Hepatitis B

What is hepatitis B?

Hepatitis B is a type of liver disease caused by the hepatitis B virus, and is one of the most common forms of viral hepatitis (the others are hepatitis A and hepatitis C). Many people who become infected with hepatitis B never feel sick and recover completely. Others get a brief, acute illness with fatigue and loss of appetite, and their skin and eyes turn yellow (a condition called "jaundice"). Fewer than 5% of adults who get acute hepatitis B develop chronic hepatitis and about 1% of adults get acute liver failure. However, up to 90% of infants and children infected with hepatitis B are unable to clear the infection and become chronically infected. Chronic infection can lead to cirrhosis (severe scarring of the liver) and/or liver cancer later in life.

What is chronic hepatitis B?

Anyone who is unable to clear the virus after six months of initial infection has chronic hepatitis B. The risk is greatest for infants born to mothers who have hepatitis B: infants infected with the virus at birth, who do not receive hepatitis B immune globulin (HBIg) and vaccination, have a 90% chance of developing chronic hepatitis B infection. Although most people with chronic hepatitis B will have inactive disease and will remain healthy and symptom-free, some will have active disease that may lead to cirrhosis or liver cancer years after becoming infected with the hepatitis B virus.

How is the hepatitis B virus spread?

A person who has acute or chronic hepatitis B can spread the infection to other people through his/her blood and other body fluids or by sexual contact. Hepatitis B is not spread by water, food, or by casual contacts.

Who is at risk of getting hepatitis B?

Without immunization, many people are at risk of infection:

- Sexual partners of those who have hepatitis B.
- People who have multiple sexual partners.
- Babies born to mothers who have hepatitis B.
- Children and other household members of someone with hepatitis B.
- People who use injection drugs.
- Anyone whose occupation involves increased exposure to blood and bodily fluids (e.g. health care workers, law enforcement officers, firefighters).
- People who live or travel to parts of the world where hepatitis B is relatively more common such as Asia, sub-Saharan Africa, southern and eastern Europe, and the Pacific Islands.

How is hepatitis B diagnosed?

Diagnosis is made through blood tests. The tests may show the following results:

- A positive *hepatitis B surface antibody test* (anti-HBs) indicates that you have been infected some time in the past and recovered completely or that you have been successfully immunized against hepatitis B infection. You are immune to the hepatitis B virus. You will not get hepatitis B infection and you cannot infect anyone. There are several hepatitis B antibodies, but only anti-HBs gives immunity.

- A positive *hepatitis B surface antigen test* (HBsAg) shows that you are still carrying the hepatitis B virus. Presence of the virus can mean either acute (recent, self-limited) or chronic (long-lasting) infection. If the virus continues to show up in your blood for longer than six months, then you have a chronic infection.

- A positive *hepatitis B core antibody* test (anti-HBc), in the absence of other markers of infectivity, means a resolved past infection. This test is used by the Canadian Blood Services to screen all blood donors.

- A *completely negative result* (anti-HBs, HBsAg, anti-HBc all negative) means that you have never been exposed to the hepatitis B virus nor been immunized. In that case you can benefit from immunization.

Is hepatitis B a preventable disease?

Yes! Hepatitis B can be prevented by:

- Immunization with a hepatitis B vaccine. Two to three injections of this vaccine within a six month period provide long-lasting protection against hepatitis B in the majority of people.

- Adopting safer sex practices.

- Administering HBIg to anyone who has had recent exposure (seven to 14 days) with infected blood or body fluids.

- Screening all pregnant women and administering HBIg and vaccine at birth to babies born to mothers who have hepatitis B.

Is there treatment for hepatitis B?

The objective of treatment of chronic hepatitis B is to prevent the development of cirrhosis, liver failure and liver cancer. However, not all hepatitis B patients will develop these complications. The challenge is to identify those patients whose liver disease may progress to cirrhosis and offer them treatment. There are two types of treatment available: (i) injections called standard interferon alpha-2b and pegylated interferon alpha-2a, and (ii) oral antiviral medications which include adefovir, entecavir, lamivudine, telbivudine and tenofovir.

Interferon-alpha is a natural product of the human body, known to interfere with the reproduction of a virus after infection. For treating chronic hepatitis B, interferon alpha works by enhancing the body's immune activity against the hepatitis B virus. It is only effective once the immune system has become activated against the hepatitis B virus. Standard interferon alpha-2b is given by injection three times per week for up to 48 weeks. Pegylated interferon alpha-2a which is a long-acting form of interferon is injected once weekly for up to 48 weeks.

Adefovir, entecavir, lamivudine, telbivudine and tenofovir work directly against the hepatitis B virus by suppressing the virus from multiplying. These drugs are taken by mouth once a day and are generally well tolerated with almost no side effects. The duration of treatment with these drugs depends on the exact type of hepatitis B virus and the response of the patients. In some cases, indefinite therapy is necessary. However, the main problem with oral antiviral therapy is the development of drug resistance. When drug resistance occurs, the medication will no longer be effective in suppressing the virus. If resistance to one oral antiviral medication develops, a combination of two antiviral medications is usually required.

I have hepatitis B. What should I do to prevent passing the virus on to others?

- Practise safer sex: use condoms! Encourage your sex partner(s) and all people you live with to get hepatitis B testing. If they have not already been infected, they should receive hepatitis B vaccine for protection.

- If you are pregnant, or planning to have children, there is a high risk of passing the virus on to your baby around the time of birth. However, the baby can be protected through immunization. At birth, your baby will receive HBIg and the first of three doses of the hepatitis B vaccine. The second dose is given when the baby is one month-old and the third at six months-old: this gives your baby a 95% chance of not being infected with hepatitis B. Although hepatitis B screening is part of the prenatal testing in some provinces, be sure to discuss this matter with your health care provider.

- Tell your doctor, dentist and other health care providers so that they can take necessary precautions.

- Never share your toothbrush, razor, nail file or other personal items that might contain traces of blood.

- Never donate blood or semen.

- Get rid of articles contaminated with your blood (e.g. tampons, dental floss, bandages, needles, broken glass) by placing them in a protective container.

- Cover all cuts and sores with band aids.

- Clean up spills of your blood with freshly diluted household bleach (one part bleach, nine parts water) and let it stand for 10 minutes before wiping it away. The bleach will kill any hepatitis B virus left on the surface.

Do I need a special diet?

There is no need to follow a special diet as long as you eat healthy, nutritious food as outlined by Health Canada in *Eating Well with Canada's Food Guide*. Alcohol can also damage your liver so avoid alcohol consumption if you have active disease.

Reviewed 2015