeing.

Family Caregiver Alliance (FCA): Caregiving Info & Advice

<https://www.caregiver.org/>

FCA's mission is to improve the quality of life for caregivers and those they care for through information, services, and advocacy.

Family Caregiver Council

<http://familycaregivercouncil.com/>

Leaders of national family caregiver organizations, innovative companies in the active aging space, and aging experts have joined together to form a resource to support the family caregiver.

Heart Failure Society

<https://hfsa.org/patient-hub/patient-tools>

Educational tools and resources to help patients and caregivers.

Lotsa Helping Hands

<http://lotsahelpinghands.com/>

This site lets you create a Care Community and then invite friends and family to join. This can help with coordination of care and include a schedule and tasks which community members can volunteer for.

National Alliance for Caregiving

<http://www.caregiving.org/>

The National Alliance for Caregiving is a non-profit coalition of national organizations focusing on advancing family caregiving through research, innovation and advocacy. Their site also provides information for caregivers.

National Institute on Aging

<https://tinyurl.com/yxmpeqpx>

Make Yourself a Priority, Too: Tips for Caregivers

Michigan Medicine Care Guides: Advance Directives Toolkit

<http://careguides.med.umich.edu/advance-directives>

Visit this site to find information on the Durable Power of Attorney for Health Care (DPOA-HC) form which is the most widely used Advance Directive in the State of Michigan.

Michigan Medicine Social Work Support Services

Call the Frankel Cardiovascular Center Social Work office at (734) 232-1559 to talk to our Clinic Social Worker.

**Together in HF (American Association of Heart Failure Nurses):
Caregiving**

<https://www.togetherinhf.com/group/3>

Provides information and tips for caregivers of heart failure patients.

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