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# HEPATITIS B



# THE LIVER

The liver is the largest of the body's organs. It lies in the upper right side of the abdomen, with most of it protected by the ribs. It weighs about 3 pounds (1.5 kilogrammes).

## THE FUNCTIONS OF THE LIVER

The liver has approximately 100 functions, including:

- the production of essential substances such as glucose and proteins for the rest of the body
- the production of important factors to help the blood clot
- the removal of toxic substances from the blood
- the breakdown of fats and other substances

## THE RESULTS OF LIVER DYSFUNCTION

If the liver is not working properly, this may not be apparent at first. The liver is a very uncomplaining organ. However, signs of poor liver function include:

- jaundice (yellowing of the skin) if pigments are not properly cleared from the blood
- swelling of the ankles or the abdomen if insufficient proteins are being made
- prolonged bleeding if insufficient clotting factors are being made

There are no "liver machines" like artificial kidneys. If the liver fails completely or becomes very seriously damaged the only solution is a liver transplant.

# WHAT IS HEPATITIS?

Hepatitis literally means inflammation of the liver. Viruses are the commonest cause of hepatitis but drugs, disturbances of the body's immune (defence) system and alcohol excess can also give rise to this condition. Since the 1960s many different hepatitis viruses have been identified - A,B,C,D,E and recently several others. Our knowledge of the viruses, their prevalence and their responses to treatment is increasing rapidly, and effective, safe vaccines are available to prevent infection from hepatitis A and B. The different hepatitis viruses can cause a similar acute illness but there are differences in possible long term effects. Furthermore, there are major differences in the way they are spread. Hepatitis is described as either acute or chronic. An acute illness is one that lasts a relatively short time and may be severe in its effects (a 'short, sharp' illness). A chronic illness is one that persists over a long period of time, sometimes coming and going.

## WHAT IS HEPATITIS B?

Hepatitis B is inflammation of the liver caused by the hepatitis B virus (HBV). If you are infected with this virus, you may have a short (acute) illness or even no obvious illness at all. At its most serious, acute hepatitis B can lead to fulminant (rapid) liver failure which can be fatal and may need a life-saving liver transplant. Fortunately, this is rare.

A minority of people infected with the virus will continue to carry it in their bodies for many years and remain infectious to other people. This does not necessarily mean that they have hepatitis - they may be so-called healthy carriers. On the other hand, about 10% of infected people will develop chronic hepatitis. Over time the continuing inflammation and the damage this causes can lead to cirrhosis<sup>1</sup>. A minority of these people go on to develop liver cancer. People with cirrhosis need careful screening to detect any cancer early.

Please note: The numbers in the text refer to the glossary which can be found at the end of this leaflet.

## ■ HOW IS HEPATITIS B SPREAD?

Hepatitis B is spread by a variety of routes:

- it can be passed from mother to baby (vertical transmission) if the mother is a carrier<sup>2</sup> of the virus.
- it can be caught by coming into contact with the body fluids of a carrier<sup>2</sup> - blood, saliva, urine or semen.
- contaminated needles - shared injection needles used by intravenous drug users spread the virus. A small scratch with a contaminated needle or blade can transmit the disease.
- all blood donated in the UK is now screened for hepatitis B, but it was previously possible to become infected this way by receiving blood from an infected donor. A blood transfusion received abroad may be a route of transmission.

## ■ CAN THE RISK OF TRANSMISSION BE REDUCED?

The risk of spreading the virus to others can be reduced by bearing in mind that the virus can be transmitted through blood, urine, saliva and semen. Carriers<sup>2</sup> of the virus should ask their doctor how infectious they are (see HOW INFECTIOUS IS IT?). They should:

- not have unprotected sex (a condom should be used). Partners should be vaccinated if in a stable relationship.
- not play contact sports without letting someone know they are a carrier<sup>2</sup>, in case of injury. They should not continue to play with a cut.
- clean up spilt blood with household bleach if they cut themselves and cover the wound with a sticking plaster. It is only necessary to use hot water and ordinary washing up liquid on cutlery and plates if they have come into contact with a carrier's<sup>2</sup> saliva.



- not donate blood or carry a donor card.
- not share any injecting equipment.

If a woman is pregnant she should remind the doctor prior to the birth or whilst in labour in the case of an emergency admission. The baby should be vaccinated as soon as possible after birth - within a few hours. Babies of mothers who are highly infectious at the time of birth will normally need hepatitis B immunoglobulin<sup>3</sup> in addition to the vaccine. If a carrier's<sup>2</sup> baby is correctly vaccinated it is almost impossible for the infant to become a chronic carrier<sup>2</sup> of hepatitis B.

**If you think you may have become infected you should see a doctor as soon as possible - within a few hours. Not very much can be done to prevent the transmission of the virus after a few days.**

Your doctor will take a blood test. You could already have hepatitis B antibodies without knowing it in which case you will not need vaccination. If you do need it your doctor will then give you an injection of the first dose of the hepatitis vaccine and hepatitis B immunoglobulin<sup>3</sup>. This will be followed by a course of injections at one month and 2 months, with a booster at 12 months. This is an accelerated vaccine schedule to speed up the immunisation process. Immunoglobulin<sup>3</sup> is only given to people who have recently been exposed to the virus when there is not enough time to wait for the vaccine to take effect.

**If this is done correctly and in time it will certainly prevent the transmission of the virus.**

## **■ HOW COMMON IS HEPATITIS B?**

It is very common in some parts of the world, especially Asia, the Middle and Far East and Africa. Some specialists think that up to 1 in 1,000 people in the

UK may be affected. It has been reported that 1 in 100 pregnant women in certain inner-city areas are hepatitis B carriers. Some people with hepatitis B also have another virus called the delta virus or hepatitis D.

#### ■ WHAT ARE THE SYMPTOMS?

There is an incubation period<sup>4</sup> of 6-23 weeks. Many people have no symptoms although they can still pass the virus on. Others experience 'flu-like' symptoms, including a cough, sore throat, tiredness and loss of appetite. They may also have fever, nausea, vomiting, abdominal pain and jaundice (yellow discoloration of the skin and eyes) with a change in the colour of their urine and stools (the urine become dark and the stools pale).

#### ■ HOW INFECTIOUS IS IT?

Hepatitis B can be highly infectious, much more so than HIV. There are three different grades of infectiousness and these can be determined by a blood test:

**Highly infectious** - you could transmit the virus by unprotected sex or sharing a toothbrush or razor.

**Mildly infectious** - you are very unlikely to transmit the virus by any of the above methods.

**Not infectious** - your antibody levels show that you have had hepatitis B but that you have made a complete recovery and cannot pass the disease on to anybody else.

#### ■ IS THERE A TREATMENT FOR HEPATITIS B?

Most people who suffer an acute attack make a complete recovery without treatment. However, treatment may be necessary for patients in whom the virus persists for more than 6 months. These people should have the state of their liver assessed over the years by a hepatologist (liver specialist) or gastroenterologist (a specialist in digestive diseases).

The results of this regular monitoring will determine how often the person needs to be seen and whether treatment is necessary.

Those that need treatment receive a drug called interferon alpha which is given by injection just under the skin, usually three times a week for between 2-6 months. Most people find it easy to administer the injections themselves and will be shown how to do this by the doctor or nurse - the technique is the same as that for diabetes. It is not painful to do and the injections soon become routine.

In approximately half of the people treated with interferon the hepatitis will be converted from highly infectious to mildly infectious and liver inflammation will improve. If cirrhosis<sup>1</sup> has already developed it cannot go away. People born with the virus because their mother was a carrier<sup>2</sup> tend to respond less well to interferon treatment. It is sometimes recommended to prevent the development of cirrhosis<sup>1</sup> or to prevent transmitting the disease to others.

In the early stages of treatment you could experience 'flu-like' symptoms such as nausea, sweats, tiredness and muscle aching. The severity of the symptoms varies between people and is often helped by taking the injections at bed time along with 2 paracetamol tablets. These symptoms usually go away after 1-2 weeks as the body gets used to the interferon. Other treatments are being tried out and your specialist will be able to tell you about them.

## CAN HEPATITIS B BE PREVENTED?

### Vaccination

There is a very safe vaccine to protect against the virus. Three doses are given to ensure full protection. The initial injection is followed by further injections at 1 month and 6 months. Protection is not complete until after the third injection. After approximately

2-3 months a further blood sample is taken to check your antibody levels to confirm immunity. Antibody levels should be rechecked every year and another dose of the vaccine given if they are low. Your doctor can check this.

### **Family and friends**

It is a good idea to have all members of a household vaccinated. A spouse or partner should be vaccinated especially if unprotected sex is practised. Family friends and occasional visitors do not need vaccination although it is a good idea to keep a watch on children playing together.

Most medical and nursing personnel whose work involves contact with blood or other body fluids have already been vaccinated.

### **WHAT IS CIRRHOSIS?**

If hepatitis continues for a long time the liver may develop cirrhosis<sup>1</sup>. Blood is unable to flow freely through the liver and instead is diverted around it.

Some people develop ascites<sup>5</sup>. This is because the blood cannot flow freely through the liver and does not contain enough protein. The condition usually improves if salt is excluded from the diet and a drug (diuretic) is sometimes prescribed by your doctor. Some people, who have severe ascites, may need some of the fluid drained off. This will be carried out by a doctor usually in hospital.

Some people may develop varices<sup>6</sup>. These can cause bleeding from the gullet (oesophagus) and stomach because the diverted blood is under extra pressure and the blood vessels sometimes burst. A lack of clotting factors which are normally produced in the liver can make the problem worse.

Cirrhosis<sup>1</sup> cannot be treated or cured, only its development stopped. Any cirrhosis<sup>1</sup> caused as a result of hepatitis will remain even if the hepatitis gets better. However, some



people with cirrhosis<sup>1</sup> lead a normal life and others may need to have a liver transplant.

Liver cancer can develop in people with cirrhosis<sup>1</sup>. It is important that the condition of your liver is checked regularly by a specialist who will arrange for scans and blood tests to diagnose and treat the condition as soon as possible.

## GLOSSARY

### 1 Cirrhosis

Scarring of the liver together with damage and attempted repair

### 2 Carrier

Someone with the virus in their body

### 3 Immunoglobulin

A protein rich in antibodies which act against the virus

### 4 Incubation period

The time between becoming infected and the beginning of the illness

### 5 Ascites (pronounced a-site-eez)

Swelling of the abdomen with fluid

### 6 Varices (pronounced va-ree-sees)

Enlarged blood vessels around the gullet (oesophagus) and stomach

This British Liver Trust is the only national charity in this country dedicated to fighting all adult liver diseases through research, education and patient support.

Experts estimate that more than half of all liver diseases could be prevented if people acted upon the knowledge we already have.

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**FINDING CURES AND BETTER  
TREATMENTS FOR LIVER DISEASES**

\*Our sister charity, the Children's Liver Disease  
Foundation deals with all aspects of paediatric liver  
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