

Diet and Nutrition Guide for Pulmonary Hypertension Patients



Your diet and nutrition are very important for managing your disease 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 disease.

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.

Sodium Management for Pulmonary Hypertension Patients

As a part of managing your pulmonary hypertension, 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 disease.

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 disease 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 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 pulmonary hypertension 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 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 pulmonary hypertension 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%
<small>* 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.</small>	

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 2000 mg per 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)
<i>Example</i>	<i>1 can of Campbell's low sodium chicken noodle soup</i>	<i>120mg</i>	<i>1 serving of each</i>	<i>120+ 48 = 168mg</i>
	<i>Dannon Greek Vanilla Yoqurt</i>	<i>48mg</i>		
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 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):



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 symptoms worsen. Limiting fluid intake is key to preventing ER 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

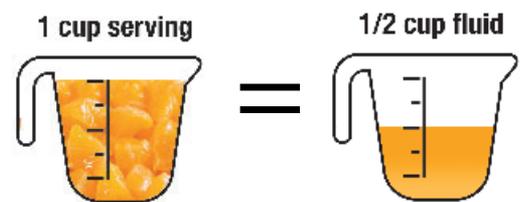
Fluids that are part of a food	
Soup	Broth
Gravies	Sauces

**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. your fluid limit for the day.

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!

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