

Nutrition and Dietetics

Liver disease (cirrhosis) and diet for patients living with obesity

This leaflet provides information for people with liver cirrhosis who are overweight (dry weight of BMI $>25\text{kg/m}^2$ without unintentional weight loss). It is important to eat a healthy, balanced diet to promote healthy weight loss, preserve muscle mass and help with symptom management.

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, e.g. 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.

Stages of liver disease

You may experience changes in your disease stage over time. The advice you should follow depends on which stage of the disease you're in.

Decompensated liver disease refers to when you are experiencing liver-related symptoms such as ascites, hepatic encephalopathy, or jaundice.

Compensated disease is when you are not experiencing liver-related symptoms and are feeling generally well.

Compensated disease	Decompensated disease
2-3 hourly source of carbohydrates	2-3 hourly source of carbohydrates
3-4 sources of lean protein per day	3-4 sources of protein per day
50g carbohydrates snack at bedtime	50g carbohydrate snack at bedtime
No added salt	No added salt
Aim for healthy, balanced diet	May require nutritional supplements if appetite is poor e.g. due to ascites

Guide to a well-balanced, healthy diet

Protein

You need protein to maintain and repair body tissues.

Patients with cirrhotic liver disease have higher protein requirements. It is also important to increase your protein intake when aiming to lose weight to help prevent muscle loss.

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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 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
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

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

Carbohydrates

When the liver is not working well, it's important to have regular portions of carbohydrate.

Carbohydrates provide energy for the body. This energy will help to preserve muscle mass and prevent unintentional weight loss.

Choose wholegrain or 'brown' varieties of carbohydrates where possible. This will help with regular bowel motions. Wholegrain varieties also help to maintain blood sugar levels if you have diabetes.

Sources of carbohydrate include:

- Bread
- Chapatti
- Rice
- Beans
- Pulses
- Legumes
- Couscous
- Cereals
- Potato
- Pasta
- Sweet potato
- Crackers
- Grains
- Oats

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.

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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
Skimmed or semi-skimmed milk	200ml
Plant based milks such as soya, oat, coconut or almond (make sure these have added vitamins and minerals for example calcium and iodine)	200ml
Yoghurt (natural or fruit) especially greek yoghurt or high protein	125g pot
Fromage frais	125g pot
Custard	125g pot
Cottage cheese	175g
Low fat soft cheese	50g
Low fat cheese spread	50g
Low fat 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 the 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.

Try to keep your portion sizes small, as you will be eating more frequently.

Some ideas for snacks between meals include:

- High protein yoghurt and portion of fruit
- Round of wholemeal toast
- Small bowl of low-sugar cereal and milk
- Handful dried fruit and nuts
- High protein cereal bar
- Crackers with cottage cheese
- Homemade milkshake
- Glass of milk + piece of fruit
- Banana or apple with nut butter
- Vegetables and hummus
- Boiled eggs
- Light custard pot

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 muscles for energy. Therefore, it's important to include a 50g carbohydrate late evening snack.

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

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- A sandwich with a pot of creamy yoghurt
- Bowl of porridge and fruit
- 2 crumpets with jam
- 2 cereal bars
- 4 digestives and an orange
- A sandwich with 150ml fruit juice
- 5 cream crackers and large apple
- Rice pudding pot with banana
- 1.5 hot cross buns

Diet tips for if you have 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.

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%

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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.
- 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.

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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

Physical activity

Doing regular physical activity is important to help promote healthy weight loss and preserve muscle mass. It may also help to reduce the occurrence of some complications associated with liver disease.

Ways to include physical activity within your lifestyle include:

- Choosing to walk or cycle where possible
- Aiming to increase the number of steps taken each day
- Taking the stairs
- Minimising time spent sitting down
- Taking part in activities such as gardening, shopping or cleaning

Cardiovascular exercise:

Try to aim for 150 minutes moderate intensity activity such as brisk walking, dancing, hiking or cycling per week. Alternatively, aim for 75 minutes more vigorous activity such as racket or team sports, swimming or running.

You can also choose to do a combination of both moderate and vigorous activities.

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.



Patient Information

2. 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.



3. 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.



4. 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.



Patient Information

5. 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.



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

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>

Further 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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