

Cirrhosis

Introduction

Cirrhosis is scarring of the liver as a result of continuous, long-term liver damage. Scar tissue replaces healthy tissue in the liver and prevents the liver from working properly.

The damage caused by cirrhosis can't be reversed and eventually can become so extensive your liver stops functioning. This is called liver failure.

Cirrhosis can be fatal if the liver fails. However, it usually takes years for the condition to reach this stage and treatment can help slow its progression.

Signs and symptoms

There are usually few symptoms in the early stages of cirrhosis. However, as your liver loses its ability to function properly, you're likely to experience a loss of appetite, nausea and itchy skin.

In the later stages, symptoms can include jaundice (yellowing of the skin and whites of the eyes), vomiting blood, dark, tarry-looking stools and a build-up of fluid in the legs (oedema) and abdomen (ascites).

When to see your DOCTOR

As cirrhosis doesn't have many obvious symptoms during the early stages, it's often picked up during tests for an unrelated illness.

See your DOCTOR if you have any of the following symptoms:

fever and shivering

shortness of breath

vomiting blood

very dark or black, tarry stools (faeces)

periods of confusion or drowsiness

Why cirrhosis happens

The most common causes of cirrhosis are drinking too much alcohol (alcohol misuse) over many years, being infected with the hepatitis C virus for a long time and a condition called non-alcoholic steatohepatitis (NASH).

Less common causes include hepatitis B infection and inherited liver diseases, such as haemochromatosis.

Treating cirrhosis

Currently, cirrhosis can't be cured. However, it is possible to manage the symptoms and any complications, and slow its progression.

Treating underlying conditions that may be the cause, such as using anti-viral medication to treat a hepatitis C infection, can also stop cirrhosis getting worse.

You may be advised to cut down or stop drinking alcohol or to lose weight if you're overweight. A wide range of alcohol support services are available.

In its more advanced stages, the scarring caused by cirrhosis can make your liver stop functioning. In this case, a liver transplant is the only treatment option.

Preventing cirrhosis

Not exceeding recommended limits for alcohol consumption is the best way of preventing alcohol-related cirrhosis.

Men should drink no more than 3-4 units of alcohol a day. Women should drink no more than 2-3 units a day.

Hepatitis B and C are infectious conditions that can be caught through having unprotected sex or by sharing needles to inject drugs. Using a condom during sex and avoiding injecting drugs will reduce your risk of developing hepatitis B and C.

You can be vaccinated against hepatitis B but there is currently no vaccine for hepatitis C.

Symptoms of cirrhosis

There are usually few symptoms during the early stages of cirrhosis. Noticeable problems tend to develop as the liver becomes more damaged.

In early stage cirrhosis, the liver is able to function properly despite damage. As cirrhosis progresses, symptoms tend to develop when functions of the liver are affected.

Symptoms of cirrhosis can include:

tiredness and weakness

loss of appetite

weight loss and muscle wasting

feeling sick (nausea) and vomiting

tenderness or pain around the liver area

tiny red lines (blood capillaries) on the skin above waist level

very itchy skin

yellowing of the skin and the whites of the eyes (jaundice)

a tendency to bleed and bruise more easily, such as frequent nosebleeds or bleeding gums

hair loss

fever and shivering attacks

swelling in the legs, ankles and feet due to a build-up of fluid (oedema)

swelling in your abdomen (tummy), due to a build-up of fluid known as ascites - severe cases can make you look heavily pregnant

You may also notice changes in your personality, problems sleeping (insomnia), memory loss, confusion and difficulty concentrating. This is known as encephalopathy and occurs when toxins affect your brain because your liver is unable to remove them from your body.

Late-stage symptoms

In the later stages of cirrhosis, you may vomit blood or have tarry, black stools. This is because blood can't flow through the liver properly, which causes an increase in blood pressure in the vein that carries blood from the gut to the liver (portal vein).

The increase in blood pressure forces blood through smaller, fragile vessels that line your stomach and gullet (varices). These can burst under high blood pressure, leading to internal bleeding, which is visible in vomit and/or stools.

Over time, the toxins that would normally be removed from the body by a healthy liver can cause multiple organ failure, followed by death.

When to seek medical help

You should see your DOCTOR if you have persistent signs and symptoms of cirrhosis.

You should seek immediate medical help if you develop the following symptoms, especially if you have been previously diagnosed with cirrhosis:

fever and shivering attacks

shortness of breath

vomiting blood

very dark or black tarry stools

periods of mental confusion or drowsiness

Causes of cirrhosis

There are many different causes of cirrhosis. In the UK, the most common causes are drinking excessive amounts of alcohol and long-term hepatitis C infections.

In some cases, no specific cause is identified.

Alcohol consumption

The liver breaks down toxins (poisons), such as alcohol, but too much alcohol can scar and damage its cells. Men who drink more than 21 units of alcohol a

week and women who drink more than 14 units of alcohol a week are considered to be drinking too much.

If you're a heavy drinker, your chances of developing cirrhosis are increased. However, it's important to realise that cirrhosis of the liver isn't just a condition that affects people dependent on alcohol. If you're a heavy social drinker, you can also develop cirrhosis.

Alcohol-related cirrhosis usually develops after 10 or more years of heavy drinking. For unknown reasons, some people are more susceptible to liver cell damage than others. Women who drink heavily are more susceptible to liver damage than men, partly because of their different body size and build.

Stages of alcoholic liver damage

People who drink excessively and continue to drink heavily develop cirrhosis in three separate stages. These are described below.

The first stage of alcohol-related liver disease is known as 'fatty liver', which almost all excessive drinkers develop. It is a side effect of the liver breaking alcohol down. It disappears when you drink less.

The second stage of alcohol-related liver disease is alcoholic hepatitis. Around 20-30% of people who continue to drink heavily develop alcoholic hepatitis. During this stage, the liver becomes inflamed. If alcoholic hepatitis deteriorates into its most extreme form (liver failure) it can lead to death.

About 10% of heavy drinkers develop cirrhosis, which is the third stage of alcohol-related liver disease.

This risk of developing cirrhosis, along with the risk of alcoholic hepatitis, is one of the main reasons the government recommends that men shouldn't regularly drink more than 3-4 units of alcohol a day, and women shouldn't drink more than 2-3 units of alcohol a day.

Hepatitis

Hepatitis is inflammation of the liver. Left untreated, it can damage the liver over many years, eventually resulting in cirrhosis.

The most common form of hepatitis is hepatitis C. The hepatitis C virus is usually transmitted through blood-to-blood contact, most commonly by sharing needles used to inject drugs.

Two other forms of the infection, hepatitis B and D, can also cause cirrhosis.

Non-alcoholic steatohepatitis

Non-alcoholic steatohepatitis (NASH) is a severe liver condition that can lead to cirrhosis. As with alcohol-related liver disease, the early stage of NASH is the build-up of excess fat in the liver. This fat is associated with inflammation and scarring, which could lead to cirrhosis.

NASH can develop in people who are obese, have diabetes, have high levels of fat in the blood (high cholesterol) and high blood pressure. Most people with NASH feel well and aren't aware they have a problem until cirrhosis occurs and liver function is affected.

Other causes

A number of other conditions and inherited diseases can prevent the liver functioning healthily and can lead to cirrhosis. These include:

autoimmune liver disease – the immune system usually makes antibodies to attack bacteria and viruses; however, if you have an autoimmune disease, such as autoimmune hepatitis, primary biliary cirrhosis or primary sclerosing cholangitis (PSC), your immune system will make antibodies that attack healthy organs

some rare, genetic conditions – such as haemochromatosis (a build-up of iron in the liver and other parts of the body) and Wilson's disease (a build-up of copper in the liver and other parts of the body)

any condition that causes the bile ducts to become blocked – such as cancer of the bile ducts or pancreatic cancer

Budd-Chiari syndrome – caused by blood clots blocking the veins that carry blood from the liver

Less commonly, the use of certain medications, such as amiodarone and methotrexate, can also cause cirrhosis.

Diagnosing cirrhosis

If your DOCTOR suspects cirrhosis, they will check your medical history and carry out a physical examination to look for signs of chronic liver disease.

If they suspect you have a damaged liver, you'll be referred for tests to confirm the diagnosis.

Tests

You may have any of the tests described below:

Blood tests - to measure your liver function and the amount of liver damage. The test may measure the levels of the liver enzymes alanine transaminase (ALT) and aspartate transferase (AST) in your blood, as these will be raised if you have inflammation of the liver (hepatitis).

Scans – an ultrasound scan, transient elastography (a similar test to an ultrasound scan carried out during pregnancy; it is sometimes referred to as Fibroscan), computerised tomography (CT) scan or a magnetic resonance imaging (MRI) scan may be carried out on your liver. These scans can produce detailed images of your liver or check liver stiffness to identify any scarring.

Liver biopsy – where a fine needle is inserted into your body (usually between your ribs), in order to remove a small sample of liver cells. The sample is then sent to a laboratory to be examined under a microscope. The biopsy is usually carried out under local anaesthetic, as a day case or with an overnight stay in hospital. The outcome of the biopsy will confirm a diagnosis of cirrhosis and may provide more information about the cause. However, transient elastography is increasingly being used as an alternative to a biopsy in the diagnosis of cirrhosis.

Endoscopy – an endoscope is a thin, long, flexible tube with a light and a video camera at one end. It is passed down your oesophagus (the long tube that carries food from the throat to the stomach) and into your stomach. Images of your oesophagus and stomach are transmitted to an external screen where any varices (swollen vessels) a sign of cirrhosis, can be seen.

The Lab Tests Online website has more information about ALT and AST measurements.

Grading

There are several different systems for grading cirrhosis according to how serious it is. One system is the Child-Pugh score which, based on your examination and laboratory tests, grades cirrhosis from A (relatively mild) to C (severe).

An alternative system called model of end-stage liver disease (MELD) uses the results of a blood test to help identify people who need an urgent liver transplant.

Treating cirrhosis

Cirrhosis can't be cured. Treatment aims to manage the symptoms and any complications, as well as stopping the condition from getting worse.

It's usually not possible to reverse liver damage that's already occurred, although recent research suggests this may eventually be possible in cases where the underlying cause of the liver damage can be successfully treated.

Treatment is likely to take place at a hospital with a specialist hepatology unit (which treats disorders of the liver, gall bladder and biliary ducts).

Stopping cirrhosis getting worse

Taking medication to treat the underlying cause of the liver damage and making healthy lifestyle changes can help stop your cirrhosis getting worse and reduce your risk of further health problems.

Medication

The medication you need depends on the specific cause of the damage to your liver.

For example, if you have viral hepatitis you may be prescribed anti-viral medications. If you have autoimmune hepatitis you may be given steroid medication (corticosteroids) or a medication to suppress your immune system (immunosuppressants).

Lifestyle changes

There are a number of things you can do to help yourself stay healthy and reduce your chances of developing further problems if you have cirrhosis, including:

completely avoid alcohol, regardless of the cause of your cirrhosis, as alcohol consumption increases the rate at which the condition progresses

lose weight if you are overweight or obese

regularly exercise to reduce muscle wasting

practise good hygiene to reduce your chances of developing infections

speak to your DOCTOR about vaccinations you may need, such as the annual flu vaccine or travel vaccines

speak to your DOCTOR or pharmacist if you're taking over-the-counter or prescription medications, as cirrhosis can affect the way your body processes some medicines

Malnutrition is common in people with cirrhosis, so it's important to eat a balanced diet to help ensure you get all the nutrients you need.

Avoiding salty foods and not adding salt to foods you eat can help reduce your risk of developing swelling in your legs, feet and abdomen (tummy) caused by a build up of fluid. See tips for a lower salt diet for more information.

The damage to your liver can also mean it is unable to store glycogen, a carbohydrate that provides short-term energy. When this happens, the body uses its own muscle tissue to provide energy between meals, which leads to muscle wasting and weakness. Therefore, you may need extra energy and protein in your diet.

Healthy snacking between meals can top up your calories and protein. It may also be helpful to eat three or four small meals a day, rather than one or two large meals.

Easing symptoms

A number of treatments can ease the symptoms of cirrhosis. They include:

a low-sodium (salt) diet or tablets called diuretics to reduce the amount of fluid in your body

tablets to reduce high blood pressure in your portal vein (the main vein transporting blood from the gut to the liver) and prevent or treat any infection
creams to reduce itching

Managing complications of advanced cirrhosis

With advanced cirrhosis, complications caused by the condition may need treatment.

Swollen varices

If you vomit blood or pass blood in your stools, you probably have swollen veins in your oesophagus (the long tube that carries food from the throat to the stomach). These are known as oesophageal varices.

In these cases, urgent medical attention is required. This means seeing your DOCTOR or going to the accident and emergency (A&E) department of your nearest hospital immediately.

Certain procedures can help stop the bleeding and reduce the risk of it happening again, such as:

Banding – an endoscopy is carried out (a thin, flexible tube is passed down your throat) and a small band is placed around the base of the varices to help control the bleeding.

Injection glue therapy – following an endoscopy, a type of medical “super glue” is injected into the varices to make the blood clot, which helps to stop the bleeding.

A Sengstaken tube with a balloon on the end – a special tube is passed down your throat into your stomach and the balloon is inflated. This puts pressure on the varices and helps stop the bleeding. You'll be heavily sedated during the procedure.

A transjugular intrahepatic portosystemic stent shunt (TIPSS) – a metal tube called a stent is passed across your liver to join two large veins (the portal vein and hepatic vein). This creates a new route for your blood to flow through, therefore relieving the pressure that causes the varices.

You may also be given a type of medication called a beta blocker, such as propranolol, to reduce the risk of bleeding or reduce the severity of any bleed that does occur.

Fluid in the tummy and legs

Ascites (a build-up of fluid around your stomach area) and peripheral oedema (fluid around your legs and ankles) are common complications of advanced cirrhosis. They'll need to be addressed as soon as possible.

You may have 20 to 30 litres of free water in your stomach area (abdomen), which can make it difficult for you to eat and breathe properly. The main treatments for ascites and oedema are restricting sodium (salt) in your diet and taking diuretic tablets, such as spironolactone or furosemide.

If the fluid around your stomach becomes infected, you may need to be treated with antibiotics. Alternatively, antibiotics may be used on a regular basis to prevent infection in people at high risk.

In severe cases of ascites, tubes may be used to drain the fluid from your abdomen. This will usually be repeated every few weeks.

Encephalopathy

People with cirrhosis can sometimes develop problems with their brain function (encephalopathy). This occurs because the liver isn't clearing toxins properly.

The main treatment for encephalopathy is lactulose syrup. This acts as a laxative (it helps clear the bowels) and helps the body remove the toxins that build up in the body when the liver is failing. In some cases, other laxatives or an enema may be used.

Bleeding

Cirrhosis can affect the liver's ability to make the blood clot (thicken), leaving you at risk of severe bleeding if you cut yourself. Vitamin K and a blood product called plasma can be given in emergencies to treat episodes of bleeding. You'll need to apply pressure to any cuts that bleed.

Therefore, you should seek specialist advice before having medical procedures, including any dental work.

Liver transplant

Your liver may stop functioning if it's severely damaged by scarring. In this situation, a liver transplant is the only option. This is a major procedure that involves removing your diseased liver and replacing it with a healthy donor liver.

However, you will probably have to wait a long time for a liver transplant as there are more people waiting for a transplant than there are donors.

Preventing cirrhosis

You can reduce your chances of developing cirrhosis by limiting your alcohol consumption and protecting yourself from a hepatitis infection.

Limiting your alcohol consumption

Heavy alcohol consumption is one of the most common causes of cirrhosis of the liver. One of the best ways to avoid this is to keep within recommended limits.

The recommended limits of alcohol consumption are:

men – up to 21 units of alcohol a week (3-4 units a day)

women – up to 14 units of alcohol a week (2-3 units a day)

If you have cirrhosis, you should stop drinking alcohol immediately because it speeds up the rate at which the condition progresses, regardless of the cause.

Protect yourself from hepatitis

Cirrhosis can be caused by infectious diseases, such as hepatitis B and C. Hepatitis B and C can be caught through having unprotected sex or by sharing needles in order to inject drugs.

Using a condom when having sex will help you avoid the risk of getting hepatitis, as will avoiding injecting drugs. Anyone who is at risk of getting hepatitis B, such as police officers and social care workers, can be protected by being vaccinated against the condition.

However, there is currently no vaccine for hepatitis C.

People born in areas of the world where hepatitis B and C are widespread, such as parts of South Asia and Africa, need to be screened for hepatitis, as early treatment can help prevent the onset of cirrhosis.