

What is nutrition therapy for cirrhosis?

Nutrition therapy for cirrhosis consists of a low sodium, high protein diet. The

following information will explain why this type of diet is important along with tips to help you follow it to the best of your ability.



- It helps the liver perform its many functions
- Your body needs more protein and calories than it has in the past
- The body may not be able to store as many nutrients as usual
- It lowers the risk of infections
- It lowers the risk of fluid retention (ascites)
- It provides energy for daily activities and socializing!

How often should I eat?

- Eat every 2-4 hours when awake
- Have a late evening snack before bed
- Eat a snack in the middle of the night if you're awake!

Low sodium diet

Why do I need to follow a low sodium diet?

Fluid buildup (often called ascites or edema) is a common complication with liver cirrhosis. Too much sodium in the diet can lead to more fluid buildup. **Sodium** is a mineral that attracts water and plays a role in fluid balance in our bodies.

How do I follow a low sodium diet?

- Limit your sodium intake **to no more than 2,000 mg (milligrams) per day.**
- **Sodium** is a naturally occurring mineral found in almost all foods. Read Nutrition Facts labels

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



to determine how much sodium you are eating (see Figure 1 below):

- Always look at the serving size, first. Then, look at the sodium contents.
- The example in Figure 1 shows 160mg of sodium in 2/3 cup.
- Consider keeping a notebook and write down everything you eat throughout the day along with how much sodium is in it, using Nutrition Facts labels, like in Figure 1.
 - You can also use food tracking websites or apps such as MyFitnessPal.com or Cronometer.com to track your sodium intake. These are especially helpful when you come across a food without a Nutrition Facts label.
- Use restaurant and fast-food establishment websites to look up nutrition facts and information ahead of time to check the menu's sodium content to make a healthier choice.
- Consider using www.healthyheartmarket.com for an online grocery store of just low sodium foods.

Figure 1

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 food 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.

What should I monitor when following a low sodium diet?

Salt

Salt is a major source of sodium. It is made up of two minerals: sodium and chloride. All forms of salt (such as sea salt and pink Himalayan salt) have just as much sodium as regular salt. **1 teaspoon of salt contains 2,300mg of sodium.** Salt is often added to foods, especially processed foods, which increases their sodium content. Please avoid salt substitutes such as No-Salt, Nu-Salt, Also Salt. These are very high in potassium and may cause an imbalance in electrolytes, especially if taking certain diuretic medications.

What seasonings can I use instead of salt?

- Spices (try *Mrs. Dash* salt-free brand)
- Herbs
- Lemon juice
- Vinegars
- Visit www.saltfreerubs.com for more zero sodium seasonings

Water softeners

If you have well water, water softeners can add additional sodium since they are often made of sodium chloride. **Try using potassium chloride softeners instead or drink bottled water.**

What if I am told my sodium level is too low?

This is usually from having too much fluid buildup in the body. **This does not mean you want to eat more sodium.** Remember, eating too much sodium will make the fluid buildup worse. If you are told this, continue following your low sodium diet unless otherwise directed by your doctor.

Low-salt food list

Good choices	Limit or avoid
Meat, eggs: <ul style="list-style-type: none">• Fresh beef, pork, lamb, poultry, fish, wild game• Fresh eggs	Fast food and restaurant food

	<p>Meat, eggs:</p> <ul style="list-style-type: none"> • Processed meats (bacon, sausage, pepperoni, hot dogs, luncheon/deli meats, corned beef, anchovies, sardines) • Vegetarian “meats”/ vegetarian entrees • Smoked meats or fish, jerky • Microwaveable/frozen meals • Egg beaters
<p>Milk, yogurt, cheeses:</p> <ul style="list-style-type: none"> • Milk or yogurt • Frozen yogurt, ice cream • Natural Swiss cheese • Low-sodium cheeses • Low-sodium cottage cheeses 	<p>Milk, yogurt, cheeses:</p> <ul style="list-style-type: none"> • Buttermilk, malted milk • Processed cocoa • Processed cheese • Bleu, feta, and other salty cheeses • Regular cottage cheese • Dairy-free alternatives may be higher in sodium
<p>Grains, starches:</p> <ul style="list-style-type: none"> • Low sodium bread, rolls, breadsticks, bagels • Plain taco shells, tortillas • Pasta, barley, rice cooked without salt • Unsalted cooked cereal • Dried beans, lentils, peas • Unsalted popcorn, pretzels, crackers, chips 	<p>Grains, starches:</p> <ul style="list-style-type: none"> • Bread, rolls, breadsticks made with salt or cheese • Stuffing mixes • Pasta or rice with seasoning packets • Instant hot cereals, ready-to-eat cereals • Salted crackers • Baking mixes such as cakes, pancakes, waffle, or muffins • Salty chips, pretzels, crackers, etc.
<p>Nuts and Seeds:</p> <ul style="list-style-type: none"> • Unsalted nuts and seeds • Unsalted peanut butter or other nut butters 	<p>Nuts and Seeds:</p> <ul style="list-style-type: none"> • Salted nuts and seeds • Salted peanut butter
<p>Vegetables:</p> <ul style="list-style-type: none"> • Fresh/frozen vegetables without salt added 	<p>Vegetables:</p> <ul style="list-style-type: none"> • Canned vegetables/soups, vegetable juices

<ul style="list-style-type: none"> Homemade tomato sauce or salsa 	<ul style="list-style-type: none"> Pre-made spaghetti/tomato sauces/salsa Instant mashed potatoes, boxed Sauerkraut, olives, pickled vegetables
<p>Fruits:</p> <ul style="list-style-type: none"> Any kind of fruit or fruit juice, fresh, frozen, or canned 	<p>Fruits:</p> <ul style="list-style-type: none"> Adding salt to fruits (such as melon) Glazed or crystallized fruit
<p>Beverages:</p> <ul style="list-style-type: none"> Water, fruit juices Milk Coffee, decaf coffee, teas Cocoa made with milk Soda with no sodium 	<p>Beverages:</p> <ul style="list-style-type: none"> Gatorade or other sports drinks Vegetable juices (V-8) Instant cocoa mixes Instant cappuccino mixes
<p>Desserts:</p> <ul style="list-style-type: none"> Gelatin desserts Homemade tapioca or rice pudding Custard made with milk Hard candy Homemade cake, cookies, pie, sherbet, ice cream (limit to 1 serving or less per day) 	<p>Desserts:</p> <ul style="list-style-type: none"> Instant pudding or other pre-packaged dessert mix Frozen pies Store bought cookies, muffins, cakes, etc.
<p>Fats and oils (use sparingly):</p> <ul style="list-style-type: none"> Olive and avocado oil Unsalted butter 	<p>Fats and oils (use sparingly):</p> <ul style="list-style-type: none"> Salted butter Margarine
<p>Seasoning and condiments:</p> <ul style="list-style-type: none"> Herbs and spices without salt (such as Mrs. Dash) Lemon juice Vinegars Fresh garlic, onion Fresh horseradish Low-sodium ketchup, low-sodium hot sauce 	<p>Seasoning and condiments:</p> <ul style="list-style-type: none"> Table salt, onion salt, garlic salt Avoid “salt substitute” as this contains high levels of potassium (No-Salt, Nu-Salt) Soy sauce, tartar sauce, teriyaki sauce. Low sodium soy sauce is often still very high in sodium. Salad dressings

	<ul style="list-style-type: none"> • Salsa, Worcestershire sauce, bouillon • Sweet & sour sauces, steak and BBQ sauce • Ketchup, relish, seasoning/coating mix, meat tenderizers, flavored vinegar • Monosodium glutamate (MSG)
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High protein diet

Why do I need to follow a high protein diet?

Cirrhosis is a **catabolic disease**, meaning that you are burning a lot of energy. For this reason, your calorie and protein needs are higher than before. Some people experience muscle loss due to their body's increased energy needs. A high protein diet will help prevent this muscle loss and lower your risk of malnutrition. **How much protein do I need?**

The goal is to eat 1 gram of protein for every kilogram of your body weight. **Divide your weight in pounds by 2.2 to find your weight in kilograms.**

Example if you weigh 150lbs: 150lbs is about 68kg. Therefore, you need about 68 grams of protein per day.

How do I meet my protein goal?

Include a variety of protein-rich foods with every meal and snack (see list on page 9). Eating multiple sources of protein-rich foods will reduce the chance of repetition and food boredom.

Meal and snack timing

Small, frequent, and protein-rich meals evenly distributed throughout the day will help preserve muscle mass. This means having 6 small meals every day or eating every 2-4 hours while awake.

We recommend a late evening high-protein snack about 1-2 hours before bedtime, such as:

- 1 bottle of high calorie nutritional meal supplement (e.g. Ensure Enlive, BOOST High Protein)
- Peanut butter on 2 slices of toast
- 1 glass of milk mixed with 1 tbsp whey protein powder
- 3/4 cup Greek yogurt with berries
- Apple slices with peanut butter
- Hummus and pita bread
- Chicken salad with whole grain crackers
- Unsalted trail mix

When should meal supplement drinks be used?

Use meal supplements freely. For example, use them after a meal, or instead of a meal if you have poor appetite or are getting full quickly. You can also have meal supplements as snacks between meals.

TIP: Keep a meal supplement in your nightstand for easy access during the night

Remember:

- Eat every 2-4 hours when awake
- Have a late evening snack before bed
- Eat a snack in the middle of the night if you're awake!
- Avoid fasting or long breaks between meals and snacks
- Remember your low sodium diet while making high protein choices. For example, cottage cheese is a good protein source, but it is high in sodium.

Additional resources:

- Watch this video about cirrhosis and high-protein diet: <https://michmed.org/AYPWg>
- For additional information about nutrition and cirrhosis visit the Nutrition & Cirrhosis webpage (Wellness Toolbox): <https://tinyurl.com/2p9amdcc>

Common foods with protein

Food item	Measure	Equivalents	Weight (g or ml)	Protein (g)	Sodium (mg)
Meat and meat alternatives					
Beef, pork (cooked)	2.5 oz	Deck of cards	75g	25	45
Chicken, turkey (cooked)	2.5 oz	Deck of cards	75g	20	50
Fish (baked, fried, steamed)	2.5 oz	Deck of cards	75g	18	40
Canned fish in water, low sodium	75 g (1/3 cup)	Deck of cards	75g	18	50-70
Egg	1 large	Deck of cards	50g	6	65
Shrimp (boiled, steamed)	6 small	Deck of cards	30g	6	67
Chickpeas, beans, lentils- canned (rinse first) or boiled	¾ cup	Tennis ball	175 ml	11	30
Peanut butter (commercial)	2 tbsp		30 ml	8	149
Peanut butter (natural)	2 tbsp	Golf ball	30ml	7	2
Peanuts, almonds (unsalted)	½ cup	2 golf balls	37g	8	2
Tofu (regular, firm, extra firm)	150 g	Hockey puck	150g	21	26

Dairy products and supplements					
Milk, skim, 1%, 2%, whole	1 cup		258 g	9	105
Milk, 1% chocolate	1 cup		258 g	9	152
Soy beverage, unsweetened	1 cup		257 g	7	95
Skim milk power	About 1/3 cup		25 g	9	120
Yogurt, Greek (plain, flavored)	¾ cup	tennis ball	180 g	16	65
Yogurt (plain, flavored)	¾ cup	tennis ball	180 g	9	115
Cheddar cheese (from block)	1.5 oz	9-volt battery	50 g	12	300
Mozzarella cheese (from block)	1.5 oz	9-volt battery	50 g	10	186
Swiss cheese	1.5 oz	9-volt battery	50 g	13	96
Meal supplement drinks, high protein plus calories	1 bottle		235 ml	12-15	200-290
Whey protein power	2 tbsp	Golf ball	28 g	20	120
Grains and starches					
Bread, whole wheat	1 slice		35 g	5	165
Bread, pita, whole wheat (6.6 inch diameter)	1 each		64 g	7	372
Bagel, plain	1 bagel		71 g	7	318
Pasta, enriched spaghetti, cooked	1 cup	fist	140 g	8	1

Special K Protein Cereal, (Kellogg's)	1 cup	fist	50 g	10	125
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Vector cereal, (Kellogg's)	1 ¼ cup	Fist & 2 golf balls	55 g	5.5	220
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Edge cereal, (General Mills)	1 cup	fish	58 g	11	290
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Granola bar, (Nature Valley Protein)	1 bar		40 g	10	180
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Builder's Bar (Clif)	1 bar		68 g	20	200
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Authors: Lorraine Bonkowski, RDN

Reviewer: Elliot Tapper MD

Edited by: Karelyn Munro, BA

Adapted with permission from: From: Tandon P, DenHeyer V, Ismond KP, Kowalczewski J, Raman M, Eslamparast T, Bémour C, Rose C. The Nutrition in Cirrhosis Guide. University of Alberta, Edmonton, Alberta. 2018. pp. 1- 40.

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