

## Nutrition in advanced liver disease

This resource is for people with chronic liver disease, in particular advanced liver disease (cirrhosis), who are malnourished or losing weight without trying. It contains information on how diet can help you manage this condition. This resource may not be appropriate for you if you are overweight and have been advised to intentionally lose weight.

### What does the liver do?

The liver has many roles within the body. One role is to release glucose (sugar) for energy or store it as glycogen. When the liver is not working properly, your body will rely on other energy sources such as protein (e.g. muscle) and fat stores. You should avoid losing muscle so that you can maintain strength to do your normal activities.

### Preventing weight loss

Advanced liver disease (cirrhosis) is often associated with **muscle and body fat loss**. This may be difficult to see because of fluid gains around your stomach or legs. For example, you may be losing muscle, but if you are carrying extra fluid you may stay the same weight.

### What do I eat to prevent weight loss?

To help prevent muscle and fat loss, you need to eat foods high in **energy and protein** regularly throughout the day (e.g. every 2-3 hours). This is important for people with chronic liver disease as the protein is used to maintain muscles and body tissues (including the liver) and to keep the body working normally.

### How can exercise help?

Regular exercise can help to preserve your muscles. Speak to your Doctor about a referral to an Exercise Physiologist if you need help getting started or feel unsafe exercising.

### What if my Doctor has told me to have less fluid and/or salt?

As liver disease progresses, excess fluid can build up around your stomach (ascites) and in your feet and legs (oedema). If this occurs, it becomes very important to limit the

amount of salt (sodium) you eat. This is because salt acts like a sponge with fluid in your body. Reducing the amount of salt you eat can limit the amount of fluid that stays in your body.

### Ideas to increase the protein and energy in your diet

- Eat 6-8 smaller meals and snacks throughout the day, rather than 3 large meals, particularly if you have a small appetite or feel full quickly.
- Always make sure each meal has some protein in it (meat, fish, eggs, legumes, nuts, seeds, yoghurt, salt reduced cheese)
- Use extra oil in cooking, frying and baking and on vegetables and salads.
- Add eggs, legumes, yoghurt or salt reduced cheese to your meat dishes or salads.
- Have a small high-energy snack before going to bed.
- Replace tea, coffee or water with fluids that provide energy (such as milk-based drinks).
- There are also several nutrition supplements available which are high in protein and energy. Talk to your Dietitian about these, if required.

### Choosing foods that are high in protein and energy and lower in salt:

Include at least one food from the high energy and high protein columns from the table below at each meal or snack. The amount of energy and protein required over the day differs from person to person. If you wish to know more about your energy or protein needs, please talk to your Dietitian.

High energy foods lower in salt	High protein foods lower in salt
<ul style="list-style-type: none"> <li>• Rolled oats, wheat or oat bran</li> <li>• Pasta, rice, noodles</li> <li>• Potato, sweet potato, corn, avocado</li> <li>• Unsalted butter/margarine, olive oil, sunflower oil, canola oil</li> <li>• Cream/mayonnaise</li> <li>• Jam, honey, golden syrup, ice cream</li> <li>• Fruit, dried fruit and fruit juice</li> <li>• Sugar and sugary products including soft drinks</li> </ul>	<ul style="list-style-type: none"> <li>• Milk, milk powder and soy milk</li> <li>• Cheese: Swiss, ricotta, bocconcini, cottage</li> <li>• Yoghurt, custard</li> <li>• Meat, chicken, pork, lamb, fresh fish</li> <li>• Tinned fish in spring water/oil</li> <li>• Eggs</li> <li>• Unsalted nuts and seeds – (including pastes)</li> <li>• Dried legumes – (lentils, chickpeas, kidney beans, soup mixes)</li> </ul>



The following foods are good sources of protein and energy, however they are also high in salt and should be avoided if you are carrying excess fluid.

High energy foods high in salt	High protein foods high in salt
<ul style="list-style-type: none"> <li>• Breakfast cereals</li> <li>• Packet rice, pasta and instant noodles with flavouring</li> <li>• Bread and bread products</li> <li>• Pastries</li> <li>• Cakes, biscuits and savoury crackers</li> <li>• Potato chips</li> <li>• Most takeaway and fast foods</li> </ul>	<ul style="list-style-type: none"> <li>• Cheese – hard cheese, fetta, brie, camembert</li> <li>• Cured or preserved meats e.g. ham, bacon, salami and other deli meats</li> <li>• Prawns, oysters and other shellfish</li> <li>• Tinned fish in brine or flavoured</li> <li>• Tinned legumes – (baked beans, lentils, chickpeas)</li> </ul>

### Ideas to decrease salt in your diet

<ul style="list-style-type: none"> <li>• Check nutrition labels:               <ul style="list-style-type: none"> <li>- Aim for less than 2000mg salt (sodium) per day. There are a range of phone apps that can help you count your salt intake – Easy Diet Diary, Calorie King Australia and FoodSwitch (using the filter ‘SaltSwitch’).</li> <li>- Select foods that have less salt (sodium), ideally less than 120mg per 100g serve.</li> <li>- Avoid foods with more than 400mg per 100g serve.</li> </ul> </li> <li>• Avoid convenience/take-away foods.</li> <li>• Avoid high salt foods such as processed meats (e.g. salami, ham, sausages, bacon), smoked foods (e.g. salmon, ham), salty snacks (e.g. chips, olives, pretzels), pre-made sauces and soups.</li> <li>• Don't add salt to your meals or when cooking – use other herbs and spices to flavour your food (e.g. pepper, garlic, herbs, spices, chilli, ginger, onions, chives, shallots, lemon, lime, vinegars, salt reduced sauces (e.g. salt-reduced tomato paste, mango chutney, corn relish, balsamic glaze, plum sauce, plain passata sauce).</li> </ul>
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### Ready-made meals

- Ready-to-eat meals can be found frozen or fresh and can be useful to have on hand if you are too tired to cook or prefer not to cook for only one person.
- Aim for **<600mg of sodium per serve**. There are also home meal delivery services available, for example TLC Meals, Gourmet Meals or Meals on Wheels that offer low salt options. You can check the service availability online or with your Dietitian.

## Nourishing drinks

Milk is a great base for nourishing drinks as it is high in protein and energy. It is better to use full cream milk, as it contains more energy than low fat milks. Fortified soy milk (e.g. *So Good*®) is also suitable. Almond / rice / oat / coconut milk contain little to no protein unless they have extra added in. Increase the energy content of your milk by adding other ingredients such as instant milk powder or ice cream and a variety of flavourings.

## Supplying energy to the body overnight:

- The liver plays an essential role in supplying energy (in the form of glucose) to the body while you are not eating overnight.
- When you have liver disease this becomes harder to do - this means the liver needs a regular supply of energy from our food, as it cannot rely on stored energy. This means that as well as eating every 2-3 hours, you should also eat an **energy-rich snack before bed.**

## Some pre-bed snack ideas include:

- 2 thick slices of bread with swiss cheese or low salt nut paste
- 2 thick slices of raisin bread/ toast with low salt butter or nut paste
- Glass of milk with milo and slice of bread/toast
- 1 tub of yoghurt/ custard/ ice-cream with fruit
- 1 cup of Just Right or whole-grain cereal/ muesli with  $\frac{3}{4}$  cup of milk
- Muesli bar and fruit smoothie/ glass of milk/ creamed rice/ rice pudding with fruit/ honey
- High energy supplement drink (e.g. Sustagen, Ensure, Resource)

## Vitamins and minerals

The changes that occur in liver disease can lead to vitamin and/or mineral deficiencies. Eating a variety of foods can help to avoid deficiencies. However, your Doctor may still recommend a vitamin/mineral supplement if required. Avoid taking any supplements or following diets not recommended by your Doctor or Dietitian.

## Can I drink alcohol?

You should completely avoid alcohol if your Doctor has told you to.

## Suggested meal plan

### BREAKFAST

- Porridge: rolled oats made with milk/water, with fruit, honey and/or nuts
- Natural Greek style yoghurt with fruit, nuts or untoasted muesli, and honey
- Wholegrain breakfast cereal (<200mg sodium per serve e.g. Weetbix, Vitabrits, All Bran, Sultana Bran) with milk/yoghurt
- Toast (reduced salt wholemeal or multigrain) with extra virgin olive oil and ricotta/cottage cheese OR poached/boiled/scrambled egg OR grilled tomato and herbs OR salt reduced baked beans

### MORNING TEA

Raw, unsalted nuts

**Or**

Milk based drink (e.g. milkshake/smoothie, Up & Go, flavoured milk, supplement drink)

### LUNCH

- Salad, including tomato and a dark leafy green such as spinach with extra virgin olive oil and canned fish (in spring water/oil), dried beans, eggs or chicken breast
- Wholemeal pasta with vegetables and extra virgin olive oil or tomato-based sauce and canned fish (in spring water/oil), dried beans or chicken breast
- Sandwiches/wraps – reduced salt wholemeal bread, roll, wrap or pita with salad. Use canned fish, beans, hummus or chicken breast as a filling

### AFTERNOON TEA

Reduced salt rice crackers with ricotta cheese or cottage cheese

### DINNER

100-120g lean meat, chicken or fish (fresh)

**AND** 1 cup plain pasta **or** 2/3 cup rice **or** mashed potato (using unsalted butter/margarine)

**AND** salad drizzled with olive oil **OR** vegetables – roasted or stir fried with olive oil

### SUPPER

Yoghurt / Custard **OR** supplement drink (e.g. Sustagen)

**Or** Just Right or whole-grain cereal/muesli with  $\frac{3}{4}$  cup of milk

**OR** 2 slices of raisin toast with low salt butter

**Things I can do to improve my management of chronic liver disease:**

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***For more information contact your Dietitian or nutritionist:***