

A guide to understanding
advanced liver disease

Information for patients and carers about nutrition





Introduction

Welcome to your guide to understanding advanced liver disease and nutrition. Throughout this guide, any unusual terms are highlighted in bold and explained at the end of this leaflet in the glossary. If you have any further questions, remember to ask your doctor or nurse at your next appointment. We hope you find it informative and useful.

There are five other booklets available in this series which cover a range of topics including general health and wellness, **varices** and **variceal bleeding**, **ascites**, **hepatocellular carcinoma** and **hepatic encephalopathy**. If any of these interest you, be sure to ask your doctor about them.

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What is liver cirrhosis?

When a healthy liver gets injured by a virus, a toxin like alcohol or another specific liver disease, it repairs itself by replacing damaged cells with new ones. This is usually an efficient process but, when too much damage occurs and/or lasts a number of years, some of this repair work can leave scars. This is known as '**cirrhosis**'. At this point, if care is taken, the liver can usually cope with the damage and maintain its important functions. During this period, which can last years, there can be very few symptoms or even none at all.

In advanced liver disease, the scarring can become so great that the liver can no longer repair itself or function properly.

This can cause associated conditions like ascites, variceal bleeds, hepatic encephalopathy, or hepatocellular carcinoma. In this booklet, we focus on nutrition.

Advanced liver disease and cirrhosis can have several causes including long term alcohol abuse, viral infection such as **hepatitis B or C**, metabolic diseases such as **non-alcoholic related fatty liver disease (NAFLD)**, or other conditions such as autoimmune hepatitis.



Why is nutrition important when you have liver cirrhosis?

When you have cirrhosis, you will face some challenges when it comes to your nutrition and diet. First of all, making sure you are getting a regular supply of energy throughout the day and night will become more difficult and you will need to adjust your usual diet to manage this.

For most people, a normal diet provides them with a regular supply of energy 24 hours a day, which is enough to suit their needs. But if that energy supply runs out, the liver provides a short-term boost by releasing a carbohydrate called **glycogen** that should then keep them going until the next meal or snack.

If you have cirrhosis, the liver is unable to store and release glycogen in the same way so you will need to eat more frequently. This means that if your diet doesn't supply enough sustained energy and the liver cannot provide the usual back-up supply, your body has to look elsewhere for an energy boost. The place it turns to is muscle-tissue, and the result over time is muscle-wasting and tiredness. This problem is most likely to happen during the night, when there is a long-period between meals and the liver's glycogen supply is likely to dip.

The challenge is to create a diet that keeps your energy levels topped up throughout the day and night.



How much should I be eating?

You will need to consume more calories and protein than healthy people of the same weight.

Precisely how much can be quite complicated to work out, so it is important that you talk to your doctor or dietician about creating a programme specifically for your needs.

However, there is some general guidance you could find useful.

Your daily calorie intake should be around 35 to 40 calories per kg of your ideal body weight.¹

Your daily protein intake should be between 1.2 to 1.5 g of protein per kg of ideal body weight.¹

Remember to discuss your ideal body weight with your doctor as this is personal to you.



Once you know roughly how much you need each day in calories and protein, try to keep an eye on how much of this total you consume in each meal or snack – ideally, you want to spread the total amount out so that it lasts all day and into the night.

Keeping a food diary or using a calorie-tracking application on your smartphone could be a useful way to ensure you hit your daily calorie and protein goals.

What should I be eating?

You should carefully follow any specific dietary advice or nutritional plans given to you by your dietician or care team. Here are some useful ideas on how to keep your energy levels up:

- Try to spread your meals evenly throughout the day, maybe eating five or six smaller meals instead of three larger meals.
- When choosing protein-rich food, consider beans and lentils, fish or dairy foods such as eggs, milk and yogurt. Try to avoid getting too much of your protein from meat, especially red meat (this is explained in further detail in the next section).
- When choosing carbohydrate-rich food, consider potatoes, rice, pasta and cereals as they provide energy slowly, over a longer period. Whole-grains such as brown rice or brown pasta release energy particularly slowly making these ideal choices.
- Eat something high in carbohydrates (ideally **complex carbohydrates**) before going to bed so that you have enough energy to last through the night.
- If you are supposed to be having one of your regular small meals but don't feel especially hungry, you might consider having a high-protein or high-calorie drink/juice instead.

- Suitable high-calorie drinks include home-made milkshakes and smoothies, or a specialist drink/juice. Milkshakes and smoothies can be easily made by blending fresh fruits or vegetables with milk, fruit juice, ice cream or yoghurt. Please discuss this with your doctor or dietician.
- Alternatively, if you find you are hungry or lacking in energy in between meals, simply consider a snack/juice that is high in protein or calories.

Alcohol and smoking are dangerous to anyone with liver problems, so these should be avoided.



If I also have ascites, should I make any more changes to my diet?

Ascites is another common condition for people suffering from cirrhosis. It happens because a scarred liver can increase the pressure inside the liver's blood vessels which can force fluid into the abdomen. This fluid can cause swelling as well as shortness of breath. One way to help control this swelling is to reduce the salt in your diet.

A large part of our body is made up of water and our bodies like to maintain a certain level of salt in the water. The more salt there is in your diet, the more the body will keep hold of extra water so the level of salt stays at its natural level.

By decreasing your salt intake, you will naturally lose some of the extra fluids that might have been building up.

Reducing your salt intake can have a dramatic effect in reducing the discomfort and swelling associated with ascites.

Although ascites may cause you to feel bloated at times, unless on a fluid restriction, it is important that you continue to drink 6-8 glasses of water throughout the day so that you don't dehydrate.

Please follow any instructions given to you by your dietician or care team very carefully.

How can I reduce salt in my diet?

- Look out for low-salt or no-salt (sodium) versions of the foods you usually buy.
- Get into the habit of looking at the labels on foods and compare salt levels of different products.



What foods should I avoid?

- Ready meals and sauces – like pre-prepared meals you simply heat up or sauces you add to meat or pasta
- Take-away food and fast-food from restaurants
- Packet or tinned soups
- Tinned vegetables, including baked beans. Choose fresh or frozen vegetables as they are usually lower in salt
- Tinned fish such as tuna and salmon. Look for versions in spring water instead
- Cured meats – like bacon, sausages, ham or salami
- Marmite® and yeast extracts
- Salted butter. Choose lightly salted or unsalted instead, although even this should be eaten in moderation
- Some bottled waters are surprisingly high in natural salts. Look on the labels and compare for sodium levels
- Condiments such as tomato sauce, brown sauce, salsa and soy sauce
- It is also worth being aware that if your diet causes you to take indigestion products like **antacids**, they are often high in salt. An alternative such as peppermint oil capsules might be better suited to your needs

How can I substitute salt in my diet?

You don't need salt to make food taste interesting. Try some of these alternative ways to liven up your food:

- Swapping salty stock cubes for salt-free home-made stock
- Salad dressings such as olive oil and vinegar
- Mustard or nutmeg added to mash potato
- Garlic, ginger, chillies, spring onions, lemon or lime juice and herbs and spices with fish, vegetables or pasta
- Redcurrant jelly, apple-sauce or apricots, with lamb or pork



Should I be taking food supplements?

When you have cirrhosis, it can also mean that you may have trouble absorbing all the vitamins and minerals in your diet.

You may find that you become deficient in certain minerals, like calcium, magnesium and zinc but you can easily buy these supplements at your chemist. However, it is important to be aware that supplements can be dangerous for people with liver disease, even ones that claim to be good for liver health. Always ask your doctor or dietician which supplements would be suitable for you.



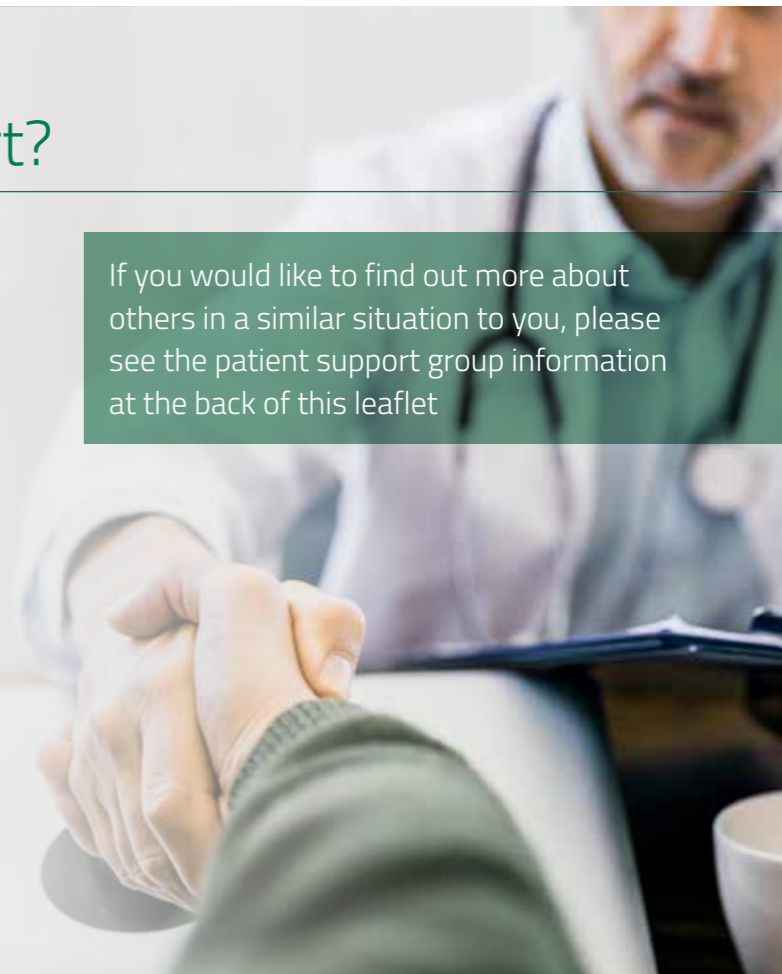
Can I get any more support?

There is a lot to think about in terms of managing your cirrhosis. Talk to your doctor for advice and guidance.

It might also be helpful to get some emotional support, from family or friends or other people going through the same experience.

Feel free to ask your doctor if there are any support groups you may be able to join or places you could get specialist advice.

If you would like to find out more about others in a similar situation to you, please see the patient support group information at the back of this leaflet



Glossary

Antacids: Substances which neutralizes stomach acidity and is used to relieve heartburn or indigestion.

Ascites: The build-up of fluid in the abdomen.

Cirrhosis: Where healthy liver cells become damaged and are replaced with scar tissue.

Complex carbohydrates: These foods provide a source of energy that is released slowly, giving you a longer lasting supply of energy and keeping you feeling full for longer.

Glycogen: A complex sugar that is a form of energy storage in muscles and in the liver.

Hepatic encephalopathy: A change in the brain that can occur in patients with advanced liver disease due to high levels of toxins in the brain.

Hepatitis B and C: Two conditions that cause inflammation of the liver due to viral infection.

Hepatocellular carcinoma: A type of liver cancer that is common in people with cirrhosis.

Liver: The largest organ inside the human body. Among other things, it is responsible for removing toxins from our blood, producing certain molecules like hormones and storing and releasing energy from food.

Non-alcohol related fatty liver disease (NAFLD): NAFLD is when you get a build-up of fat in your liver.

Toxins: Harmful chemicals that enter the body through our normal daily activities such as eating, drinking and breathing. A healthy liver helps to remove these toxins from the body.

Varices: Small veins that have become larger, twisted and swollen due to blood being redirected to them.

Variceal bleed: When small veins (known as varices) burst, causing serious bleeding.



Reporting of side effects due to prescribed medicines

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in the package leaflet. You can also report side effects directly via the Yellow Card Scheme at www.mhra.gov.uk/yellowcard.

By reporting side effects, you can help provide more information on the safety of this medicine.

Reference:

1. Amodio P, *et al*. The nutritional management of hepatic encephalopathy in patients with cirrhosis: International Society for Hepatic Encephalopathy and Nitrogen Metabolism Consensus. *Hepatology* 2013; 58(1): 325-336.

Disclaimer:

The images are being used for illustrative purposes only. Any persons depicted are models.

Suggested reading:

<https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5114497/>

<https://www.britishlivertrust.org.uk/liver-information/diet-and-liver-disease/cirrhosis-and-advanced-liver-disease/>

Support groups:

European Liver Patients' Association:
<https://www.elpa-info.org>



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