



Diet and liver disease – High Protein and Eating Well

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When you have liver disease, your body needs extra protein and energy (calories). This is because your body is unable to store and use energy from food properly.

The energy from food you eat only lasts two to three hours. When you have liver disease and have not eaten in two to three hours, your body will start breaking down muscle for energy. If this continues, it can lead to loss of muscle strength, fatigue, and your symptoms may get worse. To prevent this, it is important to have regular meals and snacks. The guidance in this booklet will help you.

People with liver disease often experience two things:

- **Malnutrition** – which means your muscles waste away, and you might lose weight
- **Frailty** – which makes it hard for your body to recover from illnesses

Malnutrition and frailty can happen because of different reasons, such as:

- Not eating enough nutrients in your diet
- Feeling sick with nausea and vomiting
- Getting full easily, so you cannot eat enough
- Following unnecessary or inappropriate dietary restrictions

Eating the right food is essential to help you feel better. Appropriate nutrition will do the following for you:

- Stop your muscles from wasting away and make you feel stronger
- Maintain strength and mobility
- Reduce the number of times you may need to go to hospital
- Help your body heal wounds faster
- Speed up your recovery from operations and infections
- Manage symptoms such as ascites and encephalopathy (confusion caused by liver disease), and support your recovery

Carbohydrates

When you eat carbohydrate, it is broken down into sugar (glucose). This is your body's main energy source. Some of this energy is stored in your muscles and liver as glycogen. This is a back-up energy store to be used when it is needed for example between meals, if you have missed a meal or overnight.

The liver controls the release of energy between meals and snacks. Energy stores are then topped up when you next eat. When you have liver disease, your liver is unable to do this, and your body will start breaking down its own muscle for energy instead.

To prevent muscle being used for energy, it is important to refuel your body regularly. This will help you to feel better and keep your body strong. **Eat meals and snacks containing carbohydrate every two to three hours.**

Each meal should include a good source of starchy carbohydrate for slow-release energy. Choose higher fibre versions, such as brown or wholegrain varieties, where possible.

Starchy carbohydrate foods include:

- Bread, rolls, pitta, chapati/roti and naan, ciabatta, paratha
- Potatoes (baked / mashed / boiled)
- Yam, plantain, taco shells, tortilla wraps
- Breakfast cereal, muesli, granola, porridge oats
- Pasta, gnocchi, rice, noodles, couscous

Protein

Protein is essential to build and repair body tissue. When your liver is not working properly your body needs more protein than usual. Extra protein in your diet can help to prevent further muscle breakdown and re-build lost muscle.

Examples include:

- Chicken, turkey, lean mince, pork, beef
- Fish including white fish, tuna, sardines, salmon
- Cheese, yoghurt, and milk alternatives (try to choose soya milk/ yoghurt as it contains more protein than other plant-based options)
- Eggs
- Pulses such as peas, beans (including baked beans) and lentils/dhal
- Meat alternatives such as tofu, soya, seitan, tempeh, and Quorn

Your body uses protein better if you include it frequently throughout the day. Try to include a good source of protein at each meal. You may also need to include some with snacks between meals.

Fat and sugar

A healthy diet should try to limit the amount of fat and sugar.

Tips to cut down on the fat in your diet:

- Use reduced-fat alternatives, for example semi-skimmed milk, reduced-fat margarines, low-fat/fat-free yoghurts, reduced-fat mayonnaise
- Reduce takeaways
- Grill, bake or steam instead of frying
- Cut down on the amount of oil you use in your cooking
- Cut off visible fat and skin on meat
- Choose plain biscuits and cakes instead of chocolate or cream varieties
- Cut down on pies and pastries
- Choose healthier unsaturated, instead of saturated, oils and spreads. For example, choose olive or rapeseed oil and olive oil spread instead of butter or coconut oil and have in lesser amounts

Tips to cut down on the sugar in your diet:

- Use sugar-free, no added sugar or low calorie squash and fizzy drinks
- Try using artificial sweeteners in drinks instead of sugar
- Cut down on sugary sweets

Food labelling

Use the guide below to help with pre-packaged foods lower in fat.

	Low	Medium	High
Colour code	Green	Amber	Red
Fat	Less than 3.0g per 100g	Less than 17.5g per 100g	Greater than 17.5g per 100g

Use the table below to help you make choices based on your symptoms and food habits.

	Likely to be tolerated - eat freely	Eat in moderation, if tolerated	Limit eating these foods
Cooking method	Grill, bake, microwave, steam, boil, poach	Minimal amount of fat used in cooking e.g., stir frying or roasting in ½ teaspoon of oil	Foods fried or roasted in fat (including all types of oil or spreads)
Fats	Spray cooking oils, coconut oil might be tolerated	Low fat / 'light' spreads	Butter, margarine, lard, ghee, suet, all oils including; olive oil, vegetable oil, sunflower oil etc

Sauces / spreads / dressings	<p>Pickles/chutney, ketchup, (BBQ, brown, chilli and sweet chilli, cranberry) sauces, gravy made with granules and water, 0% fat mayonnaise, soy sauce, Worcestershire sauce, garlic, lemon juice, vinegar, low fat salad dressings, tomato-based sauces</p>	<p>Guacamole, horseradish sauce, reduced fat humus, light mayonnaise, sweet and sour sauce, thousand island dressing, white sauce</p>	<p>Béarnaise sauce, salad dressings, coleslaw, hollandaise sauce, hummus, peanut butter, chocolate spread, mayonnaise, pesto, salad cream, tartar sauce, gravy made with meat juice, mint coriander chutney</p>
Snacks and desserts *If you have diabetes discuss this section with your dietitian, diabetes nurse or doctor	<p>Crisp bread, rice cake, pretzels, marshmallows, boiled/ jelly/ gummy sweets. jelly, sorbet, meringue nests, low fat milk puddings and custard, strawberry delight, meringue, tinned fruit</p>	<p>Fig rolls, plain semi-sweet biscuits, oat biscuits, ginger biscuits, iced ring, jaffa cake, scone, cream cracker, water biscuit, oatcakes. Home-made popcorn, baked crisps, Frozen yoghurt, custard, rice pudding, small portions of cheesecake, mousse, panna cotta, sticky toffee pudding</p>	<p>Filled, coated or fancy biscuits, shortbread, chocolate, pastry, all nuts & seeds, crisps, Bombay mix, chocolates, chocolate torte, crème brûlée, cheesecake, profiteroles, any desserts with cream added, trifle, ice cream, gulab jamun, mithai, baklava, jalebi, coconut desserts</p>

Lower sugar alternatives

Food and drinks high in sugar	Lower sugar alternatives
Fizzy drinks, squash	Sugar-free, diet or no-added-sugar fizzy drinks and squash (pure and fresh fruit juice are best taken with a meal)
Sugar, sugar in drinks	Try artificial sweeteners instead
Sweets	Try sugar-free sweets but remember too many may cause diarrhoea. Snacks on pages X are a better option
Cakes, doughnuts, pastries and biscuits with sugar, icing, or jam	Plain biscuits or cakes, for example, rich tea, digestive, plain sponge cake

Salt

As a guide you should aim to have no more than 5g of salt per day. Check food labels to see how much salt foods contain. Use the table below to work out if the food is high, medium, or low in salt.

	Low/100g	Medium/100g	High/100g
Salt	Less than 0.3g	0.3g – 1.5g	Over 1.5g
Sodium	Less than 0.1g	0.1g – 0.6g	Over 0.6g

If there is only a figure for sodium on the label, then you can multiply it by 2.5 to find the salt level.

Tips for reducing the salt in your diet:

- Avoid adding salt to your food at the table
- Avoid salt substitutes, for example Lo Salt or Pan salt
- Only use a small pinch of salt in cooking and try alternative flavourings suggested over the page
- Gravy and sauces contain salt – these can be used if no other salt has been added to the meal
- Check the label of ready-made products such as pizza, pasties, quiche and breaded fish and chicken – choose options that are lower in salt

Suggestions for flavouring foods

Food	Flavouring
Potatoes	Mint leaves, parsley, bay leaf, chives, chopped spring onion, dill, garlic
Rice	Bay leaf, nutmeg, coriander, cardamom, peppercorns, turmeric
Roast meal	All spice
Pork	Cloves, apples, pineapple, mustard
Lamb	Rosemary, marjoram, apricots, mint sauce, or jelly
Chicken	Tarragon, paprika, dill, grapes
Liver	Oranges
Fish	Lemon, parsley, all spice, bay leaf, cayenne pepper, dill, fennel
Eggs	Black pepper, oregano, mixed herbs, chives, garlic
Vegetables	Parsley, garlic, black pepper, coriander, basil, mixed herbs
Tofu	Garlic, ginger, tarragon, basil, lemon, pineapple, chilli

Lower-salt alternative foods

Food group	Have less of these	Lower-salt alternatives
Soup and sauces	Tinned and packet soups, jar and packet sauces, stock cubes, casserole mixes, if using these, avoid adding salt to the rest of your meal	Homemade soup using a low-salt or baby stock cube, tinned tomatoes flavoured with garlic and herbs, ready-made sauces are fine for occasional use
Snacks	Salted or cheese flavoured snacks, for example Ritz, Tuc, crisps, or salted nuts	Cream crackers, water biscuits, crispbread, bread sticks, unsalted crisps, nuts, or rice cakes
Ready meals	Chilled, frozen or microwave meals	Check the labels to choose lower-salt versions, own brand supermarket healthy eating options often have less salt

*Avoid salt substitutes, for example Lo Salt or Pan salt.

Fruit and vegetables

Fruit and vegetables are important for vitamins, minerals, and fibre, but they are not a good source of carbohydrate or protein.

Try to have a couple of portions of fruit, vegetables, or salad every day. If you are eating well and have a good appetite, aim for five portions a day.

Examples of one portion of fruit or vegetables include:

- One medium fruit, for example apple, orange, banana
- Two small fruits, for example, plums, satsumas, apricots
- One dessert-size bowl of salad
- Two to three tablespoons of vegetables
- A handful of grapes or berries

Snack ideas

Try to include snacks containing carbohydrate and protein. However, if your appetite has reduced, you may find it easier to include snacks containing more carbohydrate to ensure your body is getting a regular supply of energy. Here are some ideas:

Snacks containing protein and carbohydrate include:	Snacks containing carbohydrate include:
<ul style="list-style-type: none">• A small tub of low-fat high-protein or Greek yoghurt with fruit and nuts• 2–3 unsalted crackers with hummus or a small portion of reduced-fat cheese• A mixed bean salad (100g)• 1 dessert spoon reduced-fat peanut butter on oatcakes• A glass of low-fat milk (250ml)• A handful (30g) unsalted nuts (protein only)• A boiled egg (protein only)	<ul style="list-style-type: none">• A piece of fruit• A small tub of low-fat high-protein yoghurt• 2–3 crackers or crisp bread with reduced-fat cheese• 2 tablespoons of hummus with vegetable sticks• Rice cakes

Bedtime snacks

At bedtime, you need a snack to provide your body with the energy it needs overnight and to protect your muscle mass. Use the list below to help you choose bedtime snacks.

Snacks containing carbohydrate and protein include:

- Small tub of low-fat high-protein or Greek yoghurt and fruit
 - Reduced-fat cheese or cooked meat and three to four crackers, one mini pitta or a slice of bread
 - A boiled egg with a slice of toast
 - A small sandwich with meat, fish, egg, or reduced-fat cheese
 - Two tablespoons hummus with breadsticks or vegetable sticks
 - Two tablespoons reduced-fat peanut butter on toast
 - A protein supplement drink as recommended by your dietitian:
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Supplement drinks

Sometimes you may not be able to meet your protein and/or energy requirements through diet alone. You may need to take nutritional supplement drinks to keep you well-nourished or help you build up muscle and gain weight. Taking a supplement drink between meals is better than going for lengthy periods of time without food. This will help to protect your muscle mass.

Speak to your dietitian about supplements – you will be able to discuss which ones you prefer and work best for your needs.

- To reduce fat, make supplement shakes using nutritional supplement powders with skimmed milk
- If you have diabetes, be aware that some ready-made supplements, particularly juice-based supplements, may cause your blood glucose to rise quickly, so should only be taken following your dietitian's advice

Supplement tips

- Take supplement drinks between meals so that you do not spoil your appetite for your meals
- Keep supplements in the fridge or serve with ice as they taste better when served chilled
- Try freezing supplements to eat them as an ice cream, sorbet, or ice lolly

Suggested meal plan

The list below gives some helpful meal ideas. Try some of the suggestions or choose your own healthy alternatives.

Breakfast

- Breakfast cereal and skimmed or semi skimmed milk
- Toast and peanut butter or jam
- Baked beans on toast
- Egg with/on toast
- Low-fat high-protein yoghurt and fruit

Mid-morning snack (Serve with a glass of milk/supplement)

- Fruit
- Low-fat high-protein yoghurt
- Hummus with unsalted crackers, breadsticks, or vegetables sticks
- A small piece of cheese and unsalted crackers
- A glass of low-fat milk

Lunch/ Light meal

Choose lean meat, fish, egg, reduced-fat cheese or baked beans and use:

- In a sandwich or on toast
- To fill a baked potato
- To make a salad with pasta, noodles, potatoes, or bread

Dessert (if desired)

- Low-fat high-protein yoghurt
- Fruit
- Fruit and custard

Mid afternoon snack

- A glass of low-fat milk or supplement
- Low-fat high protein or Greek yoghurt
- A small portion of cheese, cold meat, hummus and unsalted crackers or oatcakes

Evening meal/ main meal

- Meat or fish with potatoes and vegetables
- Pasta, sauce and meat, fish, beans, or reduced-fat cheese
- Meat, fish, tofu or lentil curry and rice, small naan, or chapati
- Meat or bean stew and rice
- Spaghetti Bolognese made with beef or soya mince
- Chicken, beef, bean, or lentil enchiladas
- Kidney bean or chickpea tagine with couscous

Dessert (if desired)

- Low-fat high-protein yoghurt
- Fruit
- Reduced fat and sugar custard or mousse

Bedtime snack

- Snacks from bedtime snack on page 10, as recommended by your dietitian

If you require this information in another format, such as a different language, large print, braille or audio version please ask a member of staff or email **interpreting.service@uhb.nhs.uk**.

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