

Nutrition and Dietetics

Liver disease (cirrhosis) and diet for malnourished patients

This leaflet provides information for people with liver cirrhosis who are malnourished. It's important to eat a balanced diet rich in energy and protein to help with symptom management, prevent weight loss and preserve muscle mass.

The liver plays an important role in a number of vital body functions, such as:

- fighting infection and disease
- getting rid of toxins and drugs
- breaking down nutrients by aiding digestion
- storing energy
- releasing stored energy when the body needs it fast, such as when exercising

Liver damage can cause symptoms of:

- nausea
- poor appetite
- weight (fat and muscle) loss
- fluid retention.

A specialised diet can help improve these symptoms.



Guide to a well-balanced, healthy diet

Protein

You need protein to maintain and repair body tissues.

Patients with liver disease at risk of malnutrition have higher protein requirements - 1.5g per kilogram of your body weight per day. In a 60kg adult, this is 90g of protein in a 60kg.

Include a source of protein at each meal, such as:

	Approximate serving	Amount of protein
Chickpeas	½ a can	8g
Kidney beans	½ a can	9g
Baked beans	½ a can	10g
Walnuts	20g	4g
Whole almonds	20g	6g
Cashew nuts	20g	5g
Chicken	1 chicken breast	34g
White fish such as cod	1 small fillet	23g
Oily fish such as salmon	1 small fillet	25g
Canned tuna	½ a can	14g
Prawns	80g or 25 small	14g
Beef mince	125g	27g
Pork loin	100g	21-28g
Lamb chop	100g	14-20g
Milk	200ml	7g
Yogurt	125g pot	5-7g

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Cottage cheese	100g or 3 tablespoons	8g
Cheddar cheese	30g	9g
Eggs	1 medium	7g
Hummus	3 tablespoons	4g
Tofu	80g	7g
Quorn mince	100g	14g
Soya milk	200ml	6g

Avoid ready-to-eat smoked or cured fish products such as smoked salmon or gravlax due to the risk of listeria infection.

Energy (calories)

When you have liver disease, your body needs more energy than normal to help recovery and prevent muscle breakdown. You may also find that at times, you may have a poor appetite.

Foods high in energy:

- Thick and creamy yoghurt
- Ice cream
- Butter / margarine
- Oils
- Biscuits
- Chocolates
- Puddings
- Jam
- Nut butters, nuts and seeds
- Cheese
- Evaporated milk
- Ghee
- Cream
- Cakes
- Pastries
- Honey
- Sweets
- Hummus

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Milk and dairy foods

These are an important source of protein, energy and calcium. Try to eat 3 portions of these foods per day, including:

Food item	1 portion
Silver top, full cream milk (blue top), channel island	200ml
Yoghurt (natural or fruit) especially Greek yoghurt or high protein, thick and creamy varieties	125g pot
Fromage frais (not low fat / diet)	125g pot
Custard	125g pot
Cottage cheese	175g
Soft cheese (full fat)	50g
Cheese spread	50g
Hard cheese such as cheddar	30g

Fruit and vegetables

Fruit and vegetables provide a good source of vitamins and minerals. These are needed by the body to function properly. They also contain fibre which helps your bowels to open regularly.

Aim for 5 portions of fruit and vegetables per day. 1 portion (80g) equals:

- 1 large fruit like apple, orange, banana
- 2 small fruits like plums and kiwis
- A handful of fruit e.g. berries or grapes
- 1 heaped tablespoon dried fruit
- 3 tablespoons of vegetables such as carrot, peas or sweetcorn
- 1 slice papaya, melon or pineapple
- 2 broccoli spears
- 1 medium or 7 cherry tomatoes
- 150ml fruit juice
- A bowl of salad

Changing your eating pattern

One of the main functions of the liver is to release energy during starvation.

To reduce time without nutrition, it's recommended that people with liver disease try to eat a meal or snack once every 2 to 3 hours.

Some ideas for high calorie and protein snacks between meals include:

- Full fat yoghurt
- Homemade smoothie or milkshake
- Bowl of cereal and full fat milk
- Glass of milk + biscuits
- Handful dried fruit and nuts
- Milk-based nutritional supplement e.g. AYMES shake
- Cereal bar with nuts
- Cake
- Crackers with cottage cheese
- Half bagel with avocado
- Crumpet with butter and jam
- Custard pot
- Rice pudding
- Pastries
- Chocolate mousse
- Few squares of chocolate

Late evening snack

The longest period we go without food is when we are sleeping. If your liver is not working well, your body may break down your muscles for energy. Therefore, it's important to include a 50g carbohydrate late evening snack.

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50g carbohydrate snacks include:

- 2 slices of bread with jam/honey and 200ml milk
- 1 banana and 200ml orange juice
- 50g cereal with 200ml milk
- A sandwich with a pot of creamy yoghurt
- A juice-based supplement such as Fortijuice
- 2 crumpets with jam
- 2 cereal bars
- 4 digestives and an orange
- A sandwich with 150ml fruit juice
- Milk-based nutritional supplement such as, AYMES shake and a biscuit
- 500ml fruit juice or Coca-Cola (not diet)
- Milky hot chocolate with 2 biscuits

If you have diabetes, you may be worried about managing your blood sugar level. With liver cirrhosis, it's important to include regular portions of carbohydrates throughout the day and at bedtime.

This may have an impact your blood sugar levels, but it's important to continue to include these foods in your diet. Including carbohydrates will help to prevent loss of muscle mass and malnutrition.

If your blood sugar level is frequently high, consult your diabetes specialist nurse for advice on how to manage this.

Diet tips in the presence of ascites

This section only applies if you have ascites. Ascites is a build-up of fluid in the tummy (abdomen). This develops due to damage to the liver which can put pressure on your stomach and reduce your appetite.

Excess fluid can cause your stomach to expand and swell. Restricting your salt may help to control fluid retention.

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We would advise a salt intake to around 5g per day.

- High salt foods contain more than 1.5g per 100g (red).
- Medium salt foods contain 0.3 to 1.5g per 100g (amber).
- Low salt foods contain less than 0.3g per 100g (green).

To eat less salt:

- Do not add salt to cooking or at the table
- Use the traffic light system on food labels. 'Amber' or 'green' are better choices.

Energy	Fat	Saturates	Sugars	Salt
103kJ 24kcal	0.3g	<0.1	3.7g	0.1g
1%	< 1%	< 1%	4%	2%

You can also choose foods lower in salt, such as:

- Low salt stock cubes, example is, kallo organic low salt
- Unsalted nuts and crackers
- Reduced salt jars or bottles of sauce
- No added salt baked beans or spaghetti hoops

Most of the salt in our diet is found in processed foods. Try to eat less processed foods.

This includes:

- Tinned soups, packet soups and cup-a-soup.
- Takeaways, such as, pizza, Chinese, curry or burger-style fast food.
- Ready-made meals (unless they're 'amber' or 'green' on the traffic light system).
- Tinned, smoked, and processed meats such as bacon, ham, sausage, luncheon meat, corned beef, tongue, beef burgers, meat paste, pate. Use fresh or frozen meat such as beef, lamb, pork, and poultry instead.
- Pies, sausage rolls or savoury pastries.

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- Smoked fish, such as kippers, smoked haddock. Use fresh, frozen, or tinned fish in water, oil or tomato sauce instead.

Flavouring foods without using salt

Pepper or peppercorns	Sprinkle, crush or grind over any savoury dishes
Vinegar	Good with chips, fish or mix with mustard and olive oil to make salad dressing
Garlic	Use fresh cloves or salt free garlic puree in meat, chicken or pasta dishes. Do not use garlic salt.
Mixed herbs, oregano or basil	Use fresh, dried or frozen in meat, chicken, fish, soups or pasta dishes.
Mint or chives	Serve with potatoes or vegetables
Parsley	Use fresh or dried, add to fish
Rosemary	Add to chicken, lamb or pork before roasting
Bay leaf or bouquet garni	Use in stews, casseroles and soups
Lemon juice	Squeeze over fish and chicken dishes
Ginger or Lemongrass	Chop finely and add to stir fries, Chinese dishes or curry
Chillies, chilli powder or crushed chillies	Use to make chilli con carne, spicy pasta dishes or in curries
Curry powder, turmeric, cumin, coriander, garam masala, paprika	Use in curries to produce a variety of flavours
Mint sauce	Serve with lamb dishes
Horseradish sauce	Serve with beef
Cranberry sauce or jelly	Serve with poultry
Mustard	Serve with pork or beef. Try French, English or wholegrain varieties

Suggestions for a small appetite

You should not find it too difficult to increase the protein and calories in your diet if you have a good appetite. However, there may be times

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when your appetite is not so good, particularly if you are not well or recovering from treatment. If so, here are some ideas which may help.

How to enrich your food:

Fortified milk

- 1-pint full cream milk
- 2 – 4 tablespoons milk powder
- Whisk together and refrigerate for up to 24 hours
- Fortified milk can be used in place of milk or water to make coffee, hot chocolate, milk puddings, custard, cereals and sauces.

Double cream, evaporated milk, dairy ice cream

- Add ice cream to milkshakes
- Use cream or evaporated milk in sauces, cereals, custard, homemade soups, puddings, mashed potato, scrambled eggs, or on fruit or jellies

Cheese

- Add to sandwiches, on toast, low salt crackers or in mashed or jacket potatoes

Sugar, syrup, honey, jam **

- Add to cereals, puddings and scones or spread on toast

Yoghurt

- Use thick and creamy or high protein varieties
- Add to fruit (fresh, tinned, stewed)

Margarine (mono or polyunsaturated), butter and oil

- Melt over cooked vegetables or into mashed potato
- Use olive oil or other flavoured oils as salad dressing

Other helpful hints for a small appetite

- Keep fluids to a minimum at mealtimes, as they will fill you up. Try to drink after your meals.
- If you do not feel you can manage a pudding after your meal, save it for later and have it as a snack.

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- If your appetite is better at certain times of the day, e.g. in the morning, make the most of these times and try to increase your intake by having a bigger breakfast or mid-morning snack.
- Fry foods where possible, or if you grill, brush oil over your portion before and during grilling.
- If you feel tired, make larger quantities and freeze individual portions or try frozen lower salt ready meals from your supermarket.
- Choose nourishing drinks rather than tea and coffee made with water. Sip them between your meals. Nourishing drinks include:
 - Fortified full cream milk, on its own or as a milky coffee, hot chocolate, Ovaltine, Horlicks or milkshake
 - Meritene or Complan shakes are available at most chemists and supermarkets. Make them up with either cold or warmed full cream milk (or fortified milk – see above) rather than water.

Prescribed nutritional supplements

If you continue to lose weight or cannot increase your food intake, please contact your Dietitian. Nutritional supplements are available on prescription and your Dietitian will discuss these with you.

Physical activity

Doing regular physical activity is important to preserve muscle mass.

Increase your physical activity gently week by week. Remember that doing even a small amount of activity is much better than none.

Ways to include physical activity within your lifestyle include:

- Choosing to walk or cycle where possible
- Taking the stairs
- Taking part in activities such as gardening, shopping or cleaning

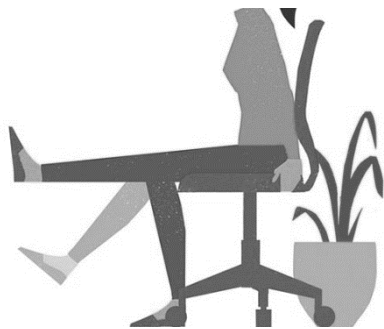
Resistance exercise

To prevent loss of muscle mass and help improve function and mobility, include some strengthening exercise twice a week.

This may include:

- Exercises with resistance bands or weights (3 sets of 10 to 15 repetitions)
- Body weight exercises e.g. push ups / squats (3 sets of 10 to 15 repetitions)
- Yoga, Tai Chi or Pilates
- Sit to stand – alternative to squats.
- Chair-based exercises – these can be helpful for people who struggle with their mobility

Knee extensions



- A. Keep both knees together with your feet on the floor. Straighten one leg out in front of you.
- B. Hold for one second, then slowly re-bend the leg until the foot is resting on the floor again.
- C. Repeat on the other leg. Do a few extensions with each leg.

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Seated row



- A. Hold your arms straight out in front of you at shoulder level, with your thumbs pointed towards the ceiling.
- B. Draw your elbows back, squeezing the shoulder blades together, until your upper arms align with the sides of your torso.
- c. Extend your arms back to the start position.
- D. Repeat a few times.

Toe lifts



- A. Lift the toes of both feet, leaving your heels on the floor.
- B. Replace your toes and lift your heels, gently squeezing your calf muscles as you do.
- c. Repeat with your legs almost straight out in front of you.

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Seated march



- A. Lift your left leg, with your knee bent, as far as is comfortable.
- B. Place foot down with control.
- c. Repeat with the right leg. Do a few lifts with each leg.

Overhead press



- A. Bend your arms up, so your wrists are by your shoulders.
- B. With control, slowly punch diagonally up and across your body with one arm, while slightly rotating your torso in the same direction.
- c. Return to the start position, then switch to the other arm. Repeat a few times on each side.

These example exercises are from the **British Heart Foundation** website, which contains further information on increasing your physical activity which you may find helpful:

<https://www.bhf.org.uk/information-support/heart-matters-magazine/activity>

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All the images have been used with permission from The British Heart Foundation.

More information

This leaflet was produced by Coventry Dietitians, University Hospitals Coventry & Warwickshire NHS Trust. If you would like further information or have any questions, please contact the team on the numbers below.

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