

Congestive Heart Failure

Overview

Congestive heart failure (CHF) is the leading cause of cardiovascular disease and related deaths with nearly 5 million cases in the United States. CHF is characterized by progressive deterioration of left ventricular function, less blood circulating to body tissues, fatigue, shortness of breath, and congestion. When the heart cannot effectively pump blood throughout the body our tissues become oxygen and nutrient deprived. As CHF progresses to advanced stages, the kidneys respond by signaling the body to retain fluid and sodium in order to increase blood volume. Fluid buildup causes swelling to occur, usually in the hands or feet (edema) or in the abdomen (ascites). Fluid accumulation can also occur in the lungs and heart, which can be fatal without treatment.

Risk Factors

- Coronary Artery Disease (CAD)
- History of cardiomyopathy
- Lung disease such as chronic obstructive pulmonary disease (COPD)
- Medications
- Unknown (idiopathic) causes
- Previous heart attack
- Severe anemia
- Alcohol abuse
- Disorders of the heart valves
- Arrhythmias
- High blood pressure (hypertension)

Symptoms

You may not have any symptoms of heart failure, or the symptoms may range from mild to severe. Symptoms can be constant or can come and go.

- Shortness of breath
- Fatigue
- Edema in legs, ankles, and feet
- Reduced ability to exercise
- Sudden weight gain from fluid retention
- Chest pain/angina
- Dizziness
- Rapid or irregular heartbeat
- Swelling of abdomen (ascites)
- Mental confusion, memory loss

Nutrition and CHF

Lifestyle modifications such as regular exercise and a heart healthy diet can improve your quality of life and aid in stress and weight management. Such changes help prevent or manage co-existing conditions like high blood pressure, diabetes, and obesity. Maintaining a healthy lifestyle has been shown to help reduce cholesterol levels and improve overall quality of life. Please consult your healthcare provider or registered dietitian prior to implementing an exercise routine to avoid exacerbating heart conditions.

Sodium

Sodium causes an increase in fluid accumulation in the body's tissues. Because people with CHF often retain excess fluid, they become very sensitive to how much sodium and water they can consume. Restricting salt and fluid is often recommended due to the tendency for fluid to accumulate in the lungs and surrounding tissues. Reducing sodium intake can also help lower blood pressure and reduce the risk for cardiovascular disease.

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Sodium can be found in a variety of forms besides salt. Check food labels for the following: monosodium glutamate (MSG), baking powder, baking soda, sodium nitrate, and sodium citrate.

Low Sodium Foods to Include:

- **Meats:** Fresh or frozen un-breaded meats; Eggs
- **Vegetables:** Fresh or frozen vegetables; Canned vegetables with no added salt
- **Starches:** English muffins; Bagels; Plain pasta; Noodles; Rice; Cooked hot cereals; Unsalted crackers
- **Fats:** Vegetable oils (e.g. canola, olive); Unsalted butter
- **Seasonings:** Fresh garlic or garlic powder (not garlic salt); Fresh onion or onion powder (not onion salt); Black pepper; Lemon juice; Vinegar

High Sodium Foods to Avoid:

- **Meats:** Processed deli meats (pepperoni, bologna, salami, pastrami, ham, turkey, corned beef); Sausage; Hot dogs; Breaded meats (chicken nuggets, fish sticks); Canned meats (*Spam*); Smoked or cured meats (salt pork, bacon); Lox and herring
- **Dairy:** Buttermilk; Processed cheese spreads (*Cheez Wiz*, *Easy Cheese*); Processed cheese (*Velveeta*, American cheese, nacho cheese); Pimento cheese
- **Vegetables:** Regular canned vegetables and vegetable juices; Pickles; Relish; Olives; Pepperoni; Sauerkraut
- **Starches:** Biscuits; Prepared mixes (pancakes, muffins, cornbread); Seasoned rice, noodle, or potato mixes (Rice-a-Roni, macaroni and cheese); Coating mixes (seasoned bread crumbs, Shake 'n' Bake); Snack foods (potato chips, corn chips, pretzels, pork rinds, crackers, tortilla chips, nuts, popcorn, sunflower seeds)
- **Fats:** Bacon; Salt pork; Commercial salad dressings
- **Seasonings:** Table salt; Seasoning seasonings (garlic salt, onion salt, celery salt); Meat tenderizer; Bouillon cubes; Flavor enhancers; Condiments (BBQ sauce, steak sauce, soy sauce, teriyaki sauce, oyster sauce, ketchup)
- **Processed Foods:** Canned soups; Frozen prepared foods; Fast foods

Fluids

Individuals with CHF must keep track of their fluid intake because it can put an increased strain on the heart, forcing it to work harder. Too much fluid in the body can cause shortness of breath, poor appetite, and weight gain due to edema and swelling. Talk to your health care provider or registered dietitian about how much fluid you should be drinking per day as you may require a fluid restriction depending on the severity of CHF. It is important to note that fluids don't only refer to liquids. Foods that are liquid at room temperature, or have a high fluid content, such as popsicles, soup, ice cream, yogurt, pudding and Jell-O are also considered fluids.

Tips to Manage Thirst:

- Limit high salt foods.
- Use smaller glasses for drinking.
- Drink small portions during the day, rather than large ones all at once.
- Make ice cubes from your favorite drinks to suck on. This way you will take in less fluid.
- Freeze grapes and eat throughout day as one of your fruit servings.

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- Colder drinks quench thirst better than warm.
- Suck on sugar free hard candy or chew sugar free gum.
- Add lemon juice to water or ice. The sour taste can help quench thirst.
- Brush teeth often. It is important to maintain oral hygiene.

Fat and Cholesterol

A diet high in saturated fat, trans fat, and cholesterol is one of the greatest risk factors for heart disease. Foods that contain saturated fat and cholesterol come from animal sources such as meat, poultry, and dairy products. High blood cholesterol levels eventually lead to a condition called atherosclerosis, a buildup of plaque in your arteries that can result in a heart attack or stroke. Eating a diet that emphasizes vegetables, fruits, whole grains, and low-fat dairy sources has been associated with improved outcomes and a better quality of life.

Foods to Include:

- **Protein:** Lean cuts (e.g. loin, leg, round); extra-lean hamburger (97% lean); Meats with fat trimmed; Skinless poultry; Fish (e.g. tuna, salmon, mackerel)
- **Dairy:** Low fat (1%) or fat free milk; Low fat or fat free yogurt; Cheese with 15 – 20% milk fat or less; Egg whites
- **Vegetables:** Aim for 3-5 servings per day of a variety of fresh, frozen, or canned vegetables without added fat, sauce, or salt
- **Fruits:** Aim for 2-4 servings per day of a variety of fresh, frozen, or canned fruits
- **Grains:** Whole grain breads and cereals; Whole wheat pasta; Brown or wild rice; Oatmeal; Oat bran
- **Fats and Oils:** Canola, olive, or peanut oil; Vegetable oils (e.g. safflower, sunflower, sesame, soybean oil); Soft margarines without trans fat (e.g. *Benecol*, *Promise Activ*, *Smart Balance*); Nuts and nut spread (e.g. almond butter, peanut butter); Avocados; Ground flaxseed, flaxseed oil; Soybeans; Walnuts; Seeds



Foods to Limit:

- **Protein:** High-fat meat cuts (ribs, T-bone steak, regular ground beef, bacon, sausage); Cold cuts; Salami; Bologna; Hot dogs; Organ meats (liver, brains, sweetbreads); Poultry with skin; Fried meat, poultry, or fish
- **Dairy:** Whole milk, 2% milk; Full fat yogurt; Ice cream; Cheese, cream cheese, cottage cheese; Sour cream; Butter; Ice cream; Egg yolks
- **Vegetables:** Vegetables that are fried or prepared with butter, cheese, or cream sauce
- **Fruits:** Fruits served with butter or cream
- **Fats and Oils:** Coconut, palm, or kernel oil; Stick margarine; Lard; Shortening; Bacon fat; Salad dressings
- **Other Foods:** Baked products (doughnuts, biscuits, muffins, croissants, cakes, pies, cookies); Chips; Snack mix; Buttered popcorn; Chocolate

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Fiber

Diets that are high in fiber have been linked to a lower risk of heart disease and related comorbidities such as obesity and diabetes. Fiber is a type of carbohydrate that the body can't digest but is essential for maintaining good health. Not only does fiber help regulate blood sugar and aid in digestion, it also plays a crucial role in reducing cholesterol levels. There are two forms of fiber, soluble fiber and insoluble fiber and each have important yet distinguishable benefits.

Soluble Fiber directly lowers cholesterol levels by binding to it and excreting it in feces. Because fiber cannot be absorbed, the bound cholesterol is prevented from being absorbed and used by the body, hence the total body cholesterol is reduced. Food sources include oats, peas, beans, apples, citrus fruits, carrots, barley, and psyllium.

Insoluble Fiber does not have a direct effect on cholesterol, however, it is still an important aspect of the diet. Insoluble fiber acts as a bulking agent to help move food through your digestive system to promote bowel regularity and prevent constipation. Food sources include whole wheat flour, wheat bran, flaxseeds, chia seeds, leafy greens and vegetables such as cauliflower, green beans, and potatoes.

Dining Out

Don't be afraid to eat out at restaurants. You can still limit sodium, cholesterol, and saturated fat while dining out.

Tips to help you make healthier choices:

- Avoid fast food restaurants.
- Request foods to be prepared by baking, broiling, or grilling and without extra oil.
- Do not add salt to the foods prepared.
- Limit condiments such as ketchup, soy sauce, or BBQ sauce.
- Ask for dressing and sauces on the side.

Tips for Reading Food Labels

1. Check for sodium on the Nutrition Facts Label. A Daily Value (DV) of 20% or higher
2. means the food is high in sodium. A DV of 5% or less means it's low in sodium.

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3. Common terms associated with sodium to look for on food labels:
 - **Sodium Free:** Less than 5 mg of sodium per serving.
 - **Very Low Sodium:** 35 mg or less of sodium per serving.
 - **Low Sodium:** 140 mg or less of sodium per serving.
 - **Reduced Sodium:** At least 25% less sodium than the original product.
 - **No Added Salt/ Unsalted:** No salt was added during processing, not necessarily sodium free.
4. Choose foods that are low in saturated fat, trans fat, and cholesterol. A DV of 5% or less is considered low.
5. Look for foods that contain fiber to help lower cholesterol levels. A DV of 20% or food items containing at least 5 grams per serving are considered high in fiber.

Sample Label for
Macaroni and Cheese

| Nutrition Facts | |
|---|-----------------------|
| Serving Size 1 cup (228g) Servings Per Container 2 | |
| Amount Per Serving | |
| Calories 250 | Calories from Fat 110 |
| % Daily Value* | |
| Total Fat 12g | 18% |
| Saturated Fat 3g | 15% |
| Trans Fat 1.5g | |
| Cholesterol 30mg | 10% |
| Sodium 470mg | 20% |
| Total Carbohydrate 31g | 10% |
| Dietary Fiber 0g | 0% |
| Sugars 5g | |
| Protein 5g | |
| Vitamin A | 4% |
| Vitamin C | 2% |
| Calcium | 20% |
| Iron | 4% |

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs:

| | Calories: 2,000 | 2,500 |
|--------------------|-------------------|---------|
| Total Fat | Less than 65g | 80g |
| Sat Fat | Less than 25g | 25g |
| Cholesterol | Less than 300mg | 300mg |
| Sodium | Less than 2,400mg | 2,400mg |
| Total Carbohydrate | 300g | 375g |
| Dietary Fiber | 25g | 30g |

Start Here

Limit these Nutrients

Get Enough of these Nutrients

Footnote

Quick Guide to % DV
5% or less is low
20% or more is high

Nutrition and Lifestyle Guidelines

- Eat a healthy diet that emphasizes vegetables, fruits, whole grains, and legumes.
- Avoid eating foods high in saturated fat, trans fat, and cholesterol.
- Aim to eat fish twice a week to increase your omega-3 fatty acid intake.
- Limit sodium intake by cooking at home when possible and limiting intake of processed and prepackaged foods.
- Use spices and herbs for seasoning instead of salt.
- Rinse canned vegetables, beans, meats, and fish in water before eating to reduce the sodium content.
- Increase intake of fiber to help lower cholesterol levels. You should aim for 25-35 grams of fiber per day.
- Bake, broil, grill, boil, or steam foods instead of frying.
- Maintain a healthy weight. Discuss with your registered dietician if exercise is appropriate for you.
- Keep alcohol consumption to 1 drink per day for women and two drinks per day for men. Excessive alcohol consumption contributes to high blood pressure, irregular heartbeats, and obesity.
- Quit smoking. Smoking damages your blood vessels, raises blood pressure, and reduces the amount of oxygen in your blood.

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