

# Hepatitis D and E



BRITISH  
LIVER  
TRUST

Fighting liver disease

# Hepatitis D and E

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](http://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.

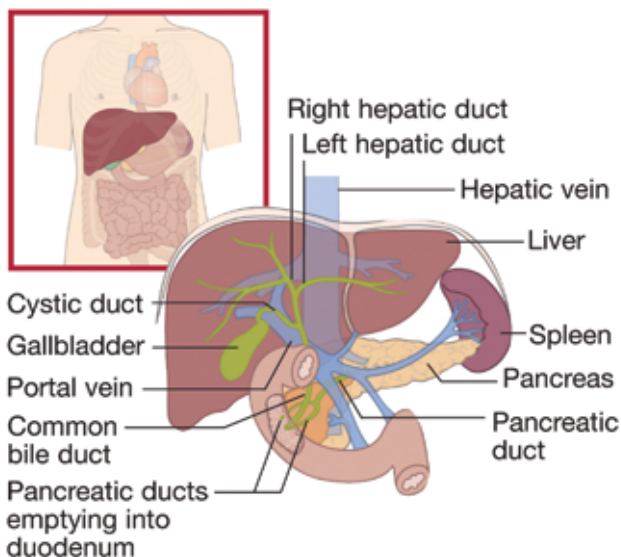
Importantly it:

- 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, 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.

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 reverse some or all of the scarring.



Cirrhosis is where inflammation and fibrosis has spread throughout the liver and disrupts the shape and function of the liver. With cirrhosis, the scarring is more widespread and can show up on an ultrasound scan. Even at this stage, people can have no signs or symptoms of liver disease. Where the working capacity of liver cells has been badly impaired and they are unable to repair or renew the liver, permanent damage occurs.

This permanent cell damage 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 affects many organs. This is known as multiple organ failure. Where many organs are affected, death is likely to follow.

## What is hepatitis?

Having hepatitis means that your liver has become inflamed. Hepatitis can be caused by a number of things including:

- drinking too much alcohol (the most common cause of liver damage)
- infection by a virus, such as hepatitis B
- the body's own immune system – a liver disease called autoimmune hepatitis
- the side effects of some drugs and chemicals.

There are a number of viruses that infect the liver. The best known are hepatitis A, B, C, D and E. The ways in which they are spread, how they cause liver damage and the effects they can have on your health, are different. Only hepatitis B, C and D cause chronic (long term) disease.

Hepatitis A, B and C are the biggest problems for people in the UK. This publication provides information for the small number of people affected by hepatitis D and E.

## What are hepatitis D and E?

Although they sit together in the hepatitis alphabet, hepatitis D and E are in fact quite different.

### **Hepatitis D**

Hepatitis D (HDV), sometimes referred to as the delta virus or delta agent, is an incomplete virus that requires the presence of the hepatitis B virus to survive in your body. This means that it is only possible to have hepatitis D if you have hepatitis B.

You can acquire hepatitis D infection at the same time you are infected with hepatitis B. This is called 'co-infection'. If you are infected in this way, acute hepatitis will develop following an incubation period of up to three months. This is the time it takes between infection and the appearance of first symptoms.

If you already have chronic hepatitis B and become infected with hepatitis D, this is known as 'superinfection'. While the combination of hepatitis D and hepatitis B can be more serious than hepatitis B by itself, superinfection is more likely to cause severe chronic hepatitis and cirrhosis.

Around 5% of people with hepatitis B also have hepatitis D.

Hepatitis D is seen mainly in central Africa, the Middle East and central South America. Infection rates in most of Europe and the United States are low.

Three particular forms of the virus, called genotypes, are currently known:

- type 1, the most common form of disease in most areas of the world
- type 2, a less severe form found more commonly in Taiwan
- type 3, a more severe form found in South America.

Hepatitis D affects approximately 15 million people worldwide.

## **Hepatitis E**

Hepatitis E (HEV) is also caused by a virus. Outbreaks have now been recorded from many areas of the world. It is most common in parts of South Asia, Africa and Central America that are associated with poor sanitation. Hepatitis E is very rare in the UK but it is now accepted that the virus is also transmitted here.

Hepatitis E has an average incubation period of four to six weeks. The disease is generally mild in its effect unless you have pre-existing liver disease and lasts only a couple of weeks. There is no chronic infection caused by hepatitis E.

It has now been classified into four genotypes:

- type 1, most commonly found in Asia and Africa
- type 2, found in Mexico
- type 3, found in USA and Europe only
- type 4, found in China, Taiwan and Japan.

In the UK, hepatitis E diagnosed in people who have travelled abroad is usually genotype 1. Overall, hepatitis E tends to affect people aged between 15 and 40 more than other groups.

Among pregnant women there is a risk of the virus causing a severe and rapidly occurring form of hepatitis that can lead to liver failure. This is called acute fulminant hepatitis and is becoming a major health concern in countries where hepatitis E more commonly occurs.

## How are hepatitis D and E spread?

Hepatitis D, like hepatitis B and C, is called a 'blood-borne virus' (BBV) indicating that it is spread by blood to blood contact. This means an infected person can pass on or 'transmit' the virus to you if their blood is able to enter your bloodstream. This can happen through an open wound, a cut or scratch or from a contaminated needle. Even dried blood can remain infectious for more than a week.

In the UK, people who share drug injecting equipment (intravenous drug users or IDUs) are most likely to be infected by hepatitis D. Having a tattoo or body-piercing or even acupuncture can also pose a small risk if unsterile equipment is used.

The virus can be transmitted from medical and dental treatment in countries where equipment is not sterilised properly. If you have a blood disorder or require blood transfusions, you may be at risk from exposure to unscreened blood products.

There are two other main ways the virus is transmitted:

- Having penetrative sex with an infected person without wearing a condom.
- From an infected mother to her baby during birth, when the baby is exposed to the mother's blood in the birth canal. This is called 'perinatal transmission'.

The hepatitis E virus is spread in a way similar to hepatitis A, known as 'faecal-oral'. This means that the virus is passed out in bowel motions (faeces) and finds its way into the mouth (orally). This can occur when you drink from a contaminated water supply or eat food that has been touched by contaminated hands.

Widespread outbreaks of the virus can occur frequently or constantly in overseas countries (referred to as 'endemic areas') where water supplies are contaminated with sewage after monsoons and flooding.

Unlike hepatitis B, C or D the hepatitis E virus is not transmitted through blood, needles, or other body fluids or through sexual contact.

## What are the symptoms of hepatitis D and E?

### Hepatitis D

The symptoms of hepatitis D are similar to flu-like symptoms seen in hepatitis B infection.

These are usually:

- fatigue and tiredness
- abdominal pain
- loss of appetite
- nausea, vomiting
- dark coloured urine
- jaundice (yellowing of the skin and whites of the eyes).

You can be infected with the virus and not notice symptoms.

### Hepatitis E

The general symptoms of hepatitis E can be:

- fatigue
- abdominal pain
- nausea, vomiting
- diarrhoea
- dark coloured urine
- pale faeces
- jaundice in some cases.

People who have the virus may be infectious for up to two weeks after their symptoms appear.

## Diagnosis

### Hepatitis D

Infection with hepatitis B and D is detected by a blood test that looks for antigens and antibodies. An antigen is a foreign or invading protein substance that enters the body. Your immune system defends against antigens by producing its own special proteins that bind to these invaders to destroy them. These are called antibodies, also known as immunoglobulin.

The antibody and antigen test can have several results, each of which provides different information about the nature of your infection. It can indicate whether you have a new infection, whether it is likely to go away by itself or to become chronic.

Doctors will also carry out a number of separate examinations that look at different properties of your blood. These are known as liver function tests (LFTs) and are used to find out how much your liver is inflamed or damaged in its ability to function properly.

A liver biopsy may also be needed to determine the extent of any scarring (fibrosis) or cirrhosis in your liver. In this procedure a fine hollow needle is passed through the skin into the liver so that a tiny sample of tissue can be withdrawn and taken away for study under a microscope.

This is usually done under local anaesthetic and may mean an overnight stay in hospital, although some people may be allowed home later the same day.

## **Hepatitis E**

Symptoms of hepatitis E are non-specific, meaning they can be caused by a range of conditions. Initially medical staff may have to rule out other forms of hepatitis, although if you have travelled to areas where hepatitis E is common or where there has been a recent epidemic, suspicion of hepatitis E will be raised. The blood test for antibodies should distinguish your infection from hepatitis A or B.

Pregnant women diagnosed with hepatitis E are advised to see a specialist urgently.

## Prevention

There is no specific vaccine for hepatitis D. Vaccination against hepatitis B will prevent hepatitis D infection although it cannot prevent superinfection. This means that if you already have hepatitis B you cannot prevent infection with hepatitis D.

If you suspect or know you have an infection you must reduce the risk of infecting others. It is important that you:

- clean and cover your cuts, scratches and open wounds with a waterproof plaster
- clean up blood from floors and work surfaces with undiluted household bleach
- do not use anyone else's toothbrush, razor, scissors or other personal items
- ensure drug injecting equipment is sterile and do not share it
- practice safer sex by using a condom in all circumstances.

Do not donate blood or semen or register as an organ donor.

There is also no current vaccine for hepatitis E. Because of this it is sensible to take precautions when you travel to endemic areas or areas where the virus is known to occur.

You are advised to avoid:

- drinking tap water
- having ice cubes in your drinks
- drinking unpasteurised milk
- eating uncooked shellfish
- eating unpeeled fruit and uncooked vegetables that have not been prepared by you.

Always wash your hands properly after using the bathroom and before preparing and eating food.

## Treatment

### Hepatitis D

Medication with a drug called interferon alpha is used to treat patients with chronic hepatitis B who also have hepatitis D.

Interferon is similar to interferon that your body's immune system produces to fight infection. It is used to boost your immune system to help prevent the virus from growing and causing more liver damage.

Interferon alpha is given by injection three times a week. Another type of interferon now commonly used is 'pegylated' interferon. This is a slow release version of the drug that remains in your body for longer than conventional interferon and requires only a single weekly injection.

The minimum period for treatment with interferon alpha or pegylated interferon is twelve months.

For more detailed information on the treatment of this virus it is useful to refer to our publication on hepatitis B.

### Hepatitis E

There is no specific treatment for hepatitis E. It is regarded as a self-limiting disease, meaning that it runs a defined or limited course. Most people who have hepatitis E will go on to recover completely.

## Looking after yourself

### **Diet and exercise**

If you have hepatitis D or E you do not have to follow a special diet. Just like anybody else, you should eat a balanced diet. This means eating regular meals, including plenty of fruit and vegetables and avoiding fatty and sugary foods.

Many people with chronic disease experience fatigue and lack of energy. People who have hepatitis E often feel tired and need more rest than usual.

To keep up stamina, most people need two portions of food a day which provide a good source of protein, such as meat, poultry, fish, eggs, nuts, pulses, beans, cheese, milk and milk products.

If you have a chronic form of hepatitis it is important that you know your limits and plan your activities carefully. Make sure you leave adequate time for relaxation and recovery between both normal and more strenuous activities.

### **Alcohol**

Avoid alcohol altogether if you can, particularly if you have a chronic infection. Drinking alcohol will speed up damage to your liver. Even with a milder infection such as hepatitis E, it is worth approaching alcohol with caution.

If you cannot manage staying away, drink as little as possible and not more than the recommended amount of alcohol (21 units per week for men and 14 for women).

But remember that these guidelines are for people without a liver condition.

## 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.

**Antibody** – a type of immunoglobulin (protein) produced by your body's immune system as part of a defence reaction against an invading substance (antigen).

**Antigen** – an invading substance that may be part of a virus. Your body's immune system will defend against the antigen by producing antibodies.

**Autoimmune disease** – a type of disease where the immune system mistakenly attacks another part of the body.

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

**Co-infection** – being infected with more than one virus at the same time.

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

**Vaccination** – injection with a vaccine. A vaccine is a substance containing an inactivated (very weakened or dead) form of the virus that cannot cause disease. It is introduced into your body to cause an immune reaction to protect you against getting the virus.

**Virus** – a microscopic particle that infects living cells by getting inside them and replicating. Viruses cannot reproduce by themselves and can only multiply from within the cells of their living host.

## Who else can help?

### **The National Travel Health Network and Centre (NaTHNaC)**

[www.nathnac.org](http://www.nathnac.org)

A centre funded by the Department of Health to promote clinical standards in travel medicine. The NaTHNaC website provides general health information for people travelling overseas. Advice covers infectious and non-infectious health risks, where they are found, and links to other resources to help you plan your travel.

## 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*
- *Cirrhosis and liver disease*
- *Diet and liver disease*
- *Hepatitis A*
- *Hepatitis B*
- *Hepatitis C*
- *Liver cancer*
- *Liver disease tests explained*
- *Liver transplantation*

## Special thanks

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## 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:

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info@britishlivertrust.org.uk**

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