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DIET AND LIVER DISEASE

Diet and Liver Disease

Liver NORTH
LIVER PATIENT SUPPORT

information leaflet 14
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DIET AND LIVER DISEASE

This booklet is designed to help people who have liver disease understand more about diet and to provide practical advice about eating.

There are many types of liver disease, some with no symptoms and others causing very severe illness. Many people with liver disease can eat a well-balanced diet, whilst others may need more detailed advice that may not be covered by this booklet here. Therefore, it is important for you to talk to your doctor in addition to reading this booklet.

If you have any questions about your diet and cannot find the answers to them in this booklet, please ask to be referred to a State Registered Dietitian with expertise in liver disease. If you have been given dietary advice, you should continue to follow this and talk to your doctor or dietitian before making any changes.

DIABETES

It is fairly common for some people with liver disease to also have diabetes, which means the body is unable to produce enough insulin to control and maintain blood sugar levels in the recommended range. Following a well-balanced diet is important as is avoiding foods containing a lot of sugar such as jams, sweets and full sugar drinks. Some of the recommendations in this booklet may need altering to suit your individual needs if you have diabetes. Individual advice can be requested from a dietitian. More tailored, specific dietary advice may be required to meet your individual nutritional needs, please ask your clinician for a referral to the dietitian.

THE ROLE OF YOUR LIVER IN NUTRITION

Nutrition is defined as the process of taking food into the body and absorbing the nutrients in those foods.

Nutrients are chemical compounds in food that are used by the body to enable it to function properly and maintain health. Examples of nutrients include proteins, fats, carbohydrates, vitamins and minerals.

The food you eat is broken down in your stomach into small pieces. The food then travels to the intestine where further digestion occurs and protein, fats and sugars are absorbed into the blood stream then transported to your liver for processing. There are three main sources of energy or calories in our diet: carbohydrate, fat and protein. The liver plays a key role in nutrition, including the breakdown and storage of carbohydrate and protein, digestion of fats and the storage of vitamins.

The aims of good nutrition are to:

- Provide a balanced nutritional status and prevent malnutrition.
- Avoid unplanned weight loss
- Maintain your muscle, strength and mobility
- Provide you with energy for daily activities and socialising
- Support you throughout your treatment, reduce hospital admissions and maximise your day to day living.

Carbohydrate in our diet comes from starch and sugar which is found in food such as bread, potatoes, rice, pasta, cereals, fruit and sweets. Carbohydrate is broken down in the liver into glucose. Any glucose not used immediately for energy is stored as glycogen in the liver as well as some in the muscles. The liver quickly converts glycogen back into glucose when the body needs extra energy. The liver also helps to control the level of glucose in the blood and prevents it from rising or falling too far. If the liver is not working properly these processes may not be functioning very well.

Fat in our diet comes from butter, cheese, cooking oil, animal fat and from many 'invisible' sources, for example biscuits, pastry, crisps and cakes. Fat cannot be digested without bile, which is made in the liver and stored in the gallbladder. Bile is released, when needed, into the small intestine and acts as a detergent, breaking fat into tiny droplets so that it can be absorbed by the body. Fat in the body can be used as a long-term energy store.

Protein in our diet comes from foods such as meat, fish, eggs, pulses, beans, Quorn, soya, cheese, nuts and dairy products. Protein is made up of units called amino acids and once these reach the liver they provide building blocks to make cells and tissues for growth and repair.

Why is protein important?
When your liver is not working properly, your body needs more protein than normal. Eating too little protein, particularly for long periods of time, may lead to muscle weakness, frailty and slower recovery from illness or surgery.

Tips to improve your protein intake:

- Good sources of protein include: meat, fish, eggs, soya,
- tofu, beans, pulses, nuts and seeds as well as dairy foods such as milk, yoghurt and cheese
- A suggested guide is to have at least 25g of protein with each of your 3 daily meals
- Try to have high protein snacks between your meals, such as cheese and biscuits, nuts or egg
- Eggs or baked beans on toast are good ways to increase your protein intake at breakfast
- Milky drinks, such as hot chocolate or a malted drink are useful fluid sources to boost your protein intake
- Milky puddings such as custard and rice pudding after or between meals will help boost your protein intake

- Some products, for example yoghurts and cereals have extra protein added to their ingredients – look out for the words “high protein” on the label
- Making fortified milk can help increase your protein intake: add 4 heaped tablespoons of skimmed milk powder to a pint of milk. Use on cereal and puddings or in milky drinks.

Combining a good intake of protein with exercise is ideal for maintaining and building muscle + making you feel stronger.

Vitamins and Minerals

Our bodies need a variety of vitamins and minerals, some of which are stored in the liver and are essential to enable our bodies to carry out all the processes necessary for life. Most people get all the vitamins and minerals they need by choosing a variety of foods and in particular a variety of fruit and vegetables. In some types of liver disease the body may need extra vitamins. If there are concerns that your diet is lacking in vitamins, your doctor may prescribe vitamins or suggest you buy multivitamin tablets from your local pharmacy. Individual vitamins sold as separate supplements are not recommended unless advised by your doctor.

Calories are used to measure energy and can be shown as kilocalories (kcal) or kilojoules (kJ) We differ in the amount of calories we require according to our sex, age, weight and level of physical activity. If we eat fewer calories than our body needs, we lose weight, and if we eat too many, our weight increases. It is important to remember that your body's nutritional needs vary depending on the type and severity of your liver condition. Some people may have enough healthy cells in their liver to perform all of its nutritional functions adequately. If your weight is in a healthy range and you are not losing weight, it is important to try to follow a balanced diet. If a

medical professional has recommended that you should lose weight, then it is important to do so slowly and safely.

Often liver disease can increase your energy needs so you must eat more than you normally would to prevent weight loss. The side effects of your liver disease or the treatments you are receiving may make you feel unwell and not want to eat or you may have ascites (fluid in the abdomen) and be unable to eat as much. If this is happening, healthy eating recommendations would need to be relaxed in favour of eating foods high in energy, fat and protein rather than lots of fruit and vegetables, which provide little energy and can fill you up. This is discussed in more detail later on in the booklet.

A well balanced diet

Healthy eating means getting the right balance of a range of foods. There are five food groups.

1. Potatoes, bread, rice, pasta and other starchy carbohydrates: include one of these foods with every meal. Try to include wholegrain or wholemeal varieties as this will increase the fibre in your diet.
2. Fruit and vegetables: Aim for 5 portions a day, (see the Eatwell Guide shown in the centre pages for portion sizes). These can be fresh, frozen or tinned. Try to incorporate a variety of colours. Fruit and vegetables are a good source of vitamins, minerals and fibre.
3. Dairy products and dairy alternatives, such as milk, yoghurt, eggs and cheese are a good source of calcium and important for strong bones. Aim to consume three portions of dairy each day, this could include 200mls of milk, a yoghurt and 30g of cheese. Choose lower fat options, such as semi skimmed milk, reduced fat spread and low fat yoghurts if excess weight is a problem. Ensure soya/oat/rice milks are fortified with calcium.
4. Beans, pulses, fish, eggs, meat and other proteins are important for tissue regrowth and repair.

5. High calorie foods, such as high fat and sugary foods should only be eaten in very small quantities unless you need to gain weight. Try to avoid frying foods where possible and reduce cake, biscuit, pastries and sweet consumption. Choose diet, low or reduced fat/sugar options where possible. However, if you need to gain weight, eating more of these foods is beneficial.

Alcohol

The UK Government's Department of Health & Social Care has specific guidance on healthy drinking and recommends
that:

- Both men and women should not drink more than 14 units of alcohol per week
- Both men and women should not drink more than 2-3 units of alcohol in 24 hours
- Everyone should have at least two alcohol free days every week.

If you have alcohol-related liver damage, you must not drink alcohol. People with any liver condition should be very cautious about drinking alcohol. Advice on drinking will vary from person to person, even with the same condition. If you are unsure whether it is okay for you to drink alcohol, talk to your doctor.

Common Digestive Problems

Some people find eating a well balanced diet difficult, especially if they have been seriously ill. Two common reasons for this are loss of appetite and nausea (feeling sick). Try to eat as well as possible to maintain strength and reduce weight loss. The following tips may help:

Loss of Appetite

- Eat small but frequent meals – little and often
- Nutritious snacks may be better than one big meal, e.g. scone, teacake, cheese and biscuits

- Try to eat something (however small) every 2 hours
- Tempt yourself with foods you like, don't force yourself to eat food you don't like
- Try to relax before and after you eat
- Take your time over eating, chew well and breathe steadily
- Prepare meals in advance when you have more energy and make extra for the freezer
- Accept offers from friends and family to help with cooking and shopping
- Consider ready meals, these can be just as nutritious
- Use meals on wheels services or home delivery services offering pre-prepared meals
- Include convenience foods (such as tinned, dried or frozen foods) in your weekly shop e.g. longer-life milk, savoury snacks, plain biscuits, rice puddings, corned beef, baked beans, soups, tinned puddings and custard
- If you don't feel like solid food try a nourishing drink as described below

Nourishing drinks include milk, hot chocolate, Ovaltine, Horlicks made with milk and homemade milkshakes. A nutritious homemade milkshake can be made up with full fat or semi-skimmed milk, honey, ice cream, milkshake powder, banana or pureed fruit. Fruit smoothies and fruit juices can also provide good amounts of energy to your diet.
Powdered nutritional supplements, such as Meritene or Complan might be helpful and are available from local pharmacies or supermarkets, however they can be expensive. It is advisable to check with your doctor or dietitian whether they are suitable for you. Your doctor may prescribe other, ready-made nutritional supplements, such as Fortisip, Compact Protein, Ensure Plus or Fortijuce if you are struggling to obtain adequate nutritional intake and are underweight or at risk of losing further weight.

Nausea

- If some smells make you feel sick, try getting a breath of fresh air before you eat
- Keep your mouth fresh by brushing your teeth, using a mouthwash or sucking mints
- Don't let yourself get too hungry – hunger makes nausea worse
- Try to eat something every 2 hours
- Cold snacks may be better tolerated than a hot main meal
- Is there a pattern? If you always feel sick at the same time of day, try eating at other times of the day
- Avoid eating when you are very tired, rest and relax before a meal or snack
- If cooking makes the problem worse, try using readymade meals or sandwiches which can be just as nourishing
- Try sipping cold drinks slowly through a straw

If nausea continues for more than a few days, or if you start vomiting, then it is important to consult your doctor. Your doctor may be able to prescribe some medications to help ease the nausea.

Dietary Advice for Specific Liver Diseases and Complications

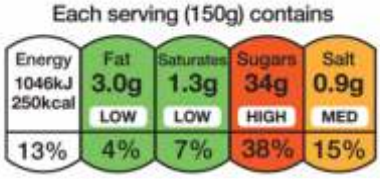
The following advice may help with a few of the common diet related problems in liver disease. The information is not exhaustive. It is essential to talk to your doctor or dietitian if you have already been advised to follow a special diet or have any questions or worries about your particular problems.

ACUTE VIRAL HEPATITIS

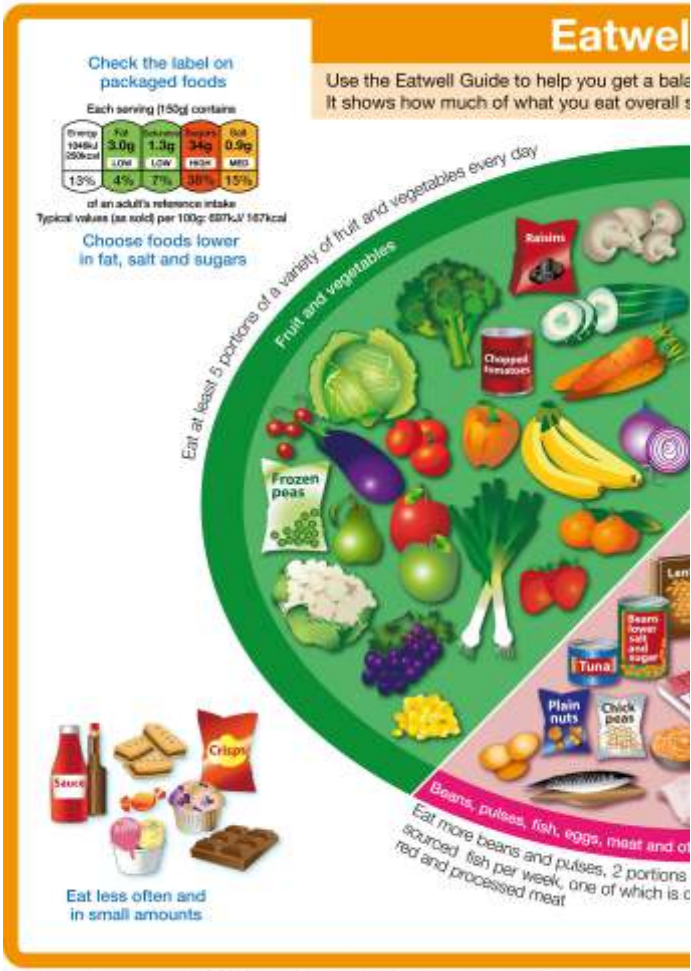
People with acute viral hepatitis who are relatively well should try to eat a normal diet. As people with acute hepatitis generally need more protein and energy they may benefit from eating a high protein, high calorie diet. However, if you develop nausea and vomiting, which make eating difficult, the

(continued on Pg 11)

The traffic light labelling system (example below) will tell you whether a food has high, medium or low amounts of fat, saturated fat, sugars and salt. It will also tell you the number of calories and kilojoules in that particular product. Note: not all of the 'traffic light' labels are in printed in colour.



USE
INFORM



Source: Public Health England in association with the Welsh Government, Food Standards Scotland and the Food Standards Agency in Northern Ireland

Reference Intake is shown in percentages and provides information on how the amount of fat, saturates, sugars and salts within that product fits into your daily recommended diet. In this example, the amount of sugar is 38% of the total recommended daily intake, therefore you should be careful of the amount of sugar consumed in other foods throughout the day.

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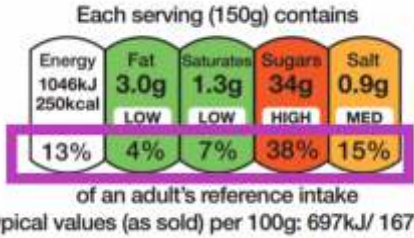
MATION



suggestions given earlier can help.

CHRONIC HEPATITIS

Generally, people with chronic hepatitis are able to eat a well balanced diet and do not need to change their food intake.

Occasional poor appetite, nausea and vomiting occur, but this only becomes a nutritional problem if it lasts longer than a few days, in which case you should consult your doctor. Some people who are prescribed steroids for autoimmune hepatitis may find their appetite increases and that they gradually gain weight. If this happens it is still important to eat a varied and well balanced diet. However, you should try to reduce your intake of energy rich foods which include foods such as sugar, sweets, cakes, biscuits, butter, margarine, oil and cream. If weight gain is a problem your doctor may suggest specialist advice from a dietitian.

NON ALCOHOLIC FATTY LIVER DISEASE (MASLD/NAFLD)

Please see separate information booklet available from LIVErNORTH called 'Lifestyle and your Liver: A guide to non-alcoholic fatty liver disease.' (booklet no.11).

PRIMARY BILIARY CHOLANGITIS (PBC) AND PRIMARY SCLEROSING CHOLANGITIS (PSC)

Some people with PBC and/or PSC do not need to change their diet, however, others have difficulty tolerating high fat foods such as chips, full fat milk and cheese.

Some people may develop a type of diarrhoea known as steatorrhoea that causes bulky, pale, oily stools that are difficult to flush away. This occurs because fat absorption by the intestines is reduced so fat levels increase in the stools and can cause nausea and discomfort in the stomach. If this occurs, it may be necessary to reduce the amount of fat in your

diet. If the symptoms do not cause you upset in your daily activities, a reduction in fat may not be necessary or recommended. People vary in the amount of fat they can tolerate and only small, gradual reductions are advisable. Most people can work out how much fat they can tolerate by adjusting their intake until their symptoms are no longer a problem. As fat is a useful source of energy, you must top up your energy intake with extra snacks between meals i.e. toast, crackers, crumpets or tea cakes or extra protein and
carbohydrate portions at meal times to prevent unnecessary weight loss. It is important to monitor your weight for this reason. Fat also provides fat-soluble vitamins A, D, E and K and essential fatty acids which are important to your health. Advice from a dietitian should be sought if you are restricting your fat intake.
Suggestions on how to reduce your fat intake include:

- Avoiding deep fried foods and high fat takeaways e.g. fish and chips, pizza, creamy curries
- Grill, bake, boil or steam instead of frying
- Trim visible fat from any meats
- Avoid pastry products
- Try changing to low fat spreads
- Try semi skimmed or skimmed milk rather than whole milk
- Eat cheese in moderation; small amounts of hard cheese may be tolerated.
- Chips, crisps and nuts – try oven chips instead

It may be advisable to try one change at a time.

Some people with PBC experience symptoms of acid from the stomach coming back up into the gullet causing heartburn, oesophageal reflux and an acidic taste in their mouths. With all of these conditions it helps to eat little and often rather than eating large meals.

If reflux symptoms persist try:

- Avoiding big meals at night
  - An antacid before bed and after meals
  - Raising the head of your bed by four or five inches
  - Adding extra pillows to avoid lying flat.

CIRRHOSIS

Cirrhosis is the scarring of the liver. This scarring leads to loss of liver cells, which can result in reduced liver function. A cirrhotic liver may be unable to store as much glycogen (energy) as a normal healthy liver. The glycogen provides short term energy in times of need, e.g. between meals and missed meals. People with cirrhosis often need more protein and energy due to higher nutritional requirements and the inability to store energy appropriately in the liver.

If you are not having regular meals and snacks (i.e. every 2 hours) the glycogen store disappears very quickly. If there are no energy stores, the body will look to find another source of energy and break down muscle to fuel the body to keep going. This results in a loss of muscle and you may notice that you are becoming weaker and losing weight. This can occur rapidly.

To help prevent the loss of muscle it is important to eat regular meals and snacks containing carbohydrate every 2–3 hours.

- Aim to have 3 meals a day. All meals should be based on a source of starchy carbohydrate, such as bread, potato, cereal, pasta, rice, noodles or couscous.
- Suitable snacks suggestions include: yoghurt, teacake, scone, toast, cheese and crackers, chocolate bar, cake, or a small sandwich. If you are away from home, try to take snacks with you to avoid longer gaps in food intake.

Due to a prolonged period of fasting overnight, a large bedtime snack containing 50g of carbohydrate is recommended to reduce muscle wasting. Examples

of suitable 50g of carbohydrate snacks include:

- Bowl of cereal and banana
- 2 slices of toast with jam and a glass of milk
- Slice of fruit cake and a glass of milk
- 4 biscuits and a glass of milk.

Many people with cirrhosis do not experience complications and therefore do not feel they need to follow a special diet. However, changing your diet may be necessary if complications, such as fluid retention (ascites and oedema) or mental slowness or confusion (encephalopathy) develop.

FLUID RETENTION

Some people with cirrhosis retain high volumes of fluid in the abdomen (ascites) and develop swelling of the feet and legs (oedema). This may be treated by drugs called diuretics and by reducing the amount of salt (sodium) you consume in your diet.

Your taste buds become more sensitive to salt as you eat less therefore it can be easy to stop adding salt, however, most of the salt we eat is added to foods by the manufacturers. It is often difficult to tell which foods are high in sodium, as they may not necessarily taste salty.

A dietitian will tell you what foods to eat and will help you work out menus that suit your individual needs. If you are malnourished and have a reduced appetite, obtaining adequate energy is more important than following a strict no added salt diet.

Suggested foods to avoid on a no-added salt diet:

- All salt added at the table, although a small amount may be used in cooking
- Stock cubes
- Packet and tinned soups (try making homemade soups)
- Tinned vegetables (try frozen vegetables)
- Smoked and tinned fish, including salmon, tuna and pilchards (choose unsmoked, non-canned products)
- Cured meats, including ham, bacon and sausages

- (choose unsmoked, non-canned, fresh products)
- Cheese, except cottage cheese and cream cheese
- Bottled sauces, ketchup, Worcestershire and Tabasco (try homemade versions or add herbs and spices for flavouring instead)
- Bovril, Marmite and all yeast extracts (try homemade versions or add herbs and spices for flavouring instead)
- Salted crisps, pretzels, nuts and olives (choose unsmoked options, but also check the label for salt content)
- Ready meals – (check the packaging label for the lower salt options or cook from fresh where possible).

To help disguise the reduction of salt the following flavourings may help:

- Freshly ground black pepper
- Lemon juice on fish and meat
- Redcurrant jelly, apricots, rosemary or garlic for lamb
- Apple or gooseberry sauce with pork
- Ginger, garlic and spring onions with mixed vegetables
- Olive oil and vinegar with salad and vegetables
- Mustard powder or nutmeg with mashed potatoes
- Different homemade sauces instead of gravy – such as onion sauce made with milk and garlic
- Curry and other spices

In hospital, some patients may be asked to restrict their fluid intake as well. This is only done under medical supervision and fluid is often gradually increased by the time the patient is discharged.

EFFECTS ON THE BRAIN (HEPATIC ENCEPHALOPATHY)

Some people with cirrhosis develop poor memory and concentration and even confusion, disorientation and coma. This condition is known as

hepatic encephalopathy. It is thought to be caused by toxic substances which enter the bloodstream and build up in the body because the damaged liver does not effectively detoxify them.
Some dietary changes may help if you have encephalopathy. Again, before making any dietary changes it is important to have a discussion with your doctor or dietician.

- Avoid having one large main meal and instead eat 3 or 4 small meals during the day
- Eat eggs and cheese as well as meat, fish and poultry for protein
- Try some vegetarian alternatives to meat such as lentils, kidney beans, chick peas and other pulses
- Fill up with extra starchy foods such as potatoes, rice, pasta and cereals
- Breakfast cereal, served with milk, can make a useful snack.

Enjoy what you eat

Taking an interest in what you eat is a very practical way to look after yourself when you are ill. It is important to enjoy what you eat. You may find it helpful to discuss diet and food problems with other people who have the same liver disease. It is a good opportunity to share cooking hints, recipes and menus. However, it is important to realise that dietary restrictions and special needs vary between people, and even if you have the same disease as someone else, your nutritional needs may be different. If you have any nutritional concerns discuss these with your doctor or dietitian.

Who else can help?

The following organisations may be useful to find out more about healthy eating, nutrition and diet:

NHS Website

The NHS website has a useful 'Eat well' section available at the link below:
https://www.nhs.uk/live-well/eat-well/

British Dietetic Association

https://www.bda.uk.com/food-health/food-facts.html

Further Information

Our leaflet 14a provides additional information on nutrition in liver disease.

Supermarkets

Most major supermarkets provide free copies of a wide range of leaflets on nutrition and healthy eating, based on the Health Education Authority's Balance of Good Health advice. Ask at your local store.

State Registered Dietitians

Your local State Registered Dietician can be contacted through your doctor or nearest large hospital. You will need a referral from your GP or specialist for individual advice.

Acknowledgements:

This leaflet has been written for the benefit of liver patients, their carers and family members.

Original content was from Jill Lowe BSc, SRD, Senior Dietician, Liver Unit, Queen Elizabeth Hospital, Birmingham with input from Barbara Davidson, Senior Dietician, Freeman Hospital, Newcastle upon Tyne.

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We are very grateful to everyone for their contributions to this booklet.

Some of the information contained in this leaflet may also appear elsewhere.

LIVErNORTH Information Leaflets:

1. Liver Patient Support
2. Accommodation for patients & families
3. Autoimmune Hepatitis
4. Alcohol and Liver Disease
5. Looking After Your Liver
6. Primary Biliary Cholangitis (PBC)
7. Coping With Stress
8. Primary Liver Cancer
9. You and Your Consultant
10. Primary Sclerosing Cholangitis (PSC)
11. Lifestyle and your Liver (MASLD/NAFLD)
12. Liver Disease
13. Skin Care for Liver Patients
14. Diet and Liver Disease

14a. Nutrition in Liver Disease

15. Hepatitis C
16. Travel Insurance for Liver Patients
17. Hepatitis E
18. Fatigue in Liver Patients/A Patient's Journey
19. Scanning - a short guide *(aka Understanding Tests)*
20. Liver Cirrhosis Self Management Toolkit *
21. Exercise & Osteoporosis in Liver Patients
22. Hepatic Encephalopathy

23 Our Livers, Our Lives *(via ISSUU)*

25 Allowances (DLA & PIP)

26 Compensated Liver Cirrhosis

27 Hepatitis B

30 Wellness Walks - several available

* only from your doctor or healthcare professional

How to access LIVErNORTH information leaflets:

1. Download from our website:
(http://www.livernorth.org.uk/pages/factsheet.htm)
2. Collect from our display boards:
(Various Hospitals & Clinics)
3. Email us: info@livernorth.org.uk
4. Phone/FAX: 0191 3702961
5. Write to us:
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(no postage stamp necessary)
6. Facebook message us:
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