

## Nutrition in advanced liver disease for weight management

This resource is for people with chronic liver disease, in particular advanced liver disease (cirrhosis), who may be overweight and have been advised to lose weight or prevent weight gain. This resource may not be appropriate for you if you are losing weight without trying. Please seek advice from your health professional.

### What does the liver do?

The liver has many roles in 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) stores. You should avoid losing muscle so that you can maintain strength to do your normal activities.

### Maintaining muscle mass

Advanced liver disease (cirrhosis) is often associated with **muscle 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 maintain muscle and a healthy weight?

To help avoid muscle loss, you need to eat foods high in **protein** at each meal and snack throughout the day (e.g. every 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. To achieve a healthy weight, you need to include a variety of nutritious foods in combination with a high protein diet.

### How can exercise help?

Regular exercise can help to preserve your muscles and achieve a healthy weight. Speak to your doctor about a referral to an exercise physiologist if you need help getting started or feel unsafe exercising.

### **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 – and 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 3 hours, you should also eat an **energy-rich snack before bed.**

### **Some pre-bed energy-rich snack ideas include:**

- 2 slices of wholegrain bread with 2 slices of Swiss cheese and a small tub of low-fat yoghurt or 200ml of low-fat milk
- 2 thick slices of raisin bread/ toast with low salt butter or nut paste
- 250ml glass of low-fat milk and 1 slice of bread/toast
- 1 tub of low-fat yoghurt with 2 pieces of fruit
- 1 cup of Just Right or 2 Weet-Bix with 1 cup of low-fat milk and fruit
- Banana or berry smoothie (1 cup of low-fat milk, 100g of low fat yoghurt or ¼ cup of raw oats, 1 banana or 1 cup of berries, and a dash of cinnamon)
- Muesli bar and an apple or banana

### **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 in your body. Reducing the amount of salt you eat can limit the amount of fluid that stays in your body.

## **Ideas to increase protein and healthy foods that are low in salt:**

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.

- Always make sure each meal has some protein in it (see the table below).
- Fill half your plate with salad or vegetables with your lean protein at main meals.
- Eat regular meals across the day, ideally every 3 hours including something before bed.
- Have an energy rich snack before going to bed.
- There are also several nutrition supplements which are high in protein. Talk to your dietitian about these, if required.

### **High protein food and drinks lower in salt**

- Low fat milk, milk powder and soy milk
- Low fat cheese: Swiss, ricotta, bocconcini, cottage
- Low fat and no added sugar yoghurt
- Lean grilled/pan fried meat, chicken, pork, lamb, fresh fish
- Tinned fish in spring water/oil
- Eggs
- Unsalted nuts and seeds (including pastes)
- Legumes (lentils, chickpeas, kidney beans, soup mixes)
- Protein water/protein supplement powders (seek advice from your dietitian)
- Low carbohydrate protein or nut bars

## Foods to limit that are high in salt and have low nutritional value:

The following foods are less healthy and high in salt so should be avoided if you are carrying excess weight and fluid.

High energy foods high in salt to limit	High protein foods high in salt to limit
<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 <b>120mg per 100g serve.</b></li><li>- <b>Avoid foods with more than 400mg per 100g serve.</b></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, some 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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## Can I drink alcohol?

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

## Plating up a healthy main meal

If you are trying to maintain muscle and manage your weight, aim to include  $\frac{1}{2}$  a plate of a variety of vegetables or salad and a small portion of wholegrain carbohydrates with your lean protein. See image below.

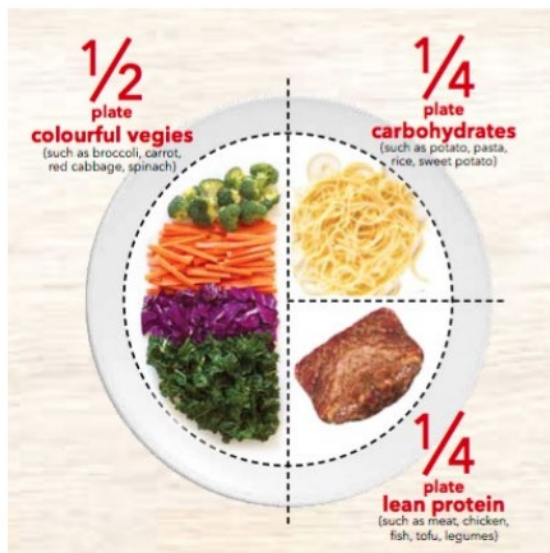


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Figure 1. The healthy plate model

## 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.

## 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.

## Suggested meal plan

<b>BREAKFAST</b>
½ cup rolls oats/2 Weet-Bix/muesli with light milk and 100g of no added sugar yoghurt and berries
<b>OR</b>
2 slices salt reduced bread with 2 eggs, tomato or avocado or cottage cheese
<b>Plus</b> Yoghurt or fruit
<b>MORNING TEA</b>
Raw, unsalted nuts (30g) or protein/nut bar
<b>OR</b>
200g snack tub of no added sugar/ high protein yoghurt and a piece of fruit
<b>OR</b>
Milk based drink (e.g. Reduced sugar Up&Go popper/light milk/yoghurt drink)
<b>LUNCH</b>
2 slices salt reduced bread <b>or</b> 1 reduced salt flat bread
With lean meat/eggs/tinned tuna (in springwater), salad, avocado
<b>OR</b>
Bowl of salad with lean meat/chickpeas/four-bean mix/black beans, bocconcini/mozzarella cheese with balsamic vinegar/or low salt dressing
<b>Plus</b> 1 high protein yoghurt or fruit
<b>AFTERNOON TEA</b>
Plain rice crackers with ricotta/cottage/Swiss/low salt cheddar cheese or low salt nut paste
Boiled egg
Cottage cheese with carrot or cucumber sticks
Protein supplement drink
<b>DINNER</b>
120g lean meat, chicken or fish (fresh)
<b>Plus</b> 1 cup plain pasta <b>or</b> 2/3 cups rice <b>or</b> 1 cup mashed potato (using unsalted butter/margarine)
<b>Plus</b> vegetables – roasted or stir fried with olive, canola, safflower or sunflower oils, garlic, pepper, herbs/spices/balsamic glaze/plain tomato passata sauce
<b>SUPPER</b>
Dairy based dessert (e.g. yoghurt) and a piece of fruit. Glass of light milk with banana, 30g of cereal/2 x Weet-Bix with light milk (see pre-bed snacks on page 2)

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

- Choose lean protein foods to have at each of your meals and ½ a plate of salad or vegetables at lunch and dinner
- Include a high energy, healthy snack before bed
- Choose low salt foods when able (check labels to avoid foods with more than 400mg/100g)
- Start some type of regular exercise that includes light resistance. Ask your doctor for a referral to an exercise physiologist.

### **Other things I can do:**

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