

Eating Guidelines for Liver Disease

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Following a low sodium (salt) eating plan will help to manage your condition and help you feel better. It can also help your medication work better.

Together with a low sodium eating plan, having a source of protein at all your meals and snacks can help your liver work as well as possible. It may also help reduce any fluid retention (swelling) you may have on your ankles (called edema) and abdomen (called ascites).

Sodium

Eat less sodium.

Limit your sodium intake to 1500 to 2000 mg a day. Read food labels, pay attention to the serving size you eat, and cut back on sodium wherever you can to help you reach your goal. If you have edema or ascites, you should limit your sodium intake to **no more than 1500 mg a day**.

Follow these tips to lower your sodium intake:

- **Do not** add salt, sea salt, or seasoned salt at the table.
- **Do not** use salt when cooking or baking. Most recipes can be made without salt.
- **Sodium is found in all types of salt.** Table salt has about the same amount of sodium as:
 - › Kosher salt
 - › Sea salt
 - › Artisan salts
 - › Gourmet salts
 - › Fleur de sel
- Instead of salt, use:
 - › Unsalted seasonings (spice blends)
 - › Spices
 - › Fresh garlic
 - › Herbs
- Limit condiments, like ketchup and mustard.
- Try low sodium spice blends, like:
 - › Mrs. Dash™
 - › McCormick® Salt Free blends
 - › President's Choice Blue Menu No Salt Added® blends

- Try Mr. Spice® sauces (salt free) in Honey BBQ, Ginger Stir-Fry, Thai Peanut, Indian Curry, and Tangy Bang! flavours.
- Buy fresh or frozen vegetables. **Do not** buy canned vegetables, unless they are labelled “salt-free” or “no salt added” and the ingredients list does **not** include salt.
- Avoid canned, processed, or other convenience foods (like store-bought meals). These are often high in sodium.
- **Do not** eat foods that are smoked, cured, pickled, or salted.
- Eat out less often by preparing your own meals. Many restaurant and fast food items are high in sodium, like:
 - › Pizza
 - › Milkshakes
 - › Deep-fried foods (like fried chicken or French fries)
- Ask about low sodium options. Restaurant chains and fast food restaurants often give nutrition information on their websites, including the sodium content of their menu items.
- Check with your primary health care provider (family doctor or nurse practitioner) or dietitian before using:
 - › NoSalt®
 - › Windsor Half Salt™
 - › Nu-Salt®

These salt substitutes contain potassium. Depending on your health conditions and the medications you take, adding extra potassium by eating salt substitutes may be harmful.

- Choose more of the “**Best choices**” and less of the “**Foods to avoid**” items listed on page 4. This will help you choose foods lower in sodium.
- Choose foods with **less than 5% daily value (DV) for sodium per serving**.
- Avoid foods with **10% or more DV for sodium per serving**.
- Look for foods that are labelled “salt free”, “no salt added”, or “low sodium”.
- Use this pamphlet to help with meal planning.

Quick guide to % Daily Value (DV) of nutrients:

- › 5% or less is low.
- › 15% (**10% for sodium**) or more is high.

The label below is for a high sodium food to avoid. Choose foods with, at most, a 10% DV of sodium. **Less is better.**

Sample label for macaroni and cheese:

1. Check serving size and calories

Nutrition Facts			
Serving Size 1 cup (228g) Serving Per Container 2			
Amount Per Serving			
Calories 250	Calories from Fat 110		
% Daily Values*			
Total Fat 12g	18%		
Saturated Fat 3g	15%		
Trans Fat 3g			
Cholesterol 30mg	10%		
Sodium 470mg	20%		
Total Carbohydrate 31g	10%		
Dietary Fiber 0g	0%		
Sugars 5g			
Protein 5g	10%		
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	20g	25g
Cholesterol	Less than	300mg	300mg
Sodium	Less than	2400mg	2400mg
Total Carbohydrate		300g	375g
Dietary Fiber		25g	30g

2. Check for high sodium content

Best choices	Foods to avoid
<p>Grain products</p> <ul style="list-style-type: none"> • Yeast breads, homemade waffles, pancakes, and biscuits • Plain unsalted crackers • Dry cereals made without salt (like Shredded Wheat, puffed wheat, Mini-Wheats®) • Cooked cereals made without salt • Pastas (like macaroni and spaghetti) • Rice <p>Note: Look for products with 8% or less DV for sodium.</p>	<ul style="list-style-type: none"> • Baking mixes (like pancake and biscuit mixes) • Bread stuffing mixes • Seasoned crumb coatings (like Shake 'n Bake) • Salted crackers • Quick-cooking and instant hot cereals • Pre-seasoned pasta • Canned spaghetti and pasta • Pre-seasoned pasta mixes (like Hamburger Helper™, Kraft Dinner, Knorr® Sidekicks®) • Seasoned rice • Instant soups (like Mr. Noodles)
<p>Vegetables and fruit</p> <ul style="list-style-type: none"> • Fresh vegetables • Frozen vegetables without seasoning or sauces • Salt-free or low sodium canned vegetables • Fresh, frozen, and canned fruits and fruit juices • Dried fruit • Low sodium vegetable juices • Tomato sauces, pasta sauces, and canned tomatoes labelled “no salt added” 	<ul style="list-style-type: none"> • Canned beans in molasses or tomato sauce • Canned or bottled pasta and pizza sauces • Canned vegetables with added salt • Frozen vegetables with seasonings or sauces • Pickles • Potato mixes (seasoned or dried) like scalloped, instant, mashed, or hash browns • Salted seeds and nuts • Sauerkraut, kimchi, or other fermented vegetables • Seaweed • Vegetable juices (like Clamato® and V8®)

Best choices	Foods to avoid
<p>Milk and milk products</p> <ul style="list-style-type: none"> • Milk • Cream • Soy, rice, or almond drinks with no more than 5% DV for sodium • Evaporated skim milk • Cream cheese • Unsalted cottage cheese • Cheeses with no more than 10% DV for sodium. This includes many cheeses, except those listed under “Foods to avoid”. Limit these cheeses to 30 grams (1 oz) a day. • Low sodium cheese • Ricotta cheese • Bocconcini type mozzarella • Ice cream, sherbet, or frozen yogurt • Yogurt 	<ul style="list-style-type: none"> • Processed cheese spread (like Cheez Whiz®) • Processed cheese slices • Blue, feta, Romano, and Parmesan cheeses • Cottage cheese • Malted milk • Buttermilk • Condensed milk • Hot chocolate mixes • Storebought eggnog • Ready-made and instant puddings
<p>Fats</p> <ul style="list-style-type: none"> • Soft (non-hydrogenated), salt-free margarine (like Becel® Salt-Free) • Butter (salt-free) • Cooking oil (like olive or canola) • Vegetable oil cooking sprays • Low sodium mayonnaise • Avocados • Homemade gravy with no added salt • Salt-free salad dressings (see recipe on page 12) <p>Limit regular salad dressings and regular mayo to 1 Tbsp (15 ml) a day.</p>	<ul style="list-style-type: none"> • Bacon fat • Salt pork • Canned gravy • Gravy mixes • Storebought salad dressings with more than 5% DV for sodium • Storebought dips

Best choices	Foods to avoid
<p>Soups</p> <ul style="list-style-type: none"> • Unsalted soup or broth • Canned low sodium soups with no more than 10% DV for sodium • Homemade soup with no added salt 	<ul style="list-style-type: none"> • Regular canned soups • Dried soup mixes, bouillon (like OXO®), consommé • Split pea soup made with a ham bone or processed meat (like bacon or ham) • Bean and bacon soup
<p>Other foods</p> <ul style="list-style-type: none"> • Water, mineral water • Postum®, Ovaltine® • Coffee, tea • Sugar, honey, jams and jellies, cornstarch, maple syrup • Herbs and spices without salt • Salt-free seasoning blends (like Mrs. Dash™, McCormick® Salt Free blends, or PC® Blue Menu™ No Salt Added Seasoning Blends) • Vinegar • Tabasco® Sauce • Unsalted, air-popped popcorn • Cream of tartar • Cocoa • Baking powder • Baking soda, 1 to 2 tsp (5 to 10 ml) • 5 ml (1 tsp) or less of these foods, with 5% or less DV for sodium, per day: <ul style="list-style-type: none"> › Mustard › Worcestershire sauce › Relish › Ketchup 	<ul style="list-style-type: none"> • Water treated with salt-based water softener • Gatorade® and other sports drinks • Any kind of salt. This includes: <ul style="list-style-type: none"> › Celery salt › Garlic salt › Onion salt • Ac'cent® Flavor Enhancer • Seasoning blends that contain salt or sodium • Pickles and olives • Soy sauce • Oyster sauce • Salsa, picante, and taco sauces • Poultry and meat coating (breading) • Potato and nacho chips with added salt • Salted popcorn, microwave popcorn • Cheezies® and pretzels • Other party snacks

Protein

Best choices	Foods to Avoid
<p>Protein foods: meat and plant-based proteins</p> <ul style="list-style-type: none"> • Plain, fresh, or frozen: <ul style="list-style-type: none"> › Beef, pork, lamb › Chicken, turkey › Fish • Eggs • Egg whites • Unsalted nut butters (or 1 serving of regular nut butter with no more than 5% DV for sodium) • Canned tuna and salmon in water, labelled low sodium, or rinsed if not labelled low sodium • Frozen entrees with no more than 10% DV for sodium • Dried or frozen unseasoned pulses (like dried beans, chickpeas, or lentils) • Canned pulses in water that are labelled “no salt added” <p>Note: Shellfish naturally have more sodium than other fish. Choose shellfish less often.</p>	<ul style="list-style-type: none"> • All meat, fish, and poultry that has been smoked, cured, pickled, salted, or dried, like: <ul style="list-style-type: none"> › Bacon › Bologna › Corned beef › Deli meats and cold cuts › Ham › Hotdogs › Kosher meats › Salt cod › Sardines › Sausages › Smoked or pickled fish • Canned meat, frozen dinners, and meat pies • Canned beans in molasses or tomato sauce • Canned stews • Frozen breaded fish or chicken • Pizza • Salted seeds and nuts

Include protein at all your meals and snacks.

Your daily protein target: _____

Breakfast	Morning	Lunch	Afternoon	Supper	Night snack

- Eating early in the morning, throughout the day, and close to bedtime will help to fuel your body and help you build muscle.

- When your stomach is empty overnight, your body can burn stored energy present in your muscle tissue. Eating a large night snack (about 1 to 2 hours before going to sleep) with at least 15 grams of protein helps provide fuel for your body through part of the night.
- Aim to eat 1.2 to 1.5 grams of protein per kg of your ideal body weight. If you are not sure what your ideal body weight is, ask your dietitian.
- Your medical conditions and lab results can affect the amount of protein that is right for you.
- Your dietitian can help set the right daily protein target for you. They can also work with you to find ways to spread your protein intake out over the day.
- At meals, try to eat the protein foods (like fish, poultry, meat, lentils and dairy) first. Eat carbohydrate foods (like noodles, rice, potatoes and vegetables) after the protein.

Dietary Protein Sources:

- 1 cup (250 ml) milk (any %) = 8 grams protein
- $\frac{3}{4}$ cup (188 ml) Greek yogurt = 15 to 18 grams protein
- 100 grams regular yogurt = 4 grams protein
- 1 egg = 6 grams protein
- 2 Tbsp (30 ml) peanut butter = 8 grams protein
- 1 slice (20 grams) cheese = 6 grams protein (limit to 1 slice a day)
- 12 unsalted almonds = 3 grams protein
- $\frac{1}{2}$ cup (125 ml) kidney beans (no salt added) = about 7 grams protein
- $\frac{1}{2}$ cup (125 ml) extra firm tofu = 15 grams protein
- 1 portion (about the size of a deck of cards) of fish, chicken, or meat = about 25 grams protein
- 2 Tbsp skim milk powder (30 ml) = 5 grams protein
- 1 packet/scoop Boost[®] Just Protein[™] powder = 6 grams protein
- Ensure[®] Plus Calories, 235 ml bottle = 14 grams protein, 355 calories and 250 mg sodium
- Ensure[®] Advance, 235 ml bottle = 20 grams protein, 350 calories, and 259 mg sodium
- Boost[®] Plus Calories, 237 ml carton = 14 grams protein, 360 calories, and 200 mg sodium

- Resource® 2.0, 237 ml carton = 20 grams protein, 477 calories, and 170 mg sodium
- Novasource® Renal, 237 ml carton = 22 grams protein, 475 calories, and 220 mg sodium

Branched-chain amino acid (BCAA) powder

- Branched-chain amino acids can help rebuild lost muscle tissue if you have had severe (very bad) muscle loss.
- L-leucine, L-valine and L-isoleucine are essential amino acids that are easy to tolerate in liver disease. Some protein powders are made with these amino acids.
- You should **not** take all of your total daily protein intake from BCAA powder. Take only about 20 grams of your total protein a day from this protein powder.
- BCAA powder is easier to tolerate when you divide it into 2 to 3 small servings through the day. Mix these servings in with food or liquids.

Bone Health

Calcium and vitamin D

- Liver disease can lower your bone density, causing osteoporosis (a condition that makes bones brittle and more likely to break).
- You need to get enough calcium and vitamin D in your diet for your bones to stay healthy.
- To keep your bones strong, you will need **1000 to 1200 mg of calcium and 800 to 2000 IU of vitamin D each day.**

Calcium

- One (1) serving from the list of “Milk and milk products” (on page 5) has about 300 mg of calcium.
- Examples:
 - › 1 cup (250 ml) cow’s milk, 1 cup calcium fortified or enriched soy, rice, or almond beverage
 - › 1 ½ ounces (50 grams) Swiss, cheddar, or mozzarella cheese
 - › 1 cup yogurt
 - › 1 cup orange juice enriched with calcium
- You may need calcium supplements if you do not get enough calcium from your food to provide 1000 to 1200 mg a day.

Vitamin D

- **You will need to take a vitamin D supplement.**
- The best source of vitamin D is fish, especially salmon, mackerel, trout, and herring (150 to 350 IU per 2 ½ ounce serving).
- Fortified drinks (like cow's milk, and soy, rice, and almond drinks, labelled "fortified") have about 100 IU of vitamin D per cup (250 ml).
- **Do not** take more than 4000 IU vitamin D from food and supplements combined a day, unless recommended by your dietitian or primary health care provider.

Vitamin and mineral supplements

- Your dietitian may recommend a multivitamin with minerals supplement for you. They may do this if you are not eating enough foods from the different food groups, or if you are having trouble eating enough food.

Supplements with iron

- Your dietitian can advise whether your vitamin and mineral supplement should contain **iron** or not.
 - › Many daily vitamin and mineral supplements for men over 50 years old do not contain iron and can also be taken by women.
 - › **Until you talk with a dietitian, choose a supplement that is iron free.**

Your dietitian recommends for you:

- _____ IU vitamin D tablet, _____ time(s) a day
- _____ mg calcium tablet, _____ time(s) a day with a meal
- _____ multivitamin with minerals each day (iron free)
- _____ multivitamin with minerals each day (with iron)

Recipes

Speedy Barbeque Sauce

1 cup (250 ml) cider vinegar

$\frac{3}{4}$ cup (175 ml) no salt added canned crushed tomatoes

3 Tbsp (45 ml) packed brown sugar

1 Tbsp (15 ml) Worcestershire sauce

2 tsp (10 ml) hot pepper sauce

2 Tbsp (30 ml) chopped garlic

1. Combine all ingredients in a medium saucepan. Bring to a boil over medium heat.
2. Lower heat and simmer for 20 minutes, stirring often.
3. Remove from heat and cool slightly before using.

Makes: 1 $\frac{1}{2}$ cups

Nutritional information per serving (2 tbsp, 30 ml)

› Calories: 20

› Sodium: 40 mg

Balsamic Vinaigrette

$\frac{1}{3}$ cup (80 ml) onion, chopped

3 garlic cloves, minced

$\frac{1}{4}$ tsp (1 ml) pepper

$\frac{3}{4}$ cup (175 ml) balsamic vinegar

$\frac{1}{2}$ cup (125 ml) olive oil

2 Tbsp (30 ml) honey or maple syrup

2 tsp (10 ml) dry mustard or

2 Tbsp (30 ml) Dijon mustard

1. Combine all ingredients in a bowl. Use as desired.

Nutritional information per serving (2 tbsp, 30 ml)

› Calories: 110

› Sodium: 60 mg

Yogurt Marinade

¾ cup (175 g) yogurt, plain	1 Tbsp (15 ml) lemon zest, grated
1 Tbsp (15 ml) oregano, fresh, chopped	2 garlic cloves, minced
2 tsp (10 ml) vegetable oil	½ tsp (2 ml) pepper
2 Tbsp (30 ml) lemon juice	

1. Combine all ingredients in a bowl.
2. Pour over 1 pound (454 g) of meat or poultry and seal the container. Store in fridge until ready to grill or roast.
3. Grill or roast as usual. Throw away leftover marinade.

Credit: Sobeys Dietitians

Nutritional information per serving (2 tbsp, 30 ml)

› Calories: 23

› Sodium: 21 mg

Ginger Garlic Marinade

¼ cup (60 ml) water	1 tsp (5 ml) sugar (or 1 packet of Splenda® sugar substitute)
2 Tbsp (30 ml) cider vinegar	1 garlic clove, minced
1 Tbsp (15 ml) vegetable oil	⅛ tsp Tabasco® sauce
1 Tbsp fresh ginger, grated, or	
½ tsp (2 ml) ground ginger	

1. Combine all ingredients in a bowl.
2. Pour over meat. Marinate in fridge for 3 to 4 hours or overnight.
3. Bake or BBQ as usual. Garnish with fresh chopped chives.

Rosemary and Lemon Marinade

1 Tbsp (15 ml) vegetable oil	2 garlic cloves, minced
1 Tbsp (15 ml) fresh rosemary leaves, chopped	½ tsp (2 ml) lemon peel, grated
2 Tbsp (30 ml) fresh lemon juice	¼ tsp (1 ml) pepper
2 Tbsp (30 ml) red wine vinegar	

1. Combine all ingredients in a bowl.
2. Pour over pork or steak. Marinate in fridge for 3 to 4 hours or overnight.
3. Bake or BBQ as usual.

Chicken and Fish Marinade

1 Tbsp (15 ml) vegetable oil	1 tsp (5 ml) lemon peel, grated
1 Tbsp (15 ml) fresh thyme leaves, chopped	1 tsp (5 ml) dried parsley
2 Tbsp (30 ml) fresh lemon juice	1 garlic clove, minced
	⅛ tsp pepper

1. Combine all ingredients in a bowl.
2. Use as a marinade for chicken or fish.
3. Bake as usual.

Meat, Poultry, and Fish Rubs

For each rub:

1. Blend all ingredients. Place in an airtight container and store for up to 1 year.
2. Rub seasoning on meat, poultry, or fish of your choice before cooking or add when stir-frying.

Salt-free Seasoning Blend

2 Tbsp (30 ml) onion powder

2 tsp (10 ml) garlic powder

2 tsp (10 ml) paprika

2 tsp (10 ml) dry mustard

1 tsp (5 ml) thyme, crushed

½ tsp (2 ml) pepper

¼ tsp (1 ml) dried parsley

Taco or Fajita Seasoning Blend

6 Tbsp (90 ml) chili powder

2 Tbsp (30 ml) ground cumin

1 ½ tsp (7.5 ml) onion powder

1 ½ tsp (7.5 ml) garlic powder

Use with beef, pork, and chicken.

Pepper Rub

2 Tbsp (30 ml) paprika

1 Tbsp (15 ml) pepper

1 Tbsp (15 ml) brown sugar

2 tsp (10 ml) coriander, ground

1 Tbsp (15 ml) cumin, ground

1 tsp (5 ml) thyme, dried

1 tsp (5 ml) cayenne pepper

½ tsp (2ml) garlic powder

½ tsp (2 ml) allspice, ground

Credit: Sobeys Dietitians

Savory Seasoning

1 tsp (5 ml) celery seed	2 Tbsp (30 ml) crushed thyme
2 Tbsp (30 ml) crushed marjoram	1 Tbsp (15 ml) crushed basil
2 Tbsp (30 ml) crushed savory	

This rub is excellent for poultry or stuffing.

Turmeric Seasoning Blend

1 tsp (5 ml) ground coriander	1 Tbsp turmeric powder
1 tsp (5 ml) ground cumin	¼ tsp (1 ml) ground cloves
1 tsp (5 ml) paprika	¼ tsp (1 ml) cayenne powder

Use ½ to 1 tsp (2 to 5 ml) of seasoning per 1 pound (½ kg) of meat, fish, or poultry.

Low Sodium Seasoned Flour

½ cup (125 ml) flour	1 tsp (5 ml) crushed tarragon
2 tsp (10 ml) crushed basil	1 tsp (5 ml) crushed paprika
2 tsp (10 ml) crushed thyme	½ tsp (2 ml) pepper
1 tsp (5 ml) crushed oregano	

Coat chicken pieces, pork chops, or fish. Then bake or fry.

Some eating plans that are good for liver disease are:

Mediterranean diet

A Mediterranean diet has:

- › Lots of vegetables, fruits, legumes, nuts, seeds, and whole grains
- › Fish

Other resources

Nutrition in Cirrhosis Guide

This guide was developed at the University of Alberta with support from Alberta Health Services and the Canadian Liver foundation.

- › www.bit.ly/NutritionInCirrhosis

Health Canada

- › www.healthcanada.gc.ca

Heart and Stroke Foundation of Canada

- › www.heartandstroke.ca

Recipes and information about plant-based proteins

- › <https://ontariobeans.on.ca>

Cookbooks

- There are many cookbooks that can help you lower the salt in your meals.
- Any cookbook from these organizations has good information:
 - › Heart and Stroke Foundation of Canada
 - › Dietitians of Canada
 - › Diabetes Canada

You can find these books in most libraries and bookstores.

- Check bookstores or a public library near you for these books:
 - › *Hold the Salt*, by Maureen Tilley
 - › *Hold that Hidden Salt*, by Maureen Tilley
 - › *Delicious DASH Flavors*, by Sandra Nowlan
 - › *Low Salt DASH Dinners*, by Sandra Nowlan

Nutrition Education and Counselling (Dietitians)

- Find Nova Scotia Health nutrition education resources and contact information here:
 - › www.bit.ly/NSHADietitian
- There are also registered dietitians working in communities across Nova Scotia.
- For information and tips that may help you find a dietitian near you, visit:
 - › www.unlockfood.ca/en/Articles/About-Dietitians/Dietitians-can-help-make-your-future-healthy!.aspx
- You can also use this search tool from Dietitians of Canada:
 - › https://members.dietitians.ca/DCMember/s/find-dietitian?language=en_US
- You can also try doing an internet search for “Nova Scotia nutrition counselling”.
- Some registered dietitians work in grocery stores. You can try doing an internet search for “dietitian” and the name of your grocery store.

It can be hard to make changes to your eating habits. If you have any questions, please ask to talk with a dietitian. We are here to help you.

Dietitian: _____

Dietitian's phone: _____

