

Cirrhosis of the liver



BRITISH
LIVER
TRUST

Fighting liver disease

Cirrhosis of the liver

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 all forms of adult liver disease and our Helpline gives advice and support on general and medical enquiries. Call us on

0800 652 7330 or visit **www.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. It is very tough and able to continue to function when most of it is damaged. It can also repair itself – even renewing large sections.

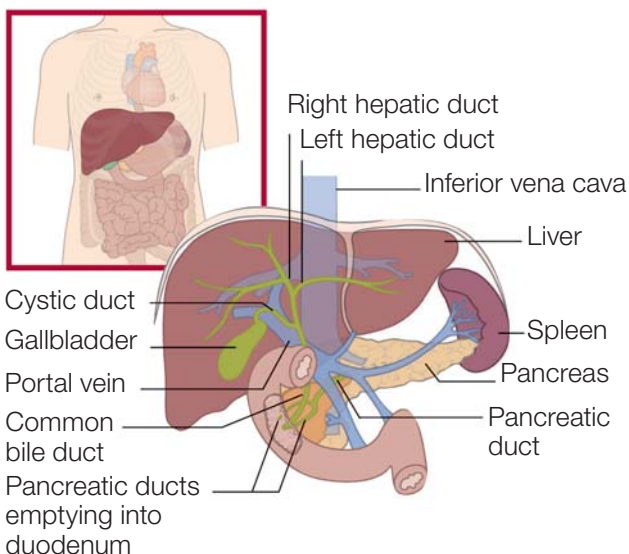
Your liver has around 500 different functions. Importantly it:

- fights infections and disease
- destroys and deals with poisons and drugs
- filters and cleans the blood
- controls the amount of cholesterol
- produces and maintains the balance of hormones
- produces chemicals – enzymes and other proteins – responsible for most of the chemical reactions in the body, for example, blood clotting and repairing tissue
- processes food once it has been digested
- produces bile to help break down food in the gut
- stores energy that can be used rapidly when the body needs it most
- stores sugars, vitamins and minerals, including iron
- repairs damage and renews itself.

How liver disease develops

Liver damage develops over time. Any inflammation of the liver is known as hepatitis, 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.

Fibrosis is where scar tissue is formed in the inflamed liver. Fibrosis can take a variable time to develop. Although scar tissue is present the liver keeps on functioning quite well. Treating the cause of the inflammation may prevent the formation of further liver damage and may stop or reverse some or all of the scarring.



Cirrhosis is when inflammation and fibrosis has spread throughout the liver and disrupts the shape and function of the liver. Even at this stage, people can have no signs or symptoms of liver disease. When the working capacity of liver cells has been badly impaired and they are unable to repair or renew the liver, permanent damage occurs.

Cirrhosis can lead to liver failure or liver cancer. All the chemicals and waste products that the liver has to deal with build up in the body. The liver is now so damaged that the whole body becomes poisoned by the waste products and this stage is known as end stage liver disease. In the final stages of liver disease the building up of waste products may cause multiple organ failure and lead to death.

What is cirrhosis?

Cirrhosis is the result of long-term, continuous damage to the liver and may be due to many different causes. The damage leads to scarring, known as fibrosis. Irregular bumps (nodules) replace the smooth liver tissue and the liver becomes harder. Together, the scarring and the nodules are called cirrhosis. Cirrhosis can take many years to develop and can do so without any noticeable symptoms until the damage to the liver is very serious. The build-up of scar tissue can interfere with the flow of blood to your liver and stop it from functioning properly. Cirrhosis can lead to liver failure.

How common is cirrhosis?

No one knows for sure how many people have cirrhosis as most people do not know they have it until the condition is serious. However, there is no doubt that the number of people with the condition continues to increase.

Every year over 4,000 people in the UK die from cirrhosis. Around 700 people have to have a liver transplant each year to survive.

Who is at risk of cirrhosis?

Cirrhosis can affect anyone – men and women, young and old. You are most at risk of having cirrhosis if you:

- drink too much alcohol
- have a long-term (chronic) liver infection, such as hepatitis B or hepatitis C
- have an inherited liver disease, such as genetic haemochromatosis

- have an immune system problem that leads to liver disease
- are clinically overweight or obese and have a fatty liver.

What are the symptoms of cirrhosis?

You are not likely to feel any symptoms of cirrhosis early on. In fact, many people with cirrhosis only find out during tests for an unrelated illness. Additionally, the symptoms can be very nonspecific, meaning that they are also caused by other conditions not related to cirrhosis.

If you have cirrhosis, you may develop one or more of the symptoms below. If you have or are worried about any of these symptoms discuss them with your doctor.

Early symptoms

- generally feeling unwell and tired all the time
- loss of appetite
- loss of weight and muscle wasting
- feeling sick (nausea) and vomiting
- tenderness/pain in the liver area
- spider-like small blood capillaries on the skin above waist level (spider angiomas)
- blotchy red palms
- disturbed sleep pattern

Later symptoms, as the liver is struggling to function

- intensely itchy skin
- yellowing of the whites of the eyes and the skin (jaundice)

- white nails
- ends of fingers become wider/thicker (clubbed fingers)
- hair loss
- swelling of the legs, ankles, feet (oedema)
- swelling of the abdomen (ascites)
- dark urine
- pale-coloured stools or very dark/black tarry stools
- frequent nosebleeds and bleeding gums
- easy bruising and difficulty in stopping small bleeds
- vomiting blood
- frequent muscle cramps
- right shoulder pain
- in men: enlarged breasts and shrunken testes
- in women: irregular or lack of menstrual periods
- impotence and loss of sexual desire
- dizziness and extreme fatigue (anaemia)
- shortness of breath
- very rapid heartbeat (tachycardia)
- fevers with high temperature and shivers
- forgetfulness, memory loss, confusion and drowsiness
- subtle change in personality
- trembling hands
- writing becomes difficult, spidery and small
- staggering gait when walking; tendency to fall
- increased sensitivity to drugs, both medical and recreational
- increased sensitivity to alcohol

Red flag symptoms

If you have any of the following symptoms you must see a doctor straight away, especially if you have recently been diagnosed with cirrhosis:

- fever with high temperatures and shivers, often caused by an infection
- shortness of breath
- vomiting blood
- very dark or black tarry stools
- periods of mental confusion or drowsiness.

Although these symptoms may seem very different, because your liver is responsible for so many different functions, if it stops working properly, a range of problems can result.

Yellow eyes or skin

If your skin and the whites of your eyes turn yellow you have jaundice.

Two things can cause jaundice:

- a blockage (obstruction) in the bile duct
- damage to your liver or some defect affecting the liver so that it cannot deal with bilirubin, a by-product of the breakdown of old red blood cells.

If either of these occurs, bilirubin – which is yellow – flows back into the blood and shows up in the skin and the eyes.

Swollen tummy and legs

Swelling in your abdomen is known as ascites. The swelling is caused by fluid building up in the lining around your abdomen. This can happen slowly over weeks or months and can be painful,

especially if the fluid becomes infected and requires urgent attention.

You may also get swelling in your legs, ankles or feet, known as peripheral oedema.

Fever with high temperatures and shivers

People with cirrhosis are prone to infections, which can make their liver condition worse. As a result, they should seek medical attention if they develop a temperature.

Tarry black stools or vomiting blood

Internal bleeding due to liver damage is often first noticed in very dark or black tarry faeces (maelena) and the vomiting of blood (haematemesis). Having either of these symptoms will need urgent medical attention.

If your liver is badly scarred from extensive fibrosis or cirrhosis, blood will be unable to flow through it easily. As a result, pressure builds up in the vein that carries blood to the liver from the gut – the portal vein.

Having high blood pressure in the portal vein is known as portal hypertension. As the pressure mounts, blood begins to back up. It finds another way of reaching the heart by using extra veins lining your oesophagus and stomach known as varices. Varices have fragile walls, which cannot easily handle the increased blood flow and often burst, leading to internal bleeding.

This blood loss may just be a gentle ooze, resulting in symptoms of anaemia that include

tiredness and shortness of breath, but sometimes there can be major bleeding, with a haemorrhage and vomiting of blood. Haemorrhaging varices are a serious and life-threatening complication of cirrhosis and need emergency medical treatment.

Memory loss, drowsiness and confusion (encephalopathy)

Confusion, short-term memory problems and even loss of consciousness can result if your liver is not working properly. You might feel sleepy, experience tremors and have difficulty performing simple tasks. This is because the liver, when working well, gets rid of waste products. When it is damaged, the waste products are carried to the brain by your blood. This condition is known as encephalopathy.

Diagnosis

It is not always easy to diagnose cirrhosis. A doctor will take a careful medical history, carry out a physical examination and make plans for further tests.

Some of the tests which may be used for cirrhosis include:

- **blood tests** which among other things measure the liver function and damage. These are most commonly liver function tests (LFTs). These are used to gain an idea of how the different parts of your liver are functioning.

The liver function test is made up of a number of separate examinations, each looking at different properties of your blood. It is used to gain an indication of how much your liver is inflamed or

unable to work properly. The test will measure, for example, levels of the liver enzymes ALT and AST as these are increased during inflammation (hepatitis).

It will also look at how well your blood clots (referred to as INR time) and how well your kidneys remove a product called creatinine. These are good indicators for how well your liver is working, and how this is affecting the rest of your body.

- **imaging tests** in which your liver may be scanned using ultrasound, computerised tomography (CT) or magnetic resonance imaging (MRI).

Ultrasound, the same technology used to confirm all is well in pregnancy, sends sound waves into your body. The echoes are picked up and used to build a picture of the condition of the liver.

MRI and CT provide a detailed view of your internal organs and are able to generate very detailed cross-sectioned images (or 'slices') of your body area.

- **liver biopsy** in which a tiny piece of the liver is taken to be looked at under a microscope. A fine hollow needle is passed through the skin into the liver and a small sample is withdrawn. The test is usually done under local anaesthetic and may mean an overnight stay in hospital, although most people are allowed home later the same day if they live close by.

- **endoscopy** in which, following sedation, a thin flexible tube with a light and a tiny camera on the end (endoscope) is passed down your oesophagus and into your stomach. This is to check for and treat varices in the oesophagus or stomach which may otherwise rupture and suddenly bleed.

What are the different stages of cirrhosis?

Cirrhosis is sometimes called end stage liver disease. This simply means it comes after the other stages of liver damage which can include inflammation (hepatitis), fatty deposits (steatosis) and increased stiffness and mild-scarring of your liver (fibrosis).

Many people with cirrhosis can feel quite well and live for many years without needing a liver transplant. This is because the liver can function relatively well even when it is quite severely damaged.

Cirrhosis is classified as compensated or decompensated. Compensated cirrhosis is where the liver is coping with the damage and maintaining its important functions. In decompensated cirrhosis, the liver is not able to perform all its functions adequately. People with decompensated liver disease or cirrhosis often have serious symptoms and complications such as portal hypertension, bleeding varices, ascites and encephalopathy.

There are also systems for grading cirrhosis according to its severity. One of these is the Childs Pugh Score, which uses symptoms including

encephalopathy and ascites together with blood test results for bilirubin, albumin and clotting, to grade cirrhosis from A (relatively mild) to C (severe).

There are other systems including MELD (model of end-stage liver disease) which are used to help decide which patients most urgently need liver transplants. It uses blood test results for bilirubin, creatinine and clotting (INR).

Prevention

Anything that leads to the long-term, continuous damage of the liver can cause cirrhosis. These include:

- alcohol
- viral infections such as hepatitis B and hepatitis C
- a build up of fat in the liver known as non alcoholic fatty liver disease (NAFLD) that may progress to a more severe condition known as non alcoholic steatohepatitis or NASH
- autoimmune hepatitis
- primary biliary cirrhosis (PBC) and other long-term diseases of the bile ducts such as primary sclerosing cholangitis (PSC) or biliary atresia (BA) in children
- certain inherited diseases, such as genetic haemochromatosis and Wilson's disease
- long-term contact with some drugs and poisons
- blood vessel (vascular) disease, such as Budd-Chiari syndrome.

Treatment

Treatment depends on the cause and stage of the cirrhosis. The aim of treatment is to stop the cirrhosis getting worse, to reverse any damage (if this is possible) and to treat any disabling or life-threatening complications.

Stopping the progression

Making lifestyle changes and cutting alcohol out of your diet may help delay progression.

Many causes of liver disease can now be treated much more successfully than before to stop or at least slow down any decline in the condition of your liver.

This includes treating infections such as hepatitis B or C with new anti-viral medications and autoimmune diseases such as autoimmune hepatitis (AIH) with steroid-based drugs. Genetic haemochromatosis (GH), an inherited liver disease, can be managed successfully with phlebotomy or venesection, a procedure similar to blood donation in which a quantity of blood is regularly taken from a vein in your arm.

Reversing the problem

Until recently, it was thought that a liver with cirrhosis could not be healed. This is usually the case because most diseases that cause scarring of your liver (fibrosis) are long-term and difficult to 'cure'.

However, recent research has shown that it may be possible to heal scarring and even cirrhosis where the liver disease causing this damage is able to be successfully treated.

The treatment of hepatitis B and C, as already mentioned, gives hope for the development of new drugs to combat scarring of the liver. More research, however, needs to be done before any new treatments become widely available.

Treating and managing the effects of cirrhosis

Another aspect of treatment is to deal with the complications of cirrhosis as early as possible. For this reason your doctor may suggest you have regular tests to identify problems even before you notice any symptoms. You may also be given other drugs to reduce blood pressure, to prevent and treat infections and to help support your body's functions.

Portal hypertension and variceal bleeding

Medicines including beta blockers such as propranolol can reduce the risk of bleeding and reduce the severity of any bleed, should it occur. If there is a serious bleed, initial treatment is to replace the fluid and then to identify and correct the cause of bleeding. There are several techniques aimed at stemming the bleeding which involve endoscopy.

One of these is called banding, where a single vein (called an oesophageal varix) is sucked into a ring at the end of the endoscope. A small band is then placed around the base of the varix which will control the bleeding.

Injection sclerotherapy is also used and involves injecting a substance into the veins of the gullet to induce clotting and scar tissue that will help stop the veins from bleeding.

If bleeding can not be stopped by endoscopy, a Sengstaken tube is passed down the throat into the stomach. This device has a balloon on the end. Once this balloon is inflated, it puts pressure on the varices and helps control the bleeding. People are heavily sedated for this procedure.

If bleeding still cannot be controlled a procedure to lower pressure in the portal vein called a transjugular intrahepatic portosystemic stent shunt (TIPSS) may be needed. In this procedure a metal tube (stent) is passed across your liver to join two large veins (the portal vein and hepatic vein). This creates a bypass (shunt) so the blood flows straight into the hepatic vein relieving the pressure which causes the varices.

Ascites and peripheral oedema

Ascites (fluid building in your abdominal cavity, appearing like a bulge across your tummy area) and peripheral oedema (swelling in your ankles and legs) are very common in people with advanced cirrhosis. Ascites can be uncomfortable and make it hard for people to breathe and eat normally. In addition, there is a risk of infection in the fluid, called spontaneous bacterial peritonitis (SBP), which can be life threatening and is treated with antibiotics.

The main treatments for ascites and oedema are sodium restriction (low salt diet and diuretics, such as spironolactone and Furosemide). It can be helpful to see a dietitian about how to manage on such a strict diet. Some patients benefit from having the fluid drained off the abdomen with a needle and tube. This usually needs to be repeated

every few weeks. Patients considered at higher risk of infection may be offered prophylactic (preventative) antibiotics to take every day.

Hepatic encephalopathy

Many people with cirrhosis experience episodes of hepatic encephalopathy, most at a level where it is not very noticeable. In overt stages (where it is noticeable), it can show up as sleep disturbance, mild confusion, subtle personality changes and slightly poorer performances in tests such as drawing a star and connecting dots. It can also feature problems in movement (called ataxia) and speech, slurring of words, tremor and a particular symptom of flapping hands when you extend your arms (called asterixis). In some people the sleepiness can progress to a loss of consciousness and even to a coma, where it can be life-threatening.

The main treatment for encephalopathy is lactulose (a sweet syrupy medicine). This not only acts as a laxative but also helps the body remove the toxins that build up in the body when the liver is failing. People are given enough lactulose so that they have one or two loose bowel movements each day. They may also be given other laxatives and/or an enema. Most periods of encephalopathy are triggered by problems such as an infection, constipation, dehydration, a medicine or a bleed. It is important that patients seek medical advice so the cause of an episode can be identified and treated.

Bleeding

The liver makes products to help blood clot (including clotting factors and platelets) and when the liver stops working effectively, patients can be at risk of severe bleeding. Treatments include administering vitamin K and plasma in medical emergencies. People should seek specialist advice before having medical procedures, including any dental work, and ensure that they treat any cuts that bleed with pressure and bandages and seek medical help.

Kidney problems

People with decompensated cirrhosis who are already very ill with problems such as encephalopathy, jaundice and bleeding problems, are at risk of a serious complication called hepatorenal syndrome, which is kidney failure in liver disease. For most patients, a liver transplant is needed, for some urgently.

Liver cancer

Some people with cirrhosis develop liver cancer, most commonly hepatocellular carcinoma (HCC). The aim is to detect and treat liver cancer as early as possible.

Treatment can involve cutting out the part of the liver affected by cancer. There are a variety of other treatments aimed at controlling the cancer, including injections of chemotherapy, radio frequency ablation and oral medicines. A liver transplant may be an option for some patients.

Liver transplantation

If your liver is very badly damaged, a liver transplant may be needed. This is a procedure where a diseased liver is removed during a lengthy operation and replaced with a healthy donor liver.

A liver transplant is usually only recommended if other treatments are no longer helpful and your life is threatened by end stage liver disease. It is a major operation and you will need to plan it carefully with your medical team, family and friends.

Liver transplantation is usually very successful although in some cases it is possible for liver diseases to return and affect your new liver.

Discuss any worries you have about your suitability for treatment with your specialist nurse or doctor and those nearest to you.

Phil's story

I led what I considered a normal lifestyle. I walked my dogs, did some gardening and played with my children. However, I did have quite a stressful career. I regularly visited the pub after work to let off steam, usually drinking two or three pints. I went out most weekends with friends, sometimes drinking five or six pints in a long evening. I never thought myself a particularly heavy drinker.

The first signs of a liver problem were a tender abdomen and a yellowing in my eyes which friends noticed. I was also having problems sleeping and was quite short tempered. I put these symptoms down to stress and never really thought any more about them. So it was a complete shock when one evening I passed blood when visiting the toilet. This was quickly followed by vomiting copious amounts of blood.

I was admitted to hospital and subjected to a battery of tests. I felt deep down that the problem was serious. I was regularly passing blood in my stools and knew that I would not be going home that day. Nobody was telling me too much, other than I was bleeding internally.

The next few weeks were a blank as I was now so ill. My family was told to expect the worst. The bleeding was coming from varices in my oesophagus that were unable to cope with pressure caused by damage and scarring in my

liver. Following a liver biopsy and a CT scan, things took a turn for the worse. Due to immense blood loss, my heart had to be restarted. I was transferred to a liver intensive therapy unit (LITU). Through their expertise I slowly came out of immediate danger. My varices were glued and banded and, after having a tracheotomy, I was brought out of my induced coma four weeks later. I was eventually discharged three weeks after this.

Although I had to be readmitted to hospital a couple of times for further bleeding, I now have ongoing treatment as an outpatient and monthly consultant appointments. These involve blood tests, ultrasound scans and physical examinations. I have an endoscopy every three months to check my varices, which is not a pleasant experience. I also have had regular heart and lung function tests. I take drugs to control my blood pressure, fluid retention, iron levels and bowel movements. I still suffer from poor memory, concentration and balance. I have constant lethargy and insomnia, joint pain most of the time, and my libido is non-existent.

As I have not touched alcohol since I was ill, my liver function is slowly improving. Although I have been assessed for transplant, this may be unnecessary if I continue my abstinence.

If I had known the effects alcohol was going to have on me I would have been much more

careful. These are not only physical. Both my family and I have endured many months of emotional pain. My lifestyle is not great any more. I am restricted in the activities I can take part in and I find this frustrating.

The key thing I have learned is that your liver does not complain about its condition until you are a long way down the path to cirrhosis and, as in my case, this is often too late.

The NHS was great in fixing my clinical problems, but there is nothing in place to deal with the mental aftermath of the whole experience. This has to be considered. Psychological scars take a long time to heal.

Looking after yourself

Day-to-day coping strategies

In general, it is best to aim for as near to a normal life as possible. However, there are some points that you should keep in mind to help you feel as healthy as you can.

- Take care of yourself by ensuring enough rest and exercise.
- Follow sensible hygiene measures if your immunity is low.
- Always discuss the use of over-the-counter drugs with your doctor since it is important to avoid some, especially painkillers such as aspirin and ibuprofen, if you have cirrhosis.
- Try to limit your exposure to colds and other infectious diseases.
- Talk to your doctor about having a flu vaccination in the winter months.
- Before travelling abroad, talk to your doctor about whether you should have any vaccinations.
- Join a support group for more information and personal support.
- Take an active interest in your healthcare.
- Gather as much information as you need from charity telephone helplines and their supporting websites.

If you find yourself becoming depressed, talk this over with your doctor who can discuss ways of overcoming this. If appropriate, certain medications can be helpful in helping you cope. Remember

that liver function can improve if you take care of yourself and receive early treatment.

However, you must ensure that health professionals know you have cirrhosis before giving or prescribing any treatment or medication for you.

Diet

It is important to eat well and to include a good balance of foods in your diet including vitamins, minerals and calcium. It is likely you will need extra energy and protein.

Cirrhosis affects your ability to store glycogen, a carbohydrate that gives you short-term energy. This means that your body has to use its own muscle tissue to provide energy between meals and this can lead to muscle wasting and weakness.

If you are affected in this way, snacking between meals is a way you can top up on calories and protein. Another good method is to eat three or four small meals in a day rather than one large protein or carbohydrate-heavy meal.

You may find having nourishing drinks a help. These can include homemade milkshakes or commercially-made products such as Build Up, Complan, Recovery and Nourishment. These are available at most chemists. It is a good idea to check with your doctor or dietician first to see make sure they are suitable for you.

Try to avoid salty foods or adding salt to what you eat, to help control fluid retention.

Alcohol and cirrhosis

Almost everyone who drinks too much alcohol will suffer some liver damage, but this does not necessarily turn into cirrhosis. As many as nine out of ten people who drink to excess will develop a fatty liver, with one in ten progressing to cirrhosis.

In general, the more you drink, the greater your chance of developing alcoholic hepatitis or cirrhosis. A poor diet may make the problem worse.

All types of alcoholic drinks can lead to liver disease. If you have cirrhosis – whether it is caused by alcohol or not – you should not drink alcohol at all.

Complementary and alternative medicines

Many complementary and alternative medicines are available that may ease the symptoms of liver disease. But certain medications used in non-liver related disease can damage the liver. At present, healthcare professionals are not clear on the role and place of some therapies in managing liver disease. More research needs to be done on the use of these therapies. You may wish to discuss the use of these therapies with your doctor.

Useful words

Acute – a short sharp illness that may be severe but from which most people will recover in a few weeks without lasting effects.

Albumin – the main protein in human blood, manufactured by the liver. Low albumin levels are an indication of liver damage.

ALT – alanine aminotransferase, a liver enzyme that enters the blood following liver damage. An ALT test is used, for example, to monitor and assess the degree of damage in patients infected with chronic hepatitis B and other types of hepatitis.

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

AST – aspartate aminotransferase, a liver enzyme but less specific to the liver than ALT (see above). A raised AST level may follow a heart attack, for example.

Autoimmune – a type of disease where the body's defences attack another part of the body.

Bile – a yellow/green fluid made by the liver to help digest foods containing fat and cholesterol.

Bilirubin – a breakdown product of haemoglobin. Increases of bilirubin in the blood can indicate liver disease, especially disease of the bile ducts.

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.

Cholestasis – a condition where the flow of bile from the liver is reduced.

Chronic – an illness that lasts a long time (more than six months), possibly for the rest of a person’s life.

Compensated cirrhosis – a stage at which the liver is severely scarred but there are enough healthy cells for the liver to perform all of its functions adequately. People who have compensated cirrhosis may feel quite well.

Decompensated cirrhosis – where the liver is not capable of performing all of its normal functions. People may experience a variety of symptoms, including ascites, bleeding varices, jaundice and hepatic encephalopathy.

Encephalopathy – disturbed brain function leading to mental confusion, drowsiness and memory loss. Encephalopathy can follow the development of cirrhosis, for example.

End-stage liver disease – another term used for cirrhosis and indicates that a person is in poor health. It can be more useful to describe a person’s cirrhosis as either ‘compensated’ or ‘decompensated’ (see above).

Fibrosis – where scar tissue is formed in an inflamed liver. Fibrosis can take a variable time to develop and, even with scar tissue present, the liver keeps on functioning quite well. However, continued building up of scar tissue may lead to cirrhosis.

Hepatic – anything relating to the liver.

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.

Hepatomegaly – enlarged and tender liver.

Inferior vena cava – the large vein that carries blood back to the heart from the lower part of the body.

Inflammation – the first response of the immune system to infection, commonly characterised by heat, swelling, pain and tenderness.

INR time – International normalised ratio, a term used to describe how quickly your blood clots and your risk of bleeding. As the liver makes clotting factors and platelets, it is a useful indicator of how well your liver is functioning. Normal INR is around 1 and a higher INR indicates increased risk of bleeding and poorer blood clotting.

Haemorrhage - bleeding, an escape of blood from any of the blood vessels. It can be inside the body, such as bleeding from a stomach ulcer or bleeding oesophageal varices. It can also be external bleeding, such as from a deep cut to the skin.

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 a rise in bilirubin plasma (containing yellow pigment) which is normally disposed of by the liver.

Oesophagus – the gullet. This important part of the digestive system is a tube through which food and liquid travels from the mouth to the stomach.

Portal vein – the vein that carries blood from the bowel and the spleen to the liver.

Portal hypertension – a complication of cirrhosis where there is increased blood pressure in the portal vein. Portal hypertension is characterised by impaired or reversed blood flow, an enlarged spleen, and protruding veins in the oesophagus and stomach.

Protein – the active molecule in cells that determines the physical structure of the organs and tissue that make up your body. Proteins also control the biological and chemical reactions within your body.

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).

Who else can help?

AIH Support Group

12 Seaward Walk

Great Yarmouth

Norfolk NR30 5NS

Tel: 0845 370 0997

Email: matt@autoimmunehepatitis.co.uk

Web: www.autoimmunehepatitis.co.uk

An online support group providing information and support for people with autoimmune hepatitis.

Alcoholics Anonymous

General Service Office,

PO Box 1

10 Toft Green,

York YO1 7ND

Tel: 01904 644026

Helpline: 0845 769 755

Web: www.alcoholics-anonymous.org.uk

A self-help group for people with alcohol problems.

Al-Anon Family Groups UK & Eire

61 Great Dover Street,

London SE1 4YF

Tel: 020 7403 0888

Email: enquiries@al-anonuk.org.uk

Web: www.al-anonuk.org.uk

An organisation that provides support to anyone whose life is, or has been, affected by someone else's drinking.

Drinkline (The National Alcohol Helpline)

Tel: 0800 917 8282 (9.00am to 11.00pm,
Monday to Friday)

A telephone helpline that offers information and self-help materials, help to callers worried about their own drinking, support to the family and friends of people who are drinking and advice to callers on where to go for help.

The Haemochromatosis Society

Hollybush House
Hadley Green Road
Barnet
Herts EN5 5PR

Tel: 020 8449 1363

Email: info@haemochromatosis.org.uk

Web: www.gh.soc.org

An organisation that supports people with genetic haemochromatosis with their problems.

The Hepatitis B Foundation UK

Godmersham Park
Canterbury
Kent CT4 7DT

Tel: 01227 738 279 (office)

Tel: 07768 847545 (mobile)

Web: www.hepb.org.uk

A charity that promotes the prevention of hepatitis B and the welfare of people affected.

The Hepatitis C Trust

27 Crosby Row

London SE1 3YD

Helpline: 0845 223 4424

Email: info@hepcctrust.org.uk

Web: www.hepcctrust.org.uk

A charity that provides a range of services to provide support, information and representation for people with hepatitis C.

PBC Foundation (UK)

54 Queen Street

Edinburgh EH2 3NS

Tel: 0131 225 8586

Fax: 0131 225 7579

Email: info@pbcfoundation.org.uk

Web: www.pbcfoundation.org.uk

A charity offering support and information to people with PBC, their families and friends.

Special thanks

Dr Mark Wright, Consultant Hepatologist,
Southampton University Hospital Trust

Phil Cameron

Further information

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

Leaflets that you may find particularly helpful include:

- *Alcohol and liver disease*
- *Autoimmune hepatitis*
- *Diet and liver disease*
- *Fatty liver and NASH*
- *Haemochromatosis*
- *Hepatitis B*
- *Hepatitis C*
- *Liver disease tests explained*
- *Liver transplantation*
- *Life after liver transplant*
- *Primary biliary cirrhosis*

Contact us for more information:

Tel: 0800 652 7330

Email: info@britishlivertrust.org.uk

Web: www.britishlivertrust.org.uk

This leaflet is for information only. Professional, medical or other advice should be obtained before acting on anything contained in the leaflet as no responsibility can be accepted by the British Liver Trust as a result of action taken or not taken because of the contents.

Can you make a difference?

Liver disease is increasing alarmingly and the need to do more is greater than ever before...

For the British Liver Trust to continue its support, information and research programme, we need your help. We raise funds from many sources and a large proportion is donated by voluntary contributions. If you would like to send a donation it will enable us to continue providing the services that people need.

If you can help, please fill in the form on the page opposite.

If you wish to help us further with our work by organising or participating in a fundraising event or becoming a **“Friend of the British Liver Trust”** please:

**Call us on
0800 652 7330**

**Email us at
info@britishlivertrust.org.uk**

**Make a donation via our website at
www.britishlivertrust.org.uk**

**or write to
British Liver Trust
2 Southampton Road,
Ringwood, BH24 1HY**



I enclose a cheque/postal order made payable to the British Liver Trust

I wish to pay by credit card:

MasterCard Visa CAF CharityCard

Please debit my card with the sum of £.....

Card No.

Expiry date.....

Name.....

Address.....

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Telephone.....

Email.....

Signature..... Date.....

I am a tax payer and authorise the charity to reclaim the tax on my donation*

Please send me your newsletter

Please send me a list of information leaflets

I am interested in leaving the Trust a legacy. Please send me more information

* You must pay an amount of income tax and/or capital gains tax equal to the amount the British Liver Trust will reclaim on your donation: which is equal to 28p for every £1 you donate.

Your name and address will be added to our computer database ensuring you are sent the latest information. If you do not wish to receive further information, please tick here.

British Liver Trust

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