

facts about...

HEPATITIS B

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What is HEPATITIS B?

Hepatitis is inflammation of the liver. It has a number of different causes, but the most common is damage by a virus. Hepatitis B is one of the viruses which can damage the liver. Others include the hepatitis A, C, D and E viruses, and sometimes the Epstein-Barr (glandular fever) virus and cytomegalovirus (CMV).

How does Hepatitis B virus damage the liver?

The hepatitis B virus (or HBV) multiplies in the liver cells. The body then tries to get rid of the hepatitis B by killing the infected cells. Ironically, it is the self-defence, or immune response which does the most damage to the liver.

How is Hepatitis B spread?

Hepatitis B is spread by contact with blood and other bodily fluids, usually through a breach in the skin or contact with internal lining surfaces of the body. The various ways people can acquire hepatitis B include:

1. From an infected mother to her baby at around the time of birth. This is the most common way for the virus to spread in some parts of the world.
2. By use of injecting drugs (at any time in the past or present).
3. By sexual contact. (either heterosexual or homosexual).
4. By blood transfusion. This is fortunately extremely rare these days, as blood in

Australia is tested for hepatitis B before it is transfused.

5. By tattooing with unsterilised needles and equipment.
6. By close family contact.
7. By accidental inoculation (ie. needlestick) or splashing with infected blood or secretions (eg. some groups or health care workers).

What damage can Hepatitis B do?

TELL ME MORE ABOUT VACCINATION?
the hepatitis B vaccine is very safe and relatively inexpensive. It is also very effective and gives good immunity in 95% or more of the population..

The outcome of hepatitis B infection depends largely on the age at which it is contracted. Babies, who are infected with the hepatitis B virus at birth, almost always go on to have long-term ("chronic") infection. However such babies appear healthy and do not become jaundiced (turn yellow) or unwell. It is usual to stay perfectly healthy for many years, but after at adults the age of 20, 30, 40 or 50 years, people with chronic hepatitis B can become unwell at any age. People with chronic hepatitis B who acquire their infection early in life have an overall chance of approximately 25% chance of developing cirrhosis (scarring of the liver) or even liver cancer during their lifetime. There is also an increased risk of developing



liver cancer later in life. If a teenager or adult becomes infected with the hepatitis B virus there is about a 50% chance that they will become ill and develop jaundice (or turn yellow). This illness is called acute hepatitis. However, in the other 50% of cases, there is no illness or jaundice and the infection is silent (or "subclinical"). Newly infected adults have a good chance (approximately 95%) of being able to get rid of, or 'clear' the virus, from the body. Individuals who have been infected and clear the virus are immune to the disease (cannot be re-infected) and do not develop long-term liver damage.

Approximately 5% of adults are unable to clear the virus and develop chronic hepatitis B. Generally such people remain in good health for many years. However, there is an increased chance of developing cirrhosis (scarring of the liver) or liver cancer over many years or decades.

How can the doctor tell if you are infected with HBV and whether you have any liver damage?

There are many tests, which assist doctors in assessing liver damage, or likelihood of future liver damage from hepatitis B. The interpretation of these tests is not always straightforward, and sometimes specialist advice is needed. Some of the more important tests are:

- **Hepatitis B surface antigen:** This is the test to see whether or not you are infected with the hepatitis B virus.
- **Hepatitis B e antigen:** This blood tests tell the doctor whether or not the virus is continuing to multiply in the liver. People who have HB e antigen are more infectious to others than those who don't. They are also at greater risk of continued liver damage.
- **Hepatitis B virus DNA:** This is another test for activity or replication rate of the virus. The level of hepatitis B virus DNA in the bloodstream has important implications for an infected person's outcome (the likelihood of scarring of the liver and liver cancer).
- **Hepatitis B surface antibody:** This blood test is positive if someone has had hepatitis B, cleared the virus, and is now immune. People who have had successful hepatitis B vaccination also usually have a positive hepatitis B surface antibody, indicating that they are immune.
- **Liver function tests:** Blood tests which give an estimate of liver inflammation or damage. The "ALT" or (alanine amino transferase) test is a reasonably good indicator of liver damage. Other liver function tests can help the doctor assess whether or not there may be cirrhosis.
- **Liver ultrasound or scan:** These tests use inaudible sound waves (sonar) to give the doctor pictures of the liver and can assist in diagnosing cirrhosis or liver cancer.

- **Liver biopsy:** This is the removal of a tiny piece of liver under local anaesthetic using a special needle passed through the skin, and is used on occasions to assess damage in the liver.
- **Alpha-fetoprotein:** Is a blood test which can sometimes detect liver cancer.



Is there any treatment?

Those people who have immunity and normal liver functions tests do not need any treatment. People who have chronic hepatitis B but no evidence of liver damage do not require treatment. However if there is liver damage, the doctor may consider using an anti-viral medicine.

There are several types of anti-viral medications available in Australia for treating hepatitis B virus infection. They include lamivudine, adefovir, entecavir (all given as tablets) and pegylated interferon (given as a weekly injection for 12 months). These drugs have different benefits and side effects, and therefore the type of treatment should be tailored individually to each patient. You should discuss these treatments with your liver specialist. Sometimes long-term treatment with such drugs can result in the hepatitis B virus becoming resistant to the medication. A modification to your treatment regimen may be required in such cases.

What else can be done to improve the liver?

People with chronic HBV should eat a normal healthy diet. Unless your doctor suggests otherwise, alcohol should be minimised to no more than one standard drink of alcohol per day. People should avoid behaviour associated with contracting other blood-borne viruses. (eg. they should practice safer sex and should not share injecting equipment) **as well as preventing the spread of hepatitis B virus (see 'How to stop the spread of hepatitis B' section below).**

Do people with Hepatitis B need to stay under medical supervision?

People **who have chronic hepatitis B infection**, but are thought to have very little or no damage to their liver (ie. are HBe antigen and HBV-DNA negative), **and have normal physical examination and normal ALT level, should still see their doctor or specialist annually for a check-up. There is a small chance of ongoing liver damage in these people and a risk of developing severe scarring of liver and/or liver cancer.**

People who are Hepatitis B e antigen positive or thought to have liver damage from hepatitis B should see their doctor regularly. Often the doctor will recommend a physical examination and ALT level every 3-6 months. People who already have cirrhosis of the liver should be kept under close medical supervision. Six monthly ultrasound examinations and alpha-fetoprotein levels are usually recommended to screen for development or pick up early signs of liver cancer. People with very advanced liver disease, or those in whom a small liver cancer is detected, may be referred to a liver transplant unit for discussion about liver transplantation. Hepatitis B and Cancer Chemotherapy Cancer chemotherapy can lead to a severe flare of hepatitis activity in anyone who has chronic hepatitis B. You should always mention that you have been diagnosed with hepatitis B to any doctor planning to give you chemotherapy or

other strong medicine that could suppress the immune system. It is extremely important to seek advice from a liver specialist before starting on these forms of treatment. If antiviral medication is started around the time of starting chemotherapy, then potentially dangerous flares of hepatitis can be prevented.

How can we stop the spread of Hepatitis B?

The most important step in preventing spread of hepatitis B is to arrange for all susceptible close contacts (ie. family members, sexual contacts) to be vaccinated against hepatitis B (see below). People with hepatitis B should also follow the guidelines shown below.

- Do not donate blood, organs or any body tissue.
- Do not allow your blood to contact anyone else's blood.
- Tell health care workers (including dentists) who are responsible for your care that you are hepatitis B positive.
- Make sure anyone living in the same house as you and who is not already immune, is vaccinated against hepatitis B - this requires a course of 3 injections over 6 months.
- Your children should be vaccinated.
- All babies are now vaccinated from birth with a paediatric dose of hepatitis B vaccine. In addition, babies born to mothers with hepatitis B also receive a dose of hepatitis B immunoglobulin shortly after birth. This protects them until they start to make their own antibodies against hepatitis B.
- Regular sexual partners should be vaccinated. Until they have completed the course of injections, and a follow up blood test shows they are immune, you should practise safe sex.
- For casual sexual contacts, you should practise safe sex. This means condoms for all intercourse, and avoidance of trauma or blood contact.

- Cover all cuts etc, with adequate dressings. Do not allow other people to touch your wounds without gloves on.
- Dispose of blood-stained articles safely
- Wipe up blood spills with concentrated household bleach.
- Do not share needles or any other injecting drug equipment.
- If your job involves potential for blood or other body fluid spread to other people (eg. if you are a health care worker involved in invasive procedures), you should consider your responsibilities and discuss other career options with a counsellor or your doctor.

Tell me more about vaccination?

The hepatitis B vaccine is very safe and relatively inexpensive. It is also very effective and gives good immunity in 95% or more of the population. People over 40 years of age are less likely to develop good immunity. The vaccine is usually given in three injections over six months. People at high risk of contracting hepatitis B need a blood test one month after the last dose to see whether or not they are immune.

Should everyone be vaccinated against Hepatitis B?

In Australia, a universal hepatitis B vaccination program provides hepatitis B vaccination free of charge to all infants and adolescents. Anyone who is at risk of contracting hepatitis B can arrange for hepatitis B vaccination through their employer (for health care workers and others), their general practitioner or sexual health centre. It is strongly recommended that the following groups of people be vaccinated against hepatitis B:

- All babies and adolescents who have not had hepatitis B vaccination previously.
- Babies of infected mothers (all pregnant women SHOULD be tested for hepatitis B).
- People who have had accidental exposure

(eg. at work). (A non-immunised person who is exposed to hepatitis B should also receive an injection of hepatitis B immunoglobulin).

- Health care workers.
- Emergency services workers.
- Household, family or sexual contacts of carriers.
- Men who have sex with men.
- Sex industry workers.
- Injecting drug users.
- Renal dialysis patients.
- Clients and staff of institutions for the intellectually disabled and those in close contact with the de-institutionalised.
- Aborigines and Torres Strait Islanders.
- Haemophiliacs and others who can expect to receive multiple blood or blood product transfusions, especially if these are given overseas.
- Prisoners and prison staff.
- International travellers.
- People playing contact sport.
- Child care workers, staff of school.
- People with other forms of liver disease.
- Embalmers.

Note: All pregnant women should be tested for hepatitis B so that their babies can be vaccinated against hepatitis B if the mother is a carrier.

Further Questions ?

This leaflet cannot be completely comprehensive, and is intended as a guide only. The information is current at the time of printing, but may change in the future. If you have further questions you should raise them with your own doctor. There are also Digestive Health Foundation brochures available on hepatitis A and hepatitis C.

This information booklet has been designed by the Digestive Health Foundation as an aid to people who have Hepatitis B or for those who wish to know more about it. This is not meant to replace personal advice from your medical practitioner.

The Digestive Health Foundation (DHF) is an educational body committed to promoting better health for all Australians by promoting education and community health programs related to the digestive system.

The DHF is the educational arm of the Gastroenterological Society of Australia, the professional body representing the Specialty of gastrointestinal and liver disease in Australia. Members of the Society are drawn from physicians, surgeons, scientists and other medical specialties with an interest in GI disorders.

Since its establishment in 1990 the DHF has been involved in the development of programs to improve community awareness and the understanding of digestive diseases.

Research and education into gastrointestinal disease are essential to contain the effects of these disorders on all Australians.

Further information on a wide variety of gastrointestinal conditions is available on our website.



Digestive Health
Foundation
c/-GESA
145 Macquarie Street
SYDNEY NSW 2000
Australia

Phone (02) 9256 5454
Fax (02) 9241 4586
dhf@gesa.org.au
<http://www.gesa.org.au>

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If you have further questions you should raise them with your own doctor.

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