



**Diet and liver disease –  
high protein,  
reduced fat**

**Building healthier lives**

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## Introduction

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.

When you have liver disease, your body needs extra protein and energy (calories) because it can't store and use energy from food properly. The energy from the food you eat only lasts for two to three hours, when this runs out your body will start breaking down muscle for energy. This can lead to losing muscle strength, feeling tired, and your symptoms may get worse. You can prevent this by having regular meals and snacks. The guidance in this booklet will help you with this.

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 for several reasons, such as:

- Not eating enough nutrients in your diet
- Losing your appetite and not feeling like eating
- Feeling sick with nausea and vomiting
- Getting full easily, so you can't 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
- Keep strength and mobility
- Reduce the number of times you may need to go to the hospital
- Help your body heal wounds faster
- Speed up your recovery from operations and infections
- Manage symptoms like ascites (build-up of fluid in the abdomen) and encephalopathy (confusion caused by liver disease) and support your recovery

## Why do you need to reduce the fat in your diet?

Fat is a valuable source of energy (calories), but everyone's tolerance to fatty foods is different. If you are jaundiced, have primary biliary cirrhosis (PBC) or primary sclerosing cholangitis (PSC), your body will release less bile into your digestive system.

Bile breaks down fat which makes it easier for your body to digest the energy and absorb essential vitamins that fat provides. If less bile is released, you may not be able to fully digest and make use of the nutrients in high fat foods.

If you **do not** digest fat properly, your stools may become **pale (clay/grey coloured), loose, foul smelling**, have an **oily appearance** or be **difficult to flush away**.

## Eating less fat

**Reducing the amount of higher fat foods** in your diet, can improve your bowel habits. If you are jaundiced, stools may remain paler than normal, but should flush away.

It is important to find the balance between how much fat your body can tolerate. You can do this by noting improvements in your bowel habit, or if your symptoms flare up. Your dietitian will provide advice on the best way to do this.

## Food labelling

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

	Low	Medium	High
Colour code	Green	Amber	Red
Fat	≤ 3.0g per 100g	≤ 17.5g per 100g	> 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	Unlikely to tolerate – limit eating these foods
<b>Cooking method</b>	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)
<b>Fats</b>	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.
<b>Sauces / spreads / dressings</b>	Pickles/chutney, ketchup, BBQ sauce, brown sauce, chilli and sweet chilli sauce, cranberry sauce, gravy made with granules and water, 0% fat mayonnaise, mustard, soy sauce, Worcestershire sauce, garlic, lemon juice, vinegar, low fat salad dressings, tomato-based sauces	Guacamole, horseradish sauce, reduced fat humus, light mayonnaise, sweet and sour sauce, thousand island dressing, white sauce	Béarnaise sauce, salad dressings, coleslaw, hollandaise sauce, hummus, peanut butter, chocolate spread, mayonnaise, pesto, salad cream, tartar sauce, gravy made with meat juice, mint cilantro chutney, cilantro chutney, or hari chutney

<b>Snacks and desserts</b> <b>*If you have diabetes discuss this section with your dietitian, diabetes nurse or doctor</b>	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	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, full fat milk puddings, custard, rice pudding  Small portions of cheesecake, mousse, panna cotta, lemon meringue pie, sticky toffee pudding	Filled, coated or fancy biscuits, shortbread, chocolate, pastry  All nuts and 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 sauces / desserts
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## Carbohydrate

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 is in control of releasing 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 having carbohydrate every two to three hours.**

Each meal should include a reliable source of starchy carbohydrate for slow-release energy. Choose higher fibre versions, such as brown or wholegrain varieties, where possible. Carbohydrates have varying amount of fat, below is some guidance for you to follow.

	Likely to be tolerated – eat freely	Eat in moderation, if tolerated	Unlikely to tolerate – limit eating these foods
Carbo-hydrates	<p>Bread, rolls, bagels, baps, teacake, English muffin, crumpet, panini, ciabatta, sourdough, spelt bread, tortilla, roti/ chapatti</p> <p>Porridge, breakfast cereals without nuts</p> <p>Pasta, spaghetti, gnocchi, rice, noodles, potatoes (baked/ boiled/ mashed with just milk), oven chips, sweet potatoes, couscous, bulgar wheat, quinoa, injera, yam</p>	<p>Croutons, banana bread, focaccia, paratha, naan, plantain</p> <p>Nut-based cereals e.g. granola, muesli</p> <p>Tortilla-based pizza / wrap.</p> <p>Chips, roast potatoes (cooked in minimal oil), wedges, baked hash brown, waffles, fried rice (homemade with minimal oil)</p>	<p>Taco, poppadum, puri, croissant, pain au chocolate, buttered or fried breads, pastries, sweet tarts, cream cakes, garlic bread, pancake, doughnuts, brownie, jaggery</p> <p>Dauphinoise potatoes, fried chips, potato au-gratin, potato croquette, fried rice from a takeaway</p>

# 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.

Your body uses protein better if you include it often throughout the day. Try to include a reliable source of protein at each meal. You may also need to include some with snacks between meals. Foods rich in protein will have varying amount of fats, please use the table below to help guide you.

	Likely to be tolerated – eat freely	Eat in moderation, if tolerated	Unlikely to tolerate – limit eating these foods
Meat, Fish and Eggs	Chicken, turkey, lean ham, white fish, seafood, lean mince (<5% fat), Quorn, tofu, fat free vegan bacon, soy mince, lentils  Potato-topped pies (if vegetables and/or meat from low fat section chosen)  Poached and boiled eggs  Packaged items with green on food labelling (less than 3g of fat per 100g)	Chicken or turkey cooked without skin, red meat (< 20% fat), and small part of lean grilled bacon  Small portion oily fish e.g. salmon, trout, herring, mackerel, sardines, tuna in brine, breaded fish e.g. fish fingers  Kidney beans, chickpeas, mixed bean, baked beans  Scrambled eggs made with semi skimmed milk	Battered meat or fish e.g. from chip shop, scampi, chicken Kiev. Fried or processed meats e.g. sausages, burgers, salami, meat paste or pate. Pork, spareribs, lamb and duck  Pastry products e.g. sausage rolls, quiche, pasties, and pies  Fried eggs, scotch eggs

## Between meal and bedtime snacks

It is important to have snacks between meals to provide energy and to protect your muscle mass.

At bedtime, you need a snack to provide your body with the energy it needs overnight and to protect your muscle.

Based on your appetite and weight, your dietitian will advise on whether this snack should have a higher amount of carbohydrate, or a combination of protein and carbohydrate. Here are some suggestions.

### Snacks containing protein and carbohydrate include:

- A small tub of low-fat high-protein or Greek yoghurt and fruit
  - Reduced-fat cheese or cooked meat and three or 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 low-fat hummus with breadsticks or vegetable sticks
  - A protein supplement drink as recommended by your dietitian. \*
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### Snacks containing protein and carbohydrate include:

- Two slices of bread or toast e.g. sourdough, rye, two mini pittas
  - A large glass of low-fat milk and two biscuits
  - A bowl of cereal or porridge with low-fat milk
  - One English muffin, toasted teacake, scone or two Scotch pancakes
  - One or two slices of malt loaf
  - One crumpet
  - A 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 extended 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.

### Snacks containing protein and carbohydrate include:

- Two slices of bread or toast e.g. sourdough, rye, two mini pittas
- A large glass of low-fat milk and two biscuits
- A bowl of cereal or porridge with low-fat milk
- One English muffin, toasted teacake, scone or two Scotch pancakes

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

- A plain piece of cake
- Scone or tea cake
- Toast, crumpet or pancake
- Low-fat hummus with crackers, breadsticks, or vegetables sticks
- A small piece of reduced-fat cheese on crackers
- Low-fat high-protein yoghurt and fruit

### **Lunch**

- Sandwich with meat, fish, egg, reduced-fat cheese, or cottage cheese
- Jacket potato with beans, reduced-fat cheese, meat or tuna in spring water or brine
- Beans, reduced-fat cheese, or fish on toast
- Salad with bread or potatoes and meat, fish, or cottage cheese
- Pasta or noodles with meat, fish, Quorn, soya mince or beans

### **Dessert**

- Low-fat yoghurt
- A slice of plain cake
- Fruit and custard (reduced fat and sugar, light or made with low-fat milk)
- Light varieties of dessert pots such as rice pudding, custard, mousse

### **Mid afternoon snack**

- Toast with jam or low-fat cheese spread
- Crackers, crispbread, or rice cakes
- Malt loaf
- Low-fat high-protein or Greek yoghurt
- Falafel
- A small portion of reduced-fat cheese, cottage cheese or hummus and crackers or oatcakes

## Evening 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 chapatti
- Meat or bean stew/casserole and rice
- Spaghetti Bolognese made with beef or soya mince and low-fat sauce
- Chicken, beef, bean, or lentil enchiladas
- Kidney bean or chickpea tagine with couscous

## Dessert (if desired)

- Fruit crumble or a small portion of sponge pudding and custard (reduced fat and sugar, light or made with low-fat milk)
- Fruit and low-fat high-protein yoghurt
- Ice creamLow-fat rice pudding

## Bedtime snack

- Snacks from on page 8, as recommended by your dietitian

Contact your dietitian for further guidance if your symptoms become worse, or your appetite improves.

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](mailto:interpreting.service@uhb.nhs.uk)**.

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