

Heart Success

For Patients with Heart Failure and Cancer



THE UNIVERSITY OF TEXAS
MDAnderson
~~Cancer Center~~

Making Cancer History®

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Heart Failure

The heart is a pump. It sends blood throughout your body. When the heart is damaged, it cannot pump enough blood to the body. This results in a condition called heart failure. Another problem with heart failure is blood can back up and leak into the tissues of the lungs, abdomen and legs. This causes shortness of breath, swelling of the legs and makes you feel tired after regular activities.

Not everyone who has these symptoms has heart failure. Other diseases may cause you to have the same symptoms. When you have these symptoms and they become worse over time, you may have heart failure. Talk with your doctor if you have these symptoms. You may need to have special tests done to diagnose heart failure.

Heart failure along with cancer affects how long you will live. While there is no cure for heart failure, treatments are available. Your symptoms can improve, and your life may be extended. These are the main reasons why early diagnosis and treatment are so important.

It is also important that you make lifestyle changes to promote “heart success.” This includes taking prescribed medicines, stopping smoking, eating healthier and being active.

Heart Failure Symptoms

- Shortness of breath
- Feeling weak and tired after regular activity or while at rest
- Trouble breathing while at rest
- Waking up at night due to coughs or shortness of breath
- Swollen feet, ankles and legs
- Feeling dizzy
- Chest discomfort or pain
- Fast heartbeat

Causes of Heart Failure

Coronary Artery Disease

A common cause of heart failure is coronary artery disease (CAD) or atherosclerosis. CAD is caused by cholesterol (plaque) build-up in the walls of the blood vessels that feed the heart muscle. The blockages reduce blood flow. This weakens the heart, which results in heart failure.

Common Risk Factors for Developing Coronary Artery Disease

- Smoking
- Lack of regular exercise
- High cholesterol
- High blood pressure (hypertension)
- Stress
- Diabetes
- Use of alcohol or illegal drugs

Cancer Treatments

Some medicines and treatments used to treat cancer can be toxic to the heart. Although these treatments are effective at killing cancer cells, they can damage healthy tissue and decrease heart function. Your care team will closely monitor your heart function if you are receiving certain cancer treatments.

Below is a list of cancer medicines that may cause heart problems. Your care team will give you more information about these medicines if they will be used in your cancer treatment.

Alkylating Agents

- Cyclophosphamide (Cytoxan®)
- Ifosfamide (Iflex®)

Anthracyclines/anthraquinolone

- Daunorubicin (Cerubidine®)
- Doxorubicin (Adriamycin®)
- Epirubicin (Ellence®)
- Idarubicin (Idamycin PFS®)
- Mitoxantrone (Novantrone®)

Antimetabolites

- Decitabine (Dacogen®)

Antimicrotubule Agents

- Docetaxel (Taxotere®)
- Ixabepilone (Ixempra®)

Immune Effector Cellular Therapies

- Idecabtagene Vicleucel (Abecma®)
- Lisocabtagene Maraleucel (Breyanzi®)
- Tisagenlecleucel (Kymriah®)
- Axicabtagene Ciloleucel (Yescarta®)
- Brexucabtagene Autoleucel (Tecartus®)
- Ciltacabtagene Autoleucel (CARVYKTI®)
- Belantamab Mafodotin (BLENREP®)

Miscellaneous

- Tretinoin (Vesanoid®)

Monoclonal Antibodies

- Ado-trastuzumab emtansine (Kadcyla®)
- Bevacizumab (Avastin®)
- Pertuzumab (Perjeta®)
- Trastuzumab (Herceptin®)

mTOR inhibitor

- Everolimus (Afinitor®)

Proteasome Inhibitors

- Bortezomib (Velcade®)
- Carfilzomib (Kyprolis®)

Small Molecule Tyrosine Kinase Inhibitors

- Afatinib (Gilotrif®)
- Axitinib (Inlyta®)
- Dabrafenib (Tafinlar®)
- Dasatinib (Sprycel®)
- Lapatinib (Tykerb®)
- Imatinib mesylate (Gleevac®)
- Pazopanib (Votrient®)
- Ponatinib (Iclusig®)
- Sorafenib (Nexavar®)
- Sunitinib (Sutent®)
- Trametinib (Mekinist®)
- Vandetanib (Caprelsa®)

Other Causes of Heart Failure

- Heart attack
- High blood pressure
- Idiopathic cardiomyopathy (unknown cause)
- Toxins (chemotherapy, immunotherapy and radiation treatment to the chest)
- A cause of severe anemia is when organs in the body do not receive enough oxygen
- Sleep apnea
- Thyroid disease
- Pregnancy
- Excessive alcohol use
- Viral infection of the heart
- Heart valve problems
- Rapid, irregular heartbeats
- Genetic abnormalities*

*If a genetic cause is identified, we recommend that first generation family members be checked and screened for heart failure. Early diagnosis and treatment result in more positive outcomes.

Types of Heart Failure

The 2 common types of heart failure, based on the strength of the heart muscle when it contracts, are heart failure with **reduced ejection fraction (HFrEF)** and heart failure with **preserved ejection fraction (HFpEF)**.

Systolic heart failure or heart failure with reduced ejection fraction (EF) is a weakening of the contraction (squeezing) of the heart muscle. **Figure 1 shows heart failure with reduced ejection fraction (HFrEF)**. Notice the enlarged heart chambers (right ventricle and left ventricle). This is due to enlargement of the heart chambers called dilated cardiomyopathy.

Diastolic heart failure or heart failure with preserved ejection fraction (EF) is a stiffening of the heart muscle which does not allow the heart to relax. **Figure 2 shows a heart with diastolic heart failure.** Notice the thickening of the heart muscle around the heart chambers. This is called hypertrophy.

Figure 1. Systolic Heart Failure

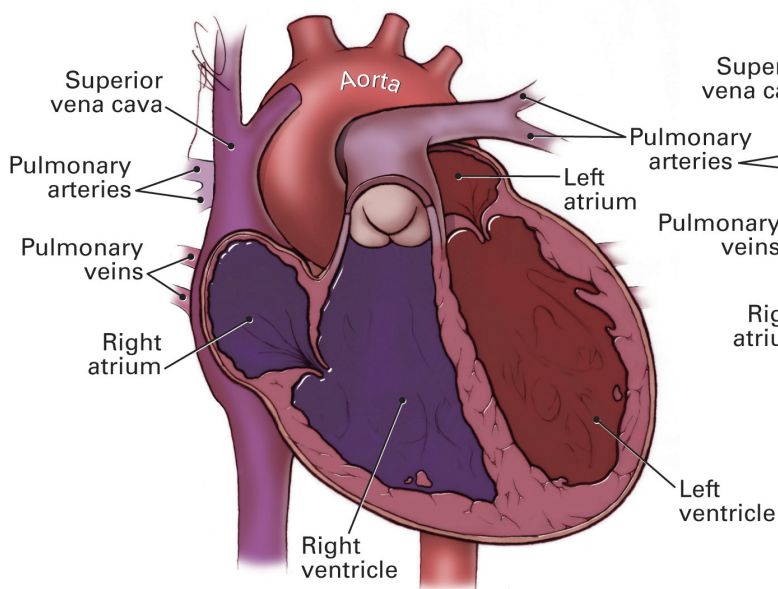
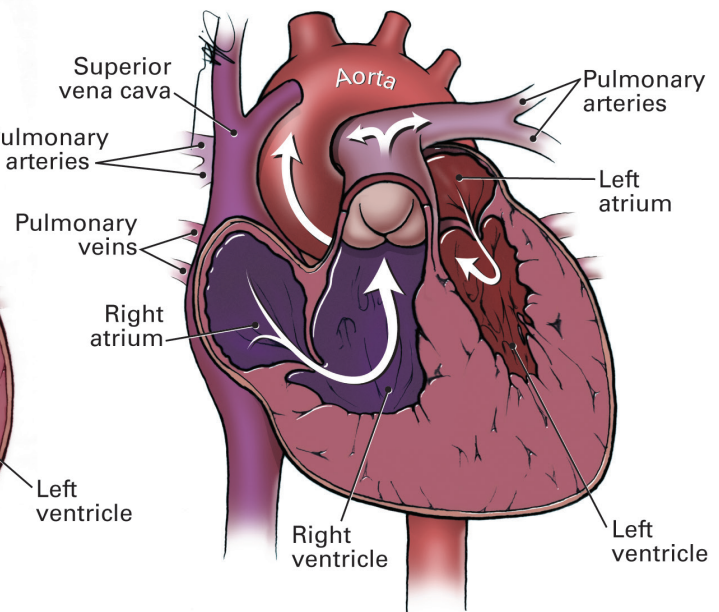


Figure 2. Diastolic Heart Failure



Diagnosing Heart Failure

To diagnose which type of heart failure you have, your doctor will review your medical history and perform a physical exam. After the exam, your doctor may order more tests. These can include diagnostic tests, evaluation procedures and blood tests.

Diagnostic Tests

Echocardiogram

- This test uses sound waves to view the structures of the heart.
- It can measure muscle strength, chamber size and show the heart valves as well as how well they are working.
- The test checks heart function by measuring ejection fraction (EF).
- The EF is a percentage measurement of how well your heart pumps with each beat.
- A normal ejection fraction is equal to or greater than 50%.
- **Systolic** heart failure with reduced ejection fraction (HFrEF) has an EF less than 50%.
- **Diastolic** heart failure with preserved ejection fraction (HFpEF) has an EF equal to or greater than 50%.

Cardiac Magnetic Resonance Imaging (Cardiac MRI)

- This test uses a powerful magnetic field, radio waves and a computer to produce detailed pictures of the structures of the heart.
- Cardiac MRI does not use radiation, and it may provide the best images of the heart for certain conditions.
- Tell your doctor or MRI technologist if you have any devices or metal in your body, such as medical devices like a pacemaker or implant.
- The magnetic field is not harmful, but it may cause some medical devices to malfunction.

Multiple Gated Acquisition (MUGA) Scan

- This test checks your heart function.
- The MUGA scan produces a moving image of the beating heart.
- It provides many important features that can be used to determine the health of the heart's major pumping chambers (heart ventricles).

Electrocardiogram (ECG/EKG)

- This test is a graphic recording of the electrical impulses of your heart.
- This shows your heart rate and rhythm.
- An ECG can show if you have had a heart attack, heart rhythm problems, reduced blood supply to the heart or an enlarged heart.

Chest X-ray

- X-ray of the chest shows heart size and if there is fluid in the heart and the lungs.
- Chest x-rays can also reveal other causes of shortness of breath.

Procedures

Right Heart Catheterization

- Evaluates the pressures in the right side of the heart.
- A doctor inserts a catheter (thin plastic tube) into a vein in the neck, shoulder, arm or leg.
- The catheter is then threaded into the right side of the heart.
- The test measures the amount of fluid in the right side of the heart.

Left Heart Catheterization

- This procedure involves inserting a catheter (thin plastic tube) into a blood vessel, usually in the arm or groin.
- The catheter is then threaded into the arteries of the heart.
- A dye is used to help see blood flow through the vessels.
- This is used to check the presence of coronary artery disease or disease of the heart valve which may cause heart failure.

Blood Tests

Brain Natriuretic Peptide (BNP)

- B-type natriuretic peptide (BNP) is a natriuretic hormone, which means it causes the kidneys to release sodium from the body.
- BNP is a protein initially produced in the brain and released in ventricle muscles of the heart.
- BNP is an important biomarker used in the diagnosis of congestive heart failure (CHF).
- Heart failure can cause more BNP to be released.
- BNP levels are used to assess how well the main pumping chamber of the heart is working.

Troponin (I or T)

- The blood tests are markers to detect injury to the heart muscle.
- The more damage to the heart, the greater the amount of troponin in the blood.

Galectin 3

- This is a neurohormone secreted into the blood stream.
- It is a hormone (such as vasopressin or norepinephrine) produced by nerve cells and secreted into the blood.
- A blood sample can measure levels of Galectin 3 and identify scar tissue in the heart.

Test results help doctors determine the type of heart failure you have, the cause of symptoms, and what type of treatment is best for you.

Heart Failure Treatment

Medicines

Medicines are a common and effective treatment for heart failure. They can improve and may reverse the progress of heart failure. You must follow your care team's recommendations and take your medicines as instructed. The medicines help your heart to function normally.

The following is a list of heart failure medicines, how they act in the body, possible side effects and examples of each. Your care team will talk with you about which types of medicines you need and how much is best for you.



Angiotensin-Converting Enzyme (ACE) Inhibitors

Benefits

- Prevents the body from creating a substance known as angiotensin II, which causes blood vessels to narrow
- Relaxes blood vessels
- Decreases blood pressure
- Strengthens the heartbeat

Possible Side Effects

- Cough
- Dizziness
- Headache
- Kidney problems
- Increased potassium levels
- May cause the lips, tongue, face and cheek areas to swell suddenly (this is rare). These are signs of an allergic reaction and can happen at any time during therapy. **If you have an allergic reaction, seek medical attention right away.**

Generic and Brand Name

- Benazepril (Lotensin®)
- Captopril (Capoten®)
- Enalapril (Vasotec®)
- Fosinopril (Monopril®)
- Lisinopril (Zestril®/ Prinivil®)
- Moexipril (Univasc®)
- Perindopril (Aceon®)
- Quinapril (Accupril®)
- Ramipril (Altace®)
- Trandolapril (Mavik®)

Your doctor will monitor how your body reacts to the medicines for the first few weeks of treatment. If you do not have any problems with the medicines, your doctor will see you on a regular basis.



Angiotensin II Receptor Blockers (ARBs)

Benefits

- Helps dilate the arteries
- Relaxes blood vessels
- Decreases blood pressure
- Strengthens the heartbeat
- ARBs are often prescribed when patients are not able to tolerate ACE inhibitors because of problem side effects.

Possible Side Effects

- Cough
- Dizziness
- Headache
- Kidney problems
- Increased potassium levels
- Like ACE inhibitors, ARBs can cause the lips, tongue, face and cheek areas to swell suddenly. These are signs of an allergic reaction; they can happen at any time during therapy. **If you have an allergic reaction, seek medical attention right away.**

Generic and Brand Name

- Candesartan (Atacand®)
- Eprosartan (Teveten®)
- Irbesartan (Avapro®)
- Losartan (Cozaar®)
- Olmesartan (Benicar®)
- Telmisartan (Micardis®)
- Valsartan (Diovan®)

Your doctor will monitor how your body reacts to this medicine for the first few weeks of treatment and then as needed.



Angiotensin Receptor-Neprilysin Inhibitor (ARNi)

Benefits

- Reduces the workload on the heart
- Reduces blood pressure
- **Do not** take at the same time as an ACE inhibitor or ARB.
- Taking multi-medicine therapy may increase the chances of side effects.

Possible Side Effects

- Decreased blood pressure
- Elevated potassium level
- Dizziness
- Cough
- Kidney failure

Generic and Brand Name

- Sacubtilril-valsartan (Entresto®)



Sodium-Glucose Cotransporter-2 (SGLT-2) Inhibitors

Benefits

- Reverses cardiac remodeling (changes in the size, shape, structure and function of the heart)
- Lowers blood sugar level
- Helps kidneys rid the body of salt
- Improves contraction and relaxation of the heart

Possible Side Effects

- Lightheadedness
- Increases in urination
- Nausea or upset stomach
- Itching, redness, or swelling of the area between the anus and genitals
- Fever, runny nose or sore throat

Generic and Brand Name

- Dapagliflozin Propanediol (Farxiga®)
- Empagliflozin (Jardiance®)



Beta Blockers

Benefits

- Blocks beta-receptors in the heart
- Decreases blood pressure
- Slows heart rate
- Improves heart function

Possible Side Effects

- Dizziness
- Fatigue
- Headache
- Slower heart rate
- Decreased blood pressure
- Decreased sex drive
- May mask low blood sugar symptoms, including dizziness, irritability, shaking and nausea
- If you have asthma, chronic obstructive pulmonary disease (COPD) or other lung conditions, your symptoms may worsen. For example, you may experience wheezing after taking the medicine.

Generic and Brand Name

- Carvedilol (Coreg®, Coreg CR®)
- Metoprolol succinate (Toprol XL®)
- Bisoprolol (Zebeta®)



Digoxin

Benefits

- Increases the strength of the heart's contraction
- Reduces workload on the heart
- Slows certain types of irregular heartbeats

Possible Side Effects

- Decreased heart rate
- Headache
- Large amounts of digoxin can be harmful. Signs of digoxin toxicity include nausea, vomiting, abdominal pain, blurred vision and colored vision changes (green or yellow halos around lights). You may need blood tests to check the level of digoxin in the blood. An appropriate digoxin level for heart failure patients is between 0.5 nanogram per milliliter (ng/mL) and 1 ng/mL.

Generic and Brand Name

- Lanoxin, Lanoxicaps (Digitek®)



Diuretics

(sometimes called “water pills”)

There are different types of diuretics. They are often prescribed along with other high blood pressure medicine. They may be combined with another medicine in one pill.

Benefits

- Helps the kidneys rid the body of fluid and salt
- Decreases blood pressure
- Reduces workload on the heart

Possible Side Effects

- Decreased blood pressure
- Electrolyte imbalance
- Increased urination
- Increased uric acid
- Increased blood sugar levels
- Leg cramps

Generic and Brand Name

- Bumetanide (Bumex®)
- Furosemide (Lasix®)
- Torsemide (Demadex®)
- Hydrochlorothiazide (HCTZ)
- Spironolactone (Aldactone®)
- Eplerenone (Inspra®)
- Metolazone (Zaroxolyn®)



Vasodilators

Benefits

- Helps the blood vessel walls relax
- Reduces workload on the heart

Possible Side Effects

- Low blood pressure
- Dizziness
- Increased heart rate
- Headaches

Generic and Brand Name

- Hydralazine (Apresoline®)
- Isosorbide dinitrate (Dilatrate®-SR, Isordil®, Sorbitrate®)
- Hydralazine + isosorbide dinitrate (BiDil®)
- Nitroglycerin (Nitro-Bid®, Nitrodisc®, Nitro-Dur®, Nitrogard®, Nitrol®, Nitrostat®, Transderm-Nitro® and Tridil®)



Inotropic Agents

These medicines are given directly into a vein and usually reserved for severe heart failure.

Benefits

- Increases the strength of the contraction of the heart
- Reduces workload on the heart

Possible Side Effects

- Decreased or increased blood pressure
- Headache
- Irregular heartbeats
- Increased heart rate

Generic and Brand Name

- Dobutamine (Dobutrex®)
- Dopamine (Intropin®)
- Milrinone (Primacor®)



You must take all your medicines as instructed by your care team.

Your symptoms will come back if you stop taking your medicines. This can be life threatening. If you have questions, talk with your care team.

How to Take Your Heart Failure Medicines

- Take all medicines exactly as directed, even if you feel well.
- Create a schedule. Stay on the same schedule each day.
- You do not need to take all your medicines at one time. You can take them 1 to 2 hours apart.
- Taking all the medicines together can lead to very low blood pressure, which can make you feel dizzy or weak.
- If you miss a dose, take it as soon as possible. If you are scheduled to take the next dose in less than 4 hours (less than 8 hours for extended-release medicine), **do not** take the missed dose.
- Measure your blood pressure and heart rate each day and write it down before taking your medicine.
- Watch for signs and symptoms of low blood pressure (dizziness with sudden change in position).
- Ask your pharmacist if you should take your medicine with or without food.
- Store all medicines at room temperature.
- Avoid storing medicines in bathrooms.
- Avoid sudden changes in position and rise slowly from a lying or sitting position.
- Limit your time in the sun. Too much time in the sun may make the side effects of the medicines worse.
- If you have questions, contact the Cardiopulmonary Center at 713-792-4015 or your primary care doctor before stopping your medicine.

Medicines That May Worsen Heart Failure

Some medicines listed below that you take for other medical problems may affect your heart. Your care team will talk with you about how to take these medicines during treatment for heart failure.

Glucocorticoids

- Prednisone
- Dexamethasone
- Hydrocortisone
- Methylprednisolone

Nonsteroidal Anti-Inflammatory Drugs (NSAIDs)

- Ibuprofen
- Naproxen

Thiazolidinediones

- Pioglitazone
- Rosiglitazone

Antiarrhythmics

- Flecainide
- Propafenone
- Sotalol

Calcium Channel Blockers

- Diltiazem
- Verapamil

Other Treatment Options

Although many patients get better with treatment, some may not and will continue to have symptoms. If this happens to you, there are other options. These include:

Coronary Bypass Surgery

- This improves the supply of blood and oxygen to the heart.
- It reroutes blood around clogged arteries.
- Bypassing the blockage can improve heart function.

Heart Valve Surgery

- Replaces heart valves that do not work properly.

Implantable Cardioverter Defibrillator (ICD)

- This device shocks the heart and restores normal rhythm.

Biventricular Pacemaker

- This device helps the heart beat in a regular rhythm and improves heart function.

Ultrafiltration

- This treatment helps remove excess fluid from the body.

Left Ventricular Assist Device (LVAD)

- An implanted device that helps the heart pump.
- This is used only in patients with the most severe heart failure.

Heart Transplant

This surgery is **only** for patients with:

- Long-term heart failure that is not improving with recommended medicines
- Heart muscle disease
- Irreversible heart injury from coronary artery disease or multiple heart attacks
- To be eligible for a transplant, you must be a non-smoker and cancer free for at least 5 years.

Call your doctor if you:



- Have side effects that are potentially harmful, such as uncontrolled bleeding
- Have a much slower or faster pulse than usual
- Are unable to take the medicine due to cost or side effects
- Take over-the-counter medicines

The Role of Magnesium and Potassium

Magnesium and potassium are important minerals that your body needs to work properly. The best way to get these minerals is by eating a variety of foods. Getting the right amount of these minerals in your diet will help manage heart health.

Magnesium

Normal Magnesium Levels

- Help maintain muscle and nerve function
- Keep heart rhythms steady
- Support a healthy immune system
- Keep bones strong
- Control blood sugar levels
- Promote normal blood pressure and
- Provide energy for the body

Foods that contain magnesium include:

- Green leafy vegetables such as spinach.
- Beans and peas, including black-eyed peas and soy, pinto and kidney beans.
- Nuts and seeds, including almonds, cashews and peanuts.
- Unrefined grains, such as those found in whole grain wheat flour.

Potassium

Normal Potassium Levels

- Help maintain a steady heartbeat
- Help the body's cells function correctly
- Help nerves send signals to the muscles
- Keep a normal water balance between the cells and body fluid

Foods that contain potassium include:

- **Fruits:** apricots, bananas, cantaloupe, dates, figs, honeydew, oranges, papayas, prunes, raisins and strawberries.
- **Vegetables:** artichokes, broccoli, brussels sprouts, cabbage, carrots, mushrooms, potatoes, spinach and tomatoes.

Hypokalemia and Hyperkalemia

Some medicines like diuretics (water pills) may cause the body to lose potassium. This can result in low blood potassium levels (hypokalemia). If you take a water pill, your doctor may prescribe a potassium supplement, or you can eat foods high in potassium.

In certain conditions such as with kidney problems and diseases of the adrenal glands, potassium levels may be elevated (hyperkalemia). High potassium levels can cause abnormal heart rhythm, nausea, fatigue, muscle weakness and a tingling sensation.



More serious symptoms of hyperkalemia include slow heartbeat and weak pulse. If you have hyperkalemia or kidney problems:

- **Do not** use salt substitutes that contain potassium.
- **Do not** take potassium supplements.
- Ask your doctor if the medicines you take can cause an increase in blood potassium levels.

Diet and Nutrition

Low-Sodium Diet

Your doctor may recommend changes in your diet. These changes may include lowering your sodium or salt intake to less than 2 grams (2,000 milligrams) per day.

Sodium is a mineral that helps balance fluid in your body. A common source of sodium is table salt. One teaspoon of salt is about equal to 2,300 milligrams (mg) of sodium. Salt makes the body hold water. Excess water makes your heart work harder. You can reduce sodium by not adding salt to your food and avoid foods high in salt.

A low-salt diet is important. It can help:

- You feel better.
- Prevent and control the buildup of fluids around the heart, lungs and legs.
- Control blood pressure.
- Medicines work more effectively.
- Decrease swelling and shortness of breath.

To limit the amount of salt in your diet, follow these suggestions from the National Heart, Lung and Blood Institute.

- Read the food labels to help you pick foods lower in sodium.
- Pay attention to the serving size listed on the label.
- Look for the foods that use these terms on the label: Sodium-free | Very low sodium | Reduced sodium | Light in sodium | Unsalted

Sodium Equivalents

Some foods are labeled “low sodium” or “sodium free.”

- Low-sodium foods = 140 mg or less per serving
- Very low-sodium foods = 35 mg or less per serving
- Sodium-free foods = 5 mg or less per serving

Reading Food Labels

Many canned and packaged foods contain hidden sodium. Carefully read nutrition facts labels and check the sodium content. Although they may not taste salty, many canned, packaged and frozen foods are high in salt.

Read the nutrition label example

- Find the number for sodium.
- This number is the total number of milligrams (mg) of sodium in 1 serving.
- In this example, a ½ cup serving contains 880 mg of sodium, but only 90 calories.
- This product is considered **high** in sodium.

	Amount/serving	%DV*	Amount/serving	%DV*
Nutrition Facts	Total Fat 3g	5%	Sodium 880mg	37%
Serv. Size 1/2 cup (120ml) condensed soup	Sat. Fat 2g	10%	Total Carb. 14g	5%
Servings about 2.5	Polyunsat. Fat 0g		Fiber 1g	4%
Calories 90	Monounsat. Fat 0.5g		Sugars 2g	
Fat Cal. 25	Cholest. 10mg	3%	Protein 2g	
Percent Daily Values (DV) are based on a 2,000 calorie diet.	Vitamin A 0% • Vitamin C 0% • Calcium 2% • Iron 2%			

Helpful Tips

- Pay close attention to the item's serving size, such as ½ cup.
- If you eat more than 1 serving, this increases your sodium intake.
- Also check the ingredient list to find hidden sources of sodium.
- Ingredients high in salt include monosodium glutamate (MSG) and sodium nitrate.

Salt Substitutes

- Some salt substitutes replace sodium with potassium and should not be used when taking certain medicines.
- Blood pressure-lowering medicines, such as ACE inhibitors may cause the body to retain potassium.
- Diuretics (water pills) may cause potassium loss.
- Ask your medical team what is the best salt substitute for you.

Herbs and Spices

- Adding herbs and spices to food can enhance flavors without adding salt.
- When substituting dried herb for salt in a recipe for the first time, start with ¼ teaspoon of dried herbs per 4 servings.
- Additional herbs can be added to taste later.
- Combine strong flavored herbs with 1 or more milder herbs to give a subtle blend.

These products enhance flavor and are low in salt:

- Dried or fresh herbs (basil, oregano, cilantro, turmeric, rosemary)
- Ready to use salt-free spice blends available in grocery stores (Mrs. Dash®)
- Fresh onion and garlic
- Pepper, onion powder, garlic powder and chili powder
- Lemon or lime juice
- Fresh tomatoes or tomato paste
- Peppers and hot sauce
- Vinegar

Foods to Choose

Consider the foods below. They will help reduce salt intake and promote a healthy diet.

Food	Examples	Allowed Daily Servings	Sodium Content per Serving
Fruits	Fresh, frozen, canned	Unlimited	10 mg
Meat and protein	Fresh or frozen lean beef, pork, poultry, lamb, veal and fish, dried beans, lentils, soybeans, peanut butter, unsalted nuts, tofu, eggs	3	60 mg Read labels to make sure sodium has not been added
Milk and dairy	Low-fat or skim milk, low-fat cottage cheese and low-fat yogurt. Cheese is high in sodium, so eat in moderation.	2	150 mg
Grains Choose whole grains that are high in fiber. Try to take in 25 grams of fiber daily.	Bread, brown rice, whole-grain pasta, cooked cereals like oatmeal, home-baked products (limit commercially baked items such as cakes and pastries)	5	150 mg
Fat	Healthy oils such as canola and olive oil, unsalted butter, low-sodium salad dressing like oil and vinegar with herbs	Based on calorie level you need to maintain ideal weight	Check label
Dessert	Gelatin, popsicles, reduced-fat ice cream and sherbets, low-fat frozen yogurt, hard candies	Based on calorie level you need to maintain ideal weight	Check label
Soup	Low-sodium bouillon or broth, homemade soup with low sodium bouillon	1	Check label

Foods to Avoid

These foods are high in sodium:

- Canned vegetables and tomato sauce
- Canned soups, dehydrated soups and ramen noodles unless they are marked low sodium
- Bacon, salt pork and processed meats like ham, lunch meat, hot dogs
- Saltines and other crackers, salted pretzels, salted nuts and seeds and breads with salt topping
- Salted potato chips, corn chips and chow mein noodles
- Dips, spreads and commercial salad dressings (including the dry packaged variety)
- Packaged and prepared rice, pasta and stuffing mixes which have seasoning, or sauce added
- Cheese
- Seasoned salts (garlic salt), soy sauce, Worcestershire sauce, barbecue sauce, pickles, olives and monosodium glutamate (MSG)

Many of the foods listed above have “low sodium” or “no added salt” varieties that are acceptable on a reduced-sodium diet.

Keep These Things in Mind When Planning Meals

- Plan tasty and healthy meals each day.
- Cook low-sodium recipes.
- Remove the salt shaker from the table.
- Choose snacks that do not contain salt, such as fresh fruit and vegetables.
- When eating out, request that no salt or MSG be added to your food.
- Ask to have your sauce or dressing placed “on the side.”
- Cafeteria food is often high in sodium.
- Ask if there are low salt alternatives.
- If you take antacid tablets, choose the sodium-free variety.
- Give yourself time to get used to eating less salt.
- You may not like it initially, but your heart is worth the effort.

Find low sodium, heart healthy recipes on the websites listed below.

The American Heart Association

<https://www.Heart.org/en/Healthy-Living/Healthy-Eating>

The Academy of Nutrition and Dietetics

<https://www.EatRight.org>

National Heart Lung and Blood Institute

<https://www.NHLBI.NIH.gov/health/educational/wecan/tools-resources/nutrition.htm#recipes>

For more information or to schedule a nutrition consultation, call Clinical Nutrition at 713-792-2254.

Lifestyle Modifications

Listen to what your body tells you and rest when needed. Other things you can do to help your heart include staying at a healthy weight, stopping smoking and reducing stress. Keep your medical appointments so that your treatment plan can be monitored.

Manage Weight

You may have lost weight due to cancer treatment, and you may be trying to gain weight. You should eat a well-balanced, healthy, low-sodium diet to regain your strength and restore your health.

Keep track of your weight. A sudden weight gain may be caused by fluid retention. You may have too much fluid if you have:

- Gained more than 2 pounds each day for 2 days in a row
- Have gained more than 5 pounds in a week.

Weight gain from fluid retention can cause swelling of the legs or abdominal bloating. Weight gain from fluid retention can cause swelling of the legs or abdominal bloating.

Monitor Weight

- Weigh yourself at the same time every morning before breakfast.
- Write down your daily weight to track your progress.

Weight Changes Caused by Chemotherapy

If you receive chemotherapy, you may lose weight because of nausea, vomiting or loss of appetite. Weight loss of more than 2 pounds per week is not healthy. This may indicate loss of muscle mass or dehydration.

Increasing your intake of calories and protein can help slow or stop weight loss. High protein foods include cooked meats, poultry, fish, eggs, yogurt and cottage cheese. You can also get protein from meat alternatives such as vegetable protein. These include veggie burgers, beans and peas.

You may gain weight while receiving chemotherapy. This weight gain can be caused by:

- Increase of IV fluids
- Corticosteroids (dexamethasone)
- Decreased physical activity
- Overeating caused by stress

If you have questions, contact the Cardiopulmonary Center at 713-792-4015 or your doctor before stopping your medicine.

Tobacco

One of the things you can do to improve your health is to stop using all tobacco products. Cigarette smoking increases heart disease risk by 3 to 6 times and can worsen heart failure.

Smoking

- Lowers the amount of oxygen in your blood
- Makes your heart beat faster
- Makes your blood vessels smaller
- Increases your blood pressure
- Smoking also can lead to many types of cancer, especially cancers of the lung, mouth and tongue.
- Only nonsmokers are considered for a heart transplant.

There are support programs, quitting aids and medicines to help you stop smoking. For more information about quitting, contact the resources below.

MD Anderson Cancer Center Tobacco Research and Treatment Program

713-792-QUIT (713-792-7848)

Toll Free: 866-245-0862

American Cancer Society Quitline® Phone Counseling Program

Toll Free: 800-ACS-2345 (800-227-2345)

Press Option 3

Texas Residents Toll Free: 877-937-7848

www.Cancer.org

Physical Activity

Before you start an exercise program, ask your doctor about how much activity is safe for you. Put physical activity in your schedule at the same time everyday so it becomes a regular part of your lifestyle.

- Physical activity strengthens your heart muscle and improves your quality of life.
- Choose activities that you enjoy.
- Start slowly and increase your activity gradually based on what your body tells you.
- At first, choose lighter activities, such as walking or shopping.
- Take rest breaks often.
- As you begin to feel stronger, increase your activity level.
- If you feel very tired after an activity, you may be doing too much.
- Reduce your activity level and take it easy until you feel better.
- Be patient with yourself.
- It takes time to build strength and endurance.

If you have chest pain during activity:

- **Stop your activity right away** and rest.
- Take your chest pain medicine.
- Place a nitroglycerin tablet under your tongue as directed.
- If your pain does not go away within 5 minutes after taking the medicine, follow these steps:
 1. Place another pill under your tongue and wait 5 minutes.
 2. If the pain is not relieved, take another pill and call 911 **right away**. This is a medical emergency.

Rest

- Allowing time to rest and relax is important for your health and well-being.
- Take a 30 minute rest break to read or watch television between activities.
- During this time, try to raise your feet to help reduce swelling in the legs and ankles.
- Try taking a nap after lunch to renew energy levels and ease stress on the heart.

Lifting Guidelines

- Lifting heavy objects and straining to reach objects make the heart work harder.
- Instead of lifting heavy grocery bags or piles of laundry, use a wheeled cart or divide the items into smaller bundles.
- If you plan to start a weight lifting program, talk with your doctor before you begin.

Sexual Activity

Most people with heart failure can continue enjoying sexual activity. Being physical with your partner will not damage the heart or cause a heart attack. You can have sexual activity if:

- Your symptoms are under control
- You are correctly taking your medicine
- You feel well

Some patients with heart failure feel less sexual desire. Talking with your care provider and partner may reduce stress and anxiety. There are multiple ways to express physical love and affection.

You may resume sexual activity when you feel ready. If you tolerate moderate physical activity during a treadmill test, the risk of problems during sexual activity is low. Have a treadmill test if you expect to have daily sexual activity. If you cannot tolerate exercise, talk with your partner about other ways to show love and affection. Talk with your doctor if you have not performed sexual activity for some time. You may not be in good condition. Your doctor may want to check your health before beginning sexual activity.

Follow These Guidelines for Sexual Activity

- Choose a time when you are rested, relaxed and free from stress.
- Avoid activity right after a heavy meal.
- Avoid activity after a recent hospital stay due to heart failure.
- If you feel shortness of breath, palpitations (increased heart rate) or chest discomfort, **stop and rest** for a short time.

Medicine for Erectile Dysfunction (ED)

- **Do not** take ED medicines at the same time you take nitroglycerin or medicines for benign prostatic hypertrophy (BPH).
- These medicines include doxazosin (Cardura®), prazosin (Minipress®) and tamsulosin (Flomax®).
- Combining these medicines may cause your blood pressure to become too low.

Advance Care Planning

Addressing end of life issues may be difficult. It is better to make these tough decisions before there is a need for them. Advance care planning increases the chances that your wishes will be met. Advance directives are documents that state your wishes for care at the end of your life. You have the right to decide:

- Who will care for you.
- What kind and how much care you want (or do not want) when death is near.
- Where you want to die.

Think about the medical, legal and spiritual issues that are most important to you. Complete and sign the 3 types of advance directives that comply with your state law:

1. Living Will
2. Medical Power of Attorney
3. Out-of-Hospital Do Not Resuscitate (DNR) orders.

These documents become effective only when you are unable to make or communicate your decisions.

After completing the advance directives, give copies to your family, friends and doctor. Take time to talk about your choices with your loved ones. Your friends and family may find comfort in knowing your wishes.

Living Will

This advance directive is an outline of your health care wishes. It gives specific details about what treatment you do or do not want. A Living Will takes effect only when you are in the terminal or irreversible phase of illness or injury. It addresses the use of comfort care and life-sustaining treatments (such as artificial nutrition, hydration, dialysis, and breathing support).

Medical Power of Attorney

Medical Power of Attorney is a document that allows you to designate a trusted family member or friend to make medical decisions for you if you become unconscious or mentally incapable of making those decisions for yourself.

Out-of-Hospital Do Not Resuscitate (DNR) Orders

Out-of-Hospital Do Not Resuscitate (DNR) orders are signed by your doctor and tells emergency medical personnel not to use certain procedures to resuscitate or revive you.

For more information on advance directives, call Social Work at 713-792-6195.

When to Call Your Health Care Team

Call a member of your health care team if you have:

- Weight gain of more than 2 pounds each day for 2 days in a row.
- Increased swelling in your abdomen, legs or feet.
- Increased shortness of breath.
- Increased tiredness or weakness.
- New or increasing chest pain.
- Feeling your heart beating faster.
- Dizziness, feeling light-headed or restlessness.

If any of these symptoms become worse, **go to the nearest hospital emergency center or call 911.**

Cardiopulmonary Center

Main Building

Floor 6, Elevator C

Monday through Friday, 8 a.m. to 5 p.m.

713-792-4015

Mays Clinic

Floor 6, Elevator U

Monday through Friday, 8 a.m. to 5 p.m.

713-563-7100

Pharmacy

Main Building

Floor 2, Elevator C

Monday through Friday, 8 a.m. to 8 p.m.

Weekends and holidays, 8 a.m. to 5 p.m.

713-792-6125

Main Building

Floor 10, Elevator B

Monday through Friday, 8 a.m. to 8 p.m.

Closed weekends and holidays

713-745-7180

Mays Clinic

Floor 2, The Tree Sculpture

Monday through Friday, 8 a.m. to 6 p.m.

Closed weekends and holidays

713-563-8222

Resources

The Learning Center

The Learning Center is a patient education library that provides current and reliable information on cancer prevention, treatment, coping and general health. Resources are available at our Texas Medical Center locations:

Main Building

Floor 4, Elevator A

713-745-8063

Mays Clinic

Floor 2, near Elevator T

713-563-8010

For online service, email

AskTLCStaff@MDAnderson.org or send a message through MyChart messaging.

More Resources

These organizations provide accurate, up-to-date information on heart disease.

Heart Failure Society of America, Inc.

301-312-8635

www.HFSA.org

American Heart Association

800-242-8721

www.Heart.org

