

# Alcohol and liver disease



Pioneering Liver Health



# Alcohol and liver disease

**This publication is for adults diagnosed with alcohol related liver disease, for those who would like to better understand the condition and the recommended safe drinking guidelines.**

The British Liver Trust works to:

- support people with all kinds of liver disease
- improve knowledge and understanding of the liver and related health issues
- encourage and fund research into new treatments
- lobby for better services.

All our publications are reviewed by medical specialists and people living with liver disease. Our website provides information on most forms of adult liver disease. For support and general enquiries call the Trust on **01425 481320**, or visit **[www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk)**

For the latest updates to this information, please refer to our website **[www.britishlivertrust.org.uk](http://www.britishlivertrust.org.uk)**

A list of reference sources for this information is available on our website or by contacting **[info@britishlivertrust.org.uk](mailto:info@britishlivertrust.org.uk)**

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## The liver

Your liver is your body's 'factory' carrying out hundreds of jobs that are vital to life<sup>1</sup>. It is able to repair itself (even renewing large sections)<sup>1</sup> however, **the liver's ability to repair itself is limited and continuous injury can lead to permanent scarring**. Your liver is very tough and able to function even when most of it is damaged<sup>1</sup>, which means you may not notice any symptoms for some time.

Your liver has around 500 functions<sup>1</sup>.

Importantly it:

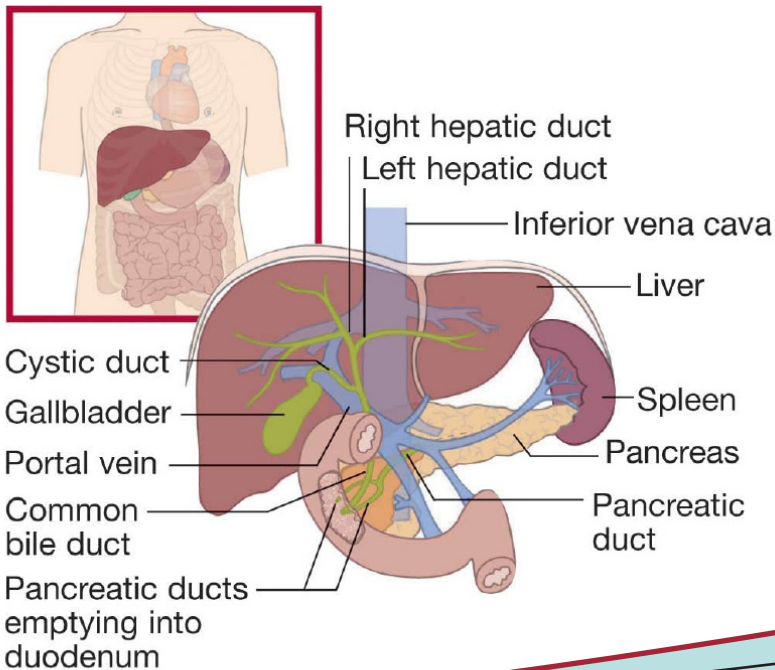
- filters and cleans the blood<sup>2</sup>
- fights infections and disease<sup>2</sup>
- destroys and deals with poisons and drugs<sup>1</sup>
- makes vital proteins which make your blood clot when you cut yourself
- produces bile to help break down food in the gut<sup>3</sup>
- processes food once it has been digested<sup>3</sup>
- stores energy that can be used rapidly when the body needs it most<sup>1</sup>
- regulates fat breakdown and distribution in the bloodstream<sup>1,2,4</sup>
- stores sugars, vitamins and minerals, including iron<sup>1,4</sup>
- gets rid of waste substances from the body<sup>5</sup>
- produces and maintains the balance of hormones<sup>1</sup>
- produces chemicals – enzymes and other proteins – responsible for most of the chemical reactions in the body, for example, repairing tissue<sup>1,3</sup>
- repairs damage and renews itself<sup>3</sup>.

## How liver disease develops

Your liver responds to injury by becoming inflamed. Any inflammation of the liver is known as hepatitis<sup>6</sup>, whatever its cause. Sudden inflammation of the liver is known as acute hepatitis. Where inflammation of the liver lasts longer than six months, the condition is known as chronic hepatitis<sup>7</sup>.

Inflammation is part of the process of repairing damaged tissue. In a similar way to a scab forming over a skin wound, a temporary fibrous 'scaffold' forms while liver cells regenerate<sup>8,9</sup>. If your liver is repeatedly injured, new liver cells cannot regenerate fast enough and the fibrous tissue remains as a scar<sup>9</sup>. This is called fibrosis and can take a variable amount of time to develop.

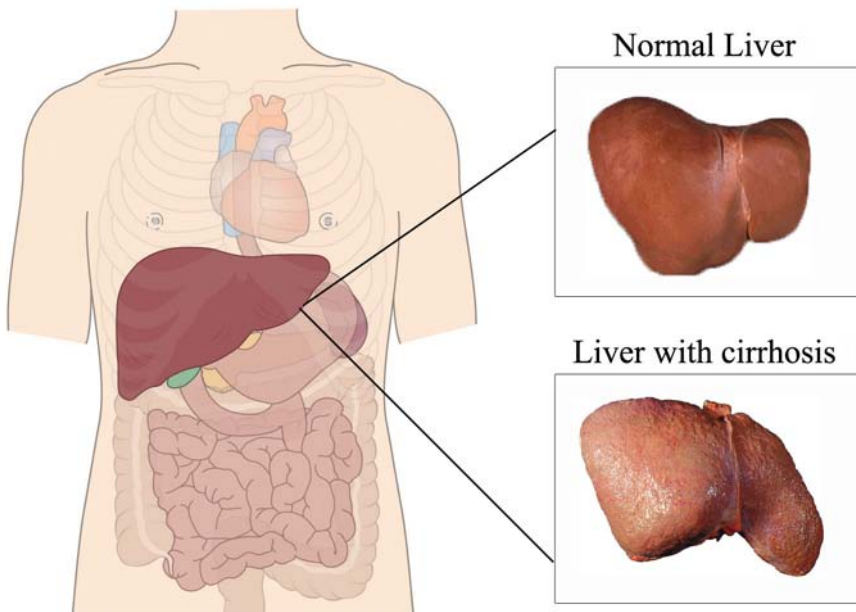
When fibrosis is present, the liver may be able to keep functioning quite well. Removing or treating the cause of the inflammation may reverse some or all of the fibrosis and prevent further liver damage<sup>9,10</sup>.



If damage continues, the inflammation and fibrosis can spread throughout your liver, disrupting its shape and affecting the working capacity of liver cells. This is known as **compensated** cirrhosis<sup>11</sup>. Even at this stage, people can have no signs or symptoms<sup>11</sup>.

The scar tissue in cirrhosis interrupts the blood flow through the liver. As a result the blood pressure in the veins around your gut is increased and may result in bleeding. Scar tissue in cirrhosis is difficult to remove and may be permanent<sup>12</sup>. However, further progression can be halted and your cirrhosis stabilised, if the cause of the liver damage is removed.

Cirrhosis increases your risk of liver cancer<sup>2,11</sup> and can lead to liver failure. If damage to your liver continues, it will become unable to function sufficiently (**decompensated**) and start to fail; this is sometimes referred to as end stage liver disease. At this stage chemicals and waste products can build up in the body, commonly causing jaundice, ascites and hepatic encephalopathy<sup>13</sup>. In the final stages of liver disease the build-up of waste products may lead to multiple organ failure and loss of life.



## Alcohol: could it be damaging your liver?

Most people think that alcohol is fairly harmless and just something to be enjoyed. Other than a few ill-effects; a hangover the next day or putting on a little bit of weight, many people do not know about the unseen damage alcohol can cause to your body.

Each year in the UK, over 250,000 people are admitted to hospital solely because of alcohol-related illnesses. One million people are admitted to hospital with alcohol-related illness being partly responsible. Alcohol-related illness accounts for almost three quarters of all admissions to Accident and Emergencies (A&E) from midnight until 5 am at weekends. Annually over 6,500 people will die because of an illness directly related to alcohol. Alcohol-related admissions and deaths costs the NHS over £3.5 billion per year<sup>14</sup>.

The liver is your largest internal organ. As well as hundreds of other jobs, it processes the alcohol you drink. If you drink over the recommended daily guidelines (see ‘How much can I drink?’, page 9) your liver will be unable to process the alcohol you consume quickly enough; damaging the cells in your liver. With no internal nerve endings your liver cannot signal when damage is being caused. You may not have any symptoms of inflammation, fatty deposits or scarring until the harm to your liver is severe – this could lead to a liver transplantation or even loss of life.

Many mistakenly think that you have to be a “heavy drinker” or “middle aged”, to be affected by alcohol-related liver disease. Regularly drinking a bit more than you should, can seriously harm your liver. Just because you don’t feel the effects of drinking on your liver, it doesn’t mean that you are not risking chronic ill-health or lasting liver damage from alcohol-related liver disease. It is a lot easier to “over drink” than many people think, putting vast numbers of us in danger of alcohol-related illnesses and incidences.

## Jim's story

Jim is 55 years old. He used to visit his local pub most days to meet up with his mates. He had two to three pints at lunch and a couple of drinks in the evening (roughly 60 units of alcohol a week). Recently, over the course of a few weeks, he noticed his abdomen had become swollen and tight. After tests, it was discovered that this was due to the build-up of fluid (ascites), caused by cirrhosis of the liver.

Jim took his doctor's advice and has stopped drinking completely. After six months the fluid has gone and he is now feeling well; even though his liver will never fully recover, the changes Jim made have allowed his liver to begin repairing itself. If he had continued drinking, even just a small amount, things could have been a lot worse.

## What is alcohol?

The type of alcohol we drink is a chemical called ethanol, also known as ethyl alcohol. Ethanol is the main ingredient in alcoholic drinks that affects our mental processes for example our speech, balance and what or how we think.

Ethanol is made by putting grains, fruit or vegetables through a process called fermentation (when the sugars in the grains, fruit or vegetables are broken down by yeast). Spirits also go through an additional process called distillation (the removal of water from the alcohol product) this leaves it stronger in concentration (strength) and taste.

Ethanol dissolves quickly in water and is then absorbed into the bloodstream. In the short term, in small doses, it makes people feel 'relaxed' and provides a general sense of well-being. Drinking more alcohol will start to affect the balance and speech sections of the brain. If you drink regularly, your brain learns to adapt to alcohol and higher amounts are needed to produce the same effect<sup>15</sup>.



Despite the short term sense of well-being, alcohol is a depressant (causes low moods) and will often affect the moods of those who regularly drink over the recommended daily guidelines. Alcohol can affect everyone differently.

## How much can I drink?

If you are healthy, eat a balanced diet and take regular exercise, sensible drinking should not cause your liver problems. But what is sensible drinking?

The Department of Health currently offers the following guidelines<sup>16,17</sup>:

- women should not regularly drink more than 2 to 3 units of alcohol in a single day (no more than 14 units in a week)
- men should not regularly drink more than 3 to 4 units of alcohol in a single day (no more than 21 units in a week)
- it is advisable to take 48 hours off of drinking a week to allow your liver to recover<sup>16</sup>.

Women are more susceptible to liver damage than men, even if they drink less. This is because women are generally smaller than men and have a greater proportion of fat tissue in their body mass; resulting in them having less body water, which causes higher levels of alcohol in the blood (blood alcohol concentration, or 'BAC') for every unit of alcohol they consume<sup>18,19</sup>.

The British Liver Trust supports these guidelines however, strongly advise a minimum of two to three (48 – 72 hours) consecutive alcohol free days a week; to give your liver a time to recover.

## When not to drink<sup>19</sup>

- If you already have a liver condition.
- When you're taking some medications. This is because it can cause dangerous side effects such as irregular heartbeat, low blood pressure and vomiting. It can also make side effects such as drowsiness and dizziness become worse. Alcohol can sometimes interfere with the effectiveness of a medication. Talk to your GP when being prescribed medications to confirm if you can drink whilst taking it<sup>20</sup>.
- If you need to drive or to operate machinery.
- If you need to touch electrical equipment or circuitry.
- When climbing ladders or going near heights.
- When taking part in sports or physical activities, particularly contact or extreme sports. Never go swimming if you have consumed any alcohol.
- When pregnant or trying to conceive<sup>21</sup>.

## What is a unit of alcohol?



One unit of alcohol is ten millilitres (ml) or eight grams (g) of pure alcohol. The abv, (alcohol by volume) tells you how many units there are in a litre<sup>17</sup>, this can be found on the bottle, box or can.

If you have a preference for a particular beer or cider, be aware the abv may fluctuate between draught, canned or bottled versions. Non-draught versions can be significantly higher.

## Binge drinking

### What is a binge drink<sup>22</sup>

Binge drinking is when you drink more than double your recommended daily allowance, normally with the purpose of getting drunk, in one go - even if you don't go over your maximum weekly allowance. Saving up units to be 'allowed' to drink more in one night is still considered to be a 'binge' and still puts your liver under pressure<sup>22</sup>.

**Men:** drinking more than 8 units in a single day. e.g. 3 pints of beer (5% abv) or 3 large (250ml) glasses of wine (13% abv).

**Women:** drinking more than 6 units in a single day. e.g. 2 pints of beer (5% abv) or 2 large (250ml) glasses of wine (13% abv).

Statistics show binge drinking is mostly seen in people aged 25 to 44 however, this figure is only slightly higher than the 16 – 24 age group<sup>22</sup>. It is estimated that one in five people drink more than the recommend guidelines<sup>22</sup>.

Just over a quarter of men drink more than 21 units and 18% of women drink more than 14 units a week<sup>14</sup>.

Drinking heavily, over a short period, leads to a rapid rise in blood alcohol concentration and consequently to 'drunkenness'. The effect on behaviour varies from one person to another and ranges from relaxation and exhilaration, to memory loss, violent behaviour and nausea. In more severe cases it can lead to a coma.

A rapidly rising blood alcohol level can cause you to say things or act in a way that might embarrass you later. It can also lead to physical accidents, vehicle accidents, unsafe sex and can make you more vulnerable to a physical attack; putting you at risk of being infected with viral hepatitis, HIV and other STI's (sexually transmitted infections).

Very high blood alcohol levels can cause your brain's control over the respiratory system to become paralysed, causing heart irregularities, strokes<sup>23</sup> and possibly loss of life.

## How does the body process alcohol?

Alcohol is soaked up through the lining of the stomach and the upper part of the gut (intestine) into your blood stream. The higher the concentration of alcohol the faster it will be absorbed.

From there, the alcohol is carried to your liver as well as other organs and body tissues. Your brain and central nervous system will be affected by the alcohol in your body, altering your physical coordination and mental judgement<sup>16</sup>.

Your liver cannot store alcohol. It metabolises (processes) about 90% of the alcohol you drink and eliminates it from your body. Alcohol breaks down into water and carbon dioxide gas and can be turned into fat<sup>24</sup>.

## What happens to the liver if you drink too much?

Along with the central nervous system, the liver suffers the most from excessive alcohol consumption.

Your liver can only process a certain amount of alcohol at any given time (one unit an hour)<sup>22</sup>. If you are drinking quickly your liver cells will have to work overtime to process the alcohol you consume. If you drink more than the recommended daily units, your liver will not be able to process the alcohol quickly enough and the excess alcohol will be transported to your other organs<sup>25</sup>.

When the liver is processing alcohol it produces a substance called acetaldehyde<sup>24</sup>. This has a toxic effect on the liver, as well as the brain and stomach lining. This is what causes your hangover.

The acetaldehyde is subsequently broken down into a chemical called acetate, which is then broken down further into carbon dioxide and water. When the liver's ability to metabolise alcohol is overwhelmed your body finds another way to 'cope'. It does this by producing free radicals (see Useful words section, page 30). Free radicals can damage cells, proteins and DNA in the liver.

Regular or harmful drinking over time can strain or disrupt the liver's ability to process alcohol, leading to alcohol-related liver disease. Alcohol-related liver disease can be broken down into stages; the first may not seem significant but addressing the condition, at this stage, may prevent it progressing and possibly leading to a liver transplant or loss of life.

### **Fatty liver**

The first stage is due to the accumulation of fat in your liver. When alcohol is metabolised the liver often stores it as fat. A healthy liver should have little or no fat however, if you drink more than the liver can cope with, fat can build up leading to fatty liver disease. This condition can also be caused without drinking; this is called 'non-alcoholic fatty liver disease' (NAFLD).

This stage is often asymptomatic (has no symptoms) and can be addressed by reducing the amount of alcohol you consume or abstinence (stopping drinking completely)<sup>26,27</sup>.

There can be other contributory factors, apart from alcohol; it is important to look at all your lifestyle choices including:

- your diet - cut out high fat sources (see our 'Diet and liver disease' publication for more detailed information)
- exercise (see 'Looking after yourself', page 27)
- some medications can contribute to the development of a fatty liver, if you are on any medications you should consult your doctor about the possible side effects (see our 'Non-alcoholic fatty liver disease' publication for more information).

**At this stage if you do not abstain, or reduce the amount you consume, you are at risk of developing serious liver damage.**

### **Alcohol related hepatitis**

If you have a fatty liver, and do not stop or reduce your intake of alcohol, you are at a high risk of developing alcohol related hepatitis. This is a condition where your liver becomes inflamed, swollen and tender. It can affect you suddenly – after a period of binge drinking for example – and can cause your liver to fail – leading to transplantation or loss of life in some patients. Alcohol related hepatitis can occur at an early stage or after many years of harmful drinking.

As with fatty liver disease, caused by alcohol, alcohol-related hepatitis can be addressed by abstaining from drinking. If you continue to drink any amount of alcohol you are at a very high risk of developing fibrosis or cirrhosis.

### **Fibrosis**

Repeated liver injury and inflammation due to alcohol can lead to the formation of scar tissue (fibrosis), which gradually replaces the normal cells. Continuing to drink alcohol can speed this process up, due to its ability to impair (disrupt) the liver regenerating.

## **Cirrhosis**

The final and irreversible stage, of alcohol related liver disease is cirrhosis. This is usually the result of long-term, continuous damage to the liver<sup>11</sup>.

Irregular bumps, known as nodules, replace the smooth liver tissue and the liver becomes harder due to the accumulation of scar tissue. As a result, the liver runs out of normal liver cells. This can lead to complete liver failure as there are too few cells left to carry out normal liver functions<sup>11</sup>.

By the time you discover you have cirrhosis your quality of life may be severely impaired, as your liver will no longer be working efficiently. If you carry on drinking at this stage you will speed up damage to your liver and can rapidly increase your chances of loss of life<sup>12</sup>.

About one in ten people who drink harmful amounts will develop cirrhosis<sup>11</sup>. In the UK, the number of people dying each year from cirrhosis is increasing.

As well as liver failure, people who have cirrhosis have a much higher chance of developing liver cancer. Each year, 3 to 5% of people with cirrhosis will develop liver cancer.



## Who is at risk?

Everyone's body reacts to alcohol in a different way, so it is difficult to tell in advance who is most likely to suffer liver damage. However, the following groups may be more at risk than most.

- Men and women who regularly drink over the recommended units of alcohol and those who do not take two – three days off a week.
- Women are more at risk than men, due to their smaller body size, build and lower water to fat ratio.
- People who are overweight.
- People who inherit genes that do not allow for proper metabolism (breakdown) of alcohol<sup>28</sup>.
- People who have another liver condition such as, Haemochromatosis (iron overload), NAFLD (Non-alcohol related fatty liver disease) and Hepatitis B or C (chronic viral infections of the liver)<sup>28</sup>.

## Can the liver recover?

The liver has the potential to repair itself, but this is limited, and to what extent, depends on how badly your liver is damaged and your general health. If you have a fatty liver because of alcohol consumption, cutting down or stopping drinking and maintaining a healthy weight (see 'Are you looking after yourself', page 27) can help your liver repair its self completely'.

Most people who have alcohol-related hepatitis can make a good recovery, if they stop drinking completely; **cutting down may only reduce the rate at which your liver damage develops.** Severe or acute alcohol related hepatitis can result in hospitalisation and may be fatal.

If you have cirrhosis, your liver cannot regenerate the sections of the liver that have already been affected. However, to prevent further damage and improve your prognosis, it is vital that you stop drinking lifelong.






## What are the effects of alcohol on the rest of your body?

Alcohol can damage other parts of your body as well as your liver. Harmful drinking can lead to a number of health problems, such as:

- stomach disorders
- pancreatitis, leading to diabetes
- high blood pressure
- circulatory problems, including heart attacks and strokes
- vitamin deficiencies
- sexual difficulties, including impotence
- problems with the brain
- depression
- malnutrition
- problems with nerves in the arms and legs
- cancer of the mouth, throat, oesophagus, large bowel (gut) and breast.

Alcohol is also known to cause other problems such as difficulties with family and friend relationships; it can affect your work and can often place you under financial strain.

## How many calories are in alcohol?

		<p>A standard glass of wine (175ml), at 13% abv contains around 126 calories<sup>27</sup>, the same as a small chocolate bar.</p>
		<p>A pint of draught beer at 5% abv contains around 170 calories<sup>27</sup>, the same as one pack of salted crisps.</p>
		<p>A alcopop at 5% abv contains up to 237 calories<sup>27</sup>, the same as three tea cakes.</p>

**Stronger wines, ales and ciders will contain even more calories.**

Alcohol contains a lot of calories, so drinking can cause you to gain weight. When drinking alcohol, the calories you consume are known as ‘empty calories’ because they give no nutritional value<sup>1</sup>. Consuming empty calories may cause you to gain weight but it can also cause you to become malnourished (see Useful words section, page 31); as your body cannot get the vitamins and nutrients it needs to function from alcohol.

The recommended daily calorie requirement for most adult males is 2500 calories and for most adult females is 2000, it is easy to see how consuming ‘empty calories’ by drinking, can cause you to put on weight<sup>27</sup>.

### **Marianne’s story**

Marianne leads a stressful life. At the age of 45 she is juggling children and a busy job. She is used to unwinding most nights of the week with a bottle of white wine that she shares with her husband (22.5 units a week). During a check-up, her doctors noticed signs that her liver was under stress and an ultrasound test revealed a fatty liver.

After three months without alcohol Marianne has lost weight and feels a lot healthier. Her liver is recovering and she is now able to have a drink now and then, but never drinks more than 14 units in one week.

## What are the symptoms of alcohol-related liver disease?

You may not experience any symptoms of liver damage early on. In fact, many people who have alcohol-related fatty liver or hepatitis find out during routine tests for an unrelated illness.

The early symptoms of alcohol-related liver disease can be nonspecific (similar to those caused by other conditions not related to liver damage). There are often no warning signs of liver damage until your liver has cirrhosis.

### **Early symptoms can include<sup>12</sup>:**

- feeling some pain in the liver (place your right hand over the lower right hand side of your ribs and this will cover the area of your liver)
- having a general feeling of poor health and fatigue
- flu like symptoms
- loss of appetite
- a sick nauseous feeling, especially in the morning and often accompanied by diarrhoea
- pale stools
- dizziness
- breathlessness
- a rapid heart rate
- increased sensitivity to alcohol or drugs.

## Later symptoms, as the liver is struggling to function<sup>2,7</sup>:

- jaundice (yellow eyes or, in more severe cases, yellow skin. For more information see 'Useful words' section, page 31)
- vomiting blood (haematemesis)
- dark black, tarry, stools (melena)
- significant weight loss
- periods of confusion or poor memory, also known as brain fog (hepatic encephalopathy)
- swelling of the abdomen (the 'tummy' area) and legs
- fever – possibly with shivering attacks
- itching (pruritis)
- dark urine
- frequent gum or nose bleeds
- easily bruised
- muscle cramps
- right shoulder pain
- personality changes
- staggering when walking.

If your doctor suspects liver damage they will look out for the following signs:

- tender, firm or possibly enlarged liver (hepatomegaly)
- red and mottled palms (palmar erythema)
- partly white fingernails
- enlargement of male breasts, which may be tender (gynaecomastia)
- swollen abdomen (ascites)
- thinning hair (alopecia)
- weakness and wasting of muscles (atrophy).

## How do you test for alcohol-related liver disease?

If your doctor suspects you have liver damage; you may need to have some tests, these could include blood tests such as LFT's or scans (see below). If necessary you will then be referred to a hepatologist (liver specialist) or a gastroenterologist (digestive disease specialist) for further tests and specialist information.

### **Liver function tests (LFTs)**

Liver function tests (LFTs) measure various enzymes, proteins and chemicals in the blood, which are made or cleared by the liver. An abnormal result may indicate a problem with the liver, and help to identify the cause. Further tests may be needed to clarify the cause of the liver problem.

As the liver performs its various functions it makes chemicals that pass into the bloodstream and bile. Various liver disorders alter the blood level of these chemicals.

The tests are used to help diagnose liver disorders; the pattern of the blood results may help to confirm which disorder is causing the problem. For example, the levels of liver enzymes and proteins in your blood can increase during liver inflammation (hepatitis).

Further blood tests may be done to exclude other possible illnesses, such as viral hepatitis, autoimmune hepatitis, diabetes (a metabolic condition) and other liver conditions.

Having raised LFTs does not always mean you have liver damage. Sometimes raised LFTs can be an indication that there is problem with another part of the body. Similarly having normal LFTs does not mean that liver damage is not occurring, further tests may be needed.



## Scans

While liver function tests can help indicate how inflamed or damaged your liver is, scans are able to help the health professionals look visually at your liver. These can include ultrasound, Fibroscan, CT (computed tomography) or MRI (magnetic resonance imaging). An ultrasound will look at the surface and general shape of your liver, as well as any significant changes from its normal appearance; a Fibroscan will look at the stiffness of your liver, while CT and MRI scans will look at all of these in more detail.

If any blood tests or scan come back abnormal, you may need to have further, more invasive tests. These may include a liver biopsy and an endoscopy.

## Liver Biopsy

During a liver biopsy, a tiny piece of the liver is taken for study. This usually involves a fine hollow needle being passed through the skin into the liver and a small sample of tissue being withdrawn.

The test is usually done under local anaesthetic and most people will be allowed home later the same day, although for some it may mean an overnight stay in hospital. As the test can be uncomfortable and there is a very small risk of internal bleeding or bile leakage, a stay in bed of at least six hours after the procedure is required. Ask your doctor for more information on this. The results of your biopsy are graded and staged according to the degree of liver inflammation and scarring.

## Endoscopy

An endoscopy is an established and reliable method of investigating the body's internal organs. An endoscope is a long, flexible fibre optic tube with a tiny camera and a light on the end. Under sedation or local anaesthetic it is passed down your throat, to check for swollen veins in the oesophagus and stomach (varices) that may rupture and bleed.

**For more detailed information on these tests see our 'Liver disease tests explained' publication.**

# What treatments are available?

## Stop Drinking

The most effective way to treat alcohol related liver disease is to abstain (stop drinking)<sup>1,12,27</sup>. For most people with fatty liver and alcohol related hepatitis the liver can potentially heal itself if they stop drinking for the rest of their life.

By cutting down on the amount you drink; you will only reduce the rate of damage. Even if symptoms disappear, this does not mean that damage is not taking place. Cirrhosis can develop with possibly no early warning signs, and cannot usually be reversed.

If you have cirrhosis, you will reduce any further damage to your liver and increase your chances of survival if you stop drinking. For support and treatment options available to help you abstain from drinking ask your GP or contact one of your local alcohol services.

## Diet

Drinking alcohol can lead to malnutrition<sup>1</sup>. The consumption of empty calories, a loss of appetite and malabsorption (poor absorption of food and nutrients), caused by alcohol's toxic effect on the gut, can all play a part in this.

For this reason, eating a good balanced diet and maintaining a healthy weight is important in helping your liver recover. If you have an alcohol related liver condition it is likely you will be deficient in certain vitamins, in particular thiamine (a B vitamin that helps the body convert carbohydrates into energy), and your doctor may have to prescribe vitamin supplements.

For more information on diet see 'Looking after yourself', page 27.

## **Nutrition**

If your liver is damaged then you might benefit from enteral nutrition (nutrients fed through a tube into the gut) to help your liver repair itself. This method of treatment ensures your liver has all the vitamins and minerals it needs to be able to repair itself.

## **Steroids**

If you have severe alcohol related hepatitis you may have to be admitted to hospital, where you may be administered steroids for a number of weeks. Steroids are drugs used to control the inflammation of your liver and can improve your chances of survival. However, by suppressing the immune system, they may also make you more susceptible to infection.

It is not completely clear yet if the use of steroid treatment helps patients with alcohol related hepatitis, as there is only limited good evidence. However, some patients with the most severe form of this disease have been shown to benefit from them in some studies.

## **Liver transplant**

For some people with cirrhosis or life-threatening liver complications, a transplant may be the only option.

In the UK, alcohol-related cirrhosis is one of the most common reason people need a liver transplant. Only patients whose liver condition fails to improve after a period of abstinence (usually six months) are considered candidates for transplantation in the UK. If you are a candidate for a transplant you will be carefully assessed and may be put on the waiting list for a donor liver. If you continue to drink and do not show commitment to lifelong abstinence you will not be offered a transplant.

Depending on the severity of your liver condition, without a liver transplant, your life expectancy may be reduced to only a few months or years.

A liver transplant is a major operation and if the transplant is successful you will be prescribed medication to take for the rest of your life, to help stop your body from rejecting your donor liver.

Survival following a liver transplant is improving all the time, with about three quarters of those having successful transplants now living longer than five years<sup>29</sup>.

If your liver transplant is due to an alcohol-related condition, you will be required to abstain from alcohol permanently in order to remain in good health.

## Looking after yourself

### **Alcohol and other liver conditions**

Alcohol is processed by your liver and, as a result, can be dangerous for anyone with a liver condition. If you have a liver condition you should speak to your doctor about how much alcohol you can safely consume and if it will affect the condition or its treatment<sup>33</sup>.

Drinking advice will vary from person to person, even for those with the same condition. Many people find they can no longer tolerate any alcohol, while others might drink a small amount on special occasions.

### **Smoking**

Smoking is dangerous to everyone's health<sup>32,34</sup>. Smoking can increase the severity of liver damage<sup>34</sup>. People with liver conditions are more vulnerable to infection and to poor health overall, so smoking or exposure to passive smoking is not advisable.

If you smoke, speak to your doctor about what help is available with cutting down and giving up.

## **Diet and exercise**

Being overweight or obese can affect the progression, or treatment of, your liver condition<sup>35</sup>. If you have a liver condition, there may be some special considerations you need to make in your diet to stay nutritionally well and to help manage your condition. Some of these are specific to certain liver diseases, others relate to how advanced your liver disease is (see our 'Diet and liver disease' publication).

Exercise will help you to maintain a healthy weight. The Department of Health recommends adults should take at least half an hour's gentle exercise a day, leaving you warm and slightly out of breath. You can do this all at once or, if you find it easier, in shorter 10 minute bouts. If you are overweight, the amount of exercise you do may need to be increased from 30 minutes to 45-90 minutes a day to help you to lose weight<sup>38</sup>.

Finding an exercise that you enjoy will help; try walking, swimming, cycling or dancing. If you are overweight, speak to your doctor about losing weight safely. Avoid crash diets and rapid weight loss as these rarely work and you are unlikely to maintain weight loss. They can also be dangerous and increase the risk of malnutrition and gallstones. A safe weekly rate of weight loss is between 0.5kg and 1kg (1-2lb)<sup>38</sup>.

## Complementary and alternative medicines and therapies

Many complementary and alternative medicines available suggest they can ease the symptoms of liver disease. Before taking any medicine you should check with your doctor that it is safe to do so, as most of these are processed by the liver, so they can be toxic to people with liver problems<sup>36</sup>. Some can damage the liver and make you more severely ill. At present, healthcare professionals are not clear on the role and place of some complementary medicines in managing liver disease; research is needed on their use.

Licensing has been introduced for some traditional herbal medicines<sup>37</sup> however; many herbal products are not classified as a medicine so there is no regulation of these products. This means you cannot be sure how much of the active ingredient you are getting or how pure it is. Unregulated products are not monitored or assessed for how effective or safe they are. Some remedies can damage the liver and make you more severely ill.

It is wise to be cautious about the claims made for herbal remedies, particularly those advertised on the internet, as they can offer false hope. **It is important to discuss the use of these remedies with your doctor before taking them.**

Some people choose to use complementary therapies alongside their conventional medical treatment, both to ease symptoms and improve emotional well-being. Such therapies may include massage, aromatherapy, meditation or acupuncture.

To ensure your chosen therapy does not adversely affect your health or medical treatment, you should discuss any therapies you are thinking of using with your doctor. Make sure your practitioner is registered with an accredited body; your doctor may be able to refer you to a locally recommended practitioner. Always inform your practitioner of your medical conditions as these may impact on the type of therapies that are safe for you.

## Useful words

**Absorption** – the process by which fluids, oral medications and nutrients are taken into the blood stream from the small intestine.

**Acute** – a sudden illness that may be severe but lasts for a short period.

**Ascites** – accumulation of fluid in the abdomen (peritoneal cavity), which surrounds the bowel, leading to enlarged, swollen and tender abdomen.

**Balanced diet** – a diet that contains all the different substances your body needs, in the right amounts, to keep you healthy.

**Bile** – a yellow-green fluid produced by your liver, which passes into your intestine. It contains chemicals, as well as waste products, and plays a central role in helping the body to process cholesterol and digest fat.

**Bilirubin** – a yellow pigment and waste product from the breakdown of haemoglobin. Increases of bilirubin in your blood can indicate liver disease, especially disease of the bile ducts (see jaundice).

**Calories** – units of energy, sometimes written as kilocalories (kcal) or kilojoules (kj).

**Carbohydrate** – a substance that provides energy or fuel for your body. ‘Simple’ carbohydrates are sugars as found in fruit, honey and jam. ‘Complex’ carbohydrates are starches, as found in bread, rice and potatoes.

**Cell** – the basic functioning unit or ‘building block’ of living things, it can reproduce itself exactly. Your body is made up of cells, each with its own unique functions and features. Within the outer skin (membrane) of each cell is a central compartment known as the cell ‘nucleus’, which contains your genetic material.

**Chronic** – an illness that lasts more than six months, possibly for the rest of a person's life.

**Cirrhosis** – a condition where injury to the liver results in replacement of normal liver tissue with scar tissue (fibrosis), nodules of regenerated liver cells and hardening of the liver. The working capacity of liver cells become badly impaired and they are unable to repair the liver; this is caused by long-term, continuous damage.

**End-stage liver disease** – a term sometimes used for cirrhosis. It can be more useful to describe a person's cirrhosis as either 'compensated' or 'decompensated'.

**Enzyme** – a protein that speeds up a chemical reaction within a cell, without being changed or used up in the reaction. Each enzyme has a specific job, there are many types of enzyme for the various different reactions.

**Fibroscan** – a non-invasive ultrasound scan, it is used to measure the stiffness of the liver.

**Free radical** – an unstable molecule created from the metabolism of oxygen in your body. Free radicals belong to a group known as 'reactive oxygen species'. Although a by-product of normal cell function, when too many are generated they can become toxic and lead to cell damage.

**Gastroenterologist** – a doctor who specialises in diseases of the gullet, stomach, bowel and their associated organs, the pancreas, liver and spleen.

**Hepatic** – anything relating to the liver.

**Hepatic encephalopathy (HE)** – disturbed brain function, leading to mental confusion and memory loss, this occurs when the liver is severely damaged and is unable to process waste products which are then carried to the brain in the blood.



**Hepatitis** – any inflammation of the liver is known as hepatitis, whether its cause is viral or not. A sudden inflammation of the liver is known as acute hepatitis. Where inflammation of the liver lasts longer than six months the condition is known as chronic hepatitis.

**Hepatocyte** – a liver cell.

**Hepatologist** – a doctor who specialises in liver diseases.

**Inflammation** – the body's reaction to acute and chronic injury or infection, commonly characterised by swelling, pain, redness and heat.

**Intrahepatic** – within the liver.

**Jaundice** – a condition in which the whites of the eyes go yellow and in more severe cases the skin also turns yellow. This is caused by accumulation in the blood of bilirubin; a yellow pigment and a waste product normally disposed of by the liver in bile (see bilirubin). Jaundice usually indicates a problem with the liver, though it can be caused by other conditions.

**Liver function tests (LFTs)** – a panel of tests used to indicate whether your liver is inflamed (hepatitis), damaged or not working properly. They measure levels of certain enzyme and protein substances in your blood that may alter when liver damage is present.

**Malnutrition** – (or being malnourished) is a serious condition that occurs when a person's diet does not contain the right amount of nutrients. It means "poor nutrition" and can refer to undernutrition – when you don't get enough nutrients or overnutrition – when you get more nutrients than you need.

**Metabolism** – the physical and chemical processes by which food is transformed into energy. This occurs by absorbing substances and using them in the body or by removing toxins and disposing of them from the body as waste products.

**Nutrient** – a substance required from our diet for growth, energy production and the body's functioning. Nutrients can be 'organic', such as carbohydrates, fats, proteins and vitamins, or 'inorganic'. Inorganic nutrients are usually dietary minerals, water, oxygen or iron.

**Steroid** – natural or synthetic compounds sharing the same four-ring molecular structure. Synthetic steroids can be used to reduce pain, swelling and other symptoms of inflammation.

**Varices** – expanded and protruding (dilated) veins that run along the wall under the lining of the upper part of the stomach and lower end of the gullet. If they rupture or break they will bleed heavily (variceal bleeding).

## Further information

The British Liver Trust publishes a large range of leaflets about the liver and liver problems specially written for the general public.

Titles you may find useful having read this leaflet include:

- *Cirrhosis of the Liver*
- *Diet and liver disease*
- *Liver disease tests explained*
- *Liver transplantation*
- *Living with liver disease*
- *Non-alcoholic fatty liver disease.*

**All our publications can be downloaded from our website  
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## Special Thanks

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