



X-Plain *Hepatitis B*

Reference Summary

Introduction

Hepatitis B is the most common serious liver infection. It is caused by the hepatitis B virus that attacks the liver.

The virus is transmitted through blood and infected bodily fluids. This can occur through

- direct blood-to-blood contact,
- unprotected sex,
- use of un-sterile needles, and
- from an infected woman to her newborn during the delivery process.



An adult usually fights off the virus but if the body cannot fight it, chronic hepatitis B develops. Chronic hepatitis B can lead to cirrhosis or liver cancer, which can stop the liver from working properly. A person will die if his or her liver does not function.

Of the 12 million Americans who have been infected with hepatitis B, more than 1 million have chronic hepatitis B. About 100,000 people become infected with hepatitis B each year. Five thousand Americans die each year from chronic hepatitis B and its complications.

This reference summary explains what hepatitis B is. It discusses its causes, symptoms, diagnosis, treatment and prevention.

Hepatitis B

When a person is first infected with the hepatitis B virus, this is called an "acute infection." Most adults will fight off the virus, and recover without any problems.

If the virus remains in the blood for more than six months, a person is then diagnosed as having a "chronic infection," or "chronic hepatitis B."

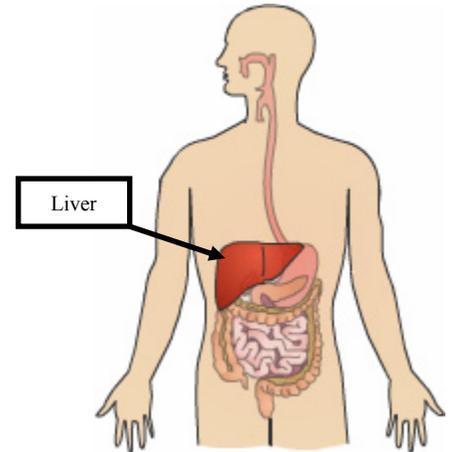
Fortunately, 90% of healthy adults will recover and develop antibodies against the hepatitis B virus. Unfortunately, this is not true for babies and young children. About 90% of babies and 50% of young children are unable to get rid of the virus.

This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

People who recover from an acute hepatitis B infection will develop protective antibodies. After fighting the virus once, the body knows how to protect a person from getting a hepatitis B infection again. They become “immune” to the hepatitis B virus.

For those who do not get rid of the virus after 6 months of infection, this means the virus may stay in the liver and blood for a lifetime. These people are diagnosed as having chronic hepatitis B.

Although most people with chronic hepatitis B have long, healthy lives, they do have a greater risk of developing serious liver disease later in life. The virus can quietly and continuously attack the liver over many years without being detected.



The liver is a very important organ in the body. It helps digest food, absorb nutrients, resist infections, remove waste and poison from the body, and make proteins that help the blood clot. Without a functioning liver, a person will die within 1 to 2 days.

In the liver, a chronic hepatitis B infection can lead to cirrhosis. Cirrhosis is a condition where the cells of the liver are scarred by tissue fibers. This causes the liver to become less effective. With severe cirrhosis, the liver stops working. This is known as liver failure.

A chronic hepatitis B infection can also lead to liver cancer over time. Regular evaluation by a physician (for example, a liver specialist), seeking treatment if appropriate, and maintaining a healthy lifestyle can help slow down possible liver damage from the hepatitis B virus.

Symptoms

Most people do not have symptoms during the acute hepatitis B infection stage. Any common symptoms that might show up are usually flu-like.

Some have flu-like symptoms including fever, fatigue, muscle or joint pain, loss of appetite, mild nausea and vomiting.



This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

Only 1% of infected people have severe symptoms while their body is trying to fight off the virus. Severe symptoms include nausea and vomiting, yellow eyes and skin called “jaundice”, and a bloated or swollen stomach. This condition, which can develop suddenly, is life threatening and requires immediate medical attention.

Hepatitis B is often called the “silent infection” because most people do not know they have been infected. People with chronic hepatitis B can live for decades without having any symptoms. Even though they have no symptoms, the hepatitis B virus can be silently damaging the liver for years. This is why it is important for all people to know if they have been infected with hepatitis B.

If you don’t feel well or think you have been exposed to hepatitis B, check with your doctor. A simple blood test will show whether you have been infected or not.

Transmission

A person can transmit hepatitis B to another through blood and infected bodily fluids.

This can happen in the following ways:

- Direct blood-to-blood contact
- Unprotected sex
- Non-sterile needles
- An infected mother passing it to her newborn during birth



The hepatitis B virus can also be transmitted by sharing razors, toothbrushes, nail-clippers or earrings. If sterile needles are not used, it is possible to transmit hepatitis B through body piercing, tattooing, drug injection and acupuncture.

Hepatitis B is NOT transmitted casually. It cannot be spread through sneezing, coughing, hugging or eating food prepared by someone who is infected.

Everyone is at some risk of getting hepatitis B. However, there are people who have a higher risk because of their job or life choices. People whose job puts them in contact with blood include:

- Health care workers
- Emergency personnel
- Residents and staff of jails, prisons and group homes



This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

Other activities that put a person at a higher risk of becoming infected with hepatitis B virus include:

- Illicit drug users
- Men who have sex with men
- People with more than one sex partner
- Those who get tattoos or body piercings

Certain medical conditions put people at a higher risk of becoming infected with hepatitis B. These types of situations include:

- People with kidney disease or those who need kidney dialysis
- People who need blood for medical conditions such as hemophilia
- People who received a blood transfusion before 1992
- People who have already been diagnosed with a sexually transmitted disease

Being in close contact with an infected family member may raise your risk of becoming infected. Examples include:

- Babies born to infected mothers
- Living in close contact with an infected person
- Having sex with an infected partner or spouse
- Families who adopt a child from a country where hepatitis B is common

People can get infected with hepatitis B if they live, emigrate from or travel to countries where hepatitis B is common. This includes most developing countries in Asia, Africa, South America, the Pacific Islands, Eastern Europe and the Middle East.

Worldwide, 2 billion people have been infected with hepatitis B. 400 million people have become chronically infected, which means they are unable to get rid of the virus. An estimated 1 million people die each year from hepatitis B and its complications.

It is extremely rare to get hepatitis B through blood transfusion in the United States because all donated blood is tested for hepatitis B.

Remember that there is a safe and effective vaccine that will protect you and your loved ones from getting a hepatitis B infection.

Diagnosis

A simple blood test can easily diagnose a hepatitis B infection. The test looks for antigens and antibodies in your blood. If you think you were recently infected, it will be 4 to 6 weeks before the virus can be found in your blood.

This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

Antigens are substances recognized by the body's immune system. Antibodies are made by the body in order to fight antigens and foreign substances invading the body.

A blood test will show if:

- You have never been infected
- You have an acute hepatitis B infection right now
- You have recovered from a past infection and are now immune
- You have a chronic hepatitis B infection and the virus is in your blood
- You are immune to hepatitis B due to vaccination

If the test shows that you have not been infected with the hepatitis B virus, remember that you are still at risk! Get the hepatitis B vaccine.

The Hepatitis B Panel is a 3-part blood test:

1. Hepatitis B surface antigen (HBsAg) – if this test is positive, the virus is present
2. Hepatitis B surface antibody (HBsAb) – if this test is positive, you are immune to hepatitis B
3. Hepatitis B core antibody (HBcAb) – if this test is positive, you may have been exposed to hepatitis B, and you should talk to your doctor

All three test results are needed to make a final diagnosis of your hepatitis B status.

If the test indicates that you have been infected with hepatitis B before but have since recovered, then you are immune. You cannot infect others and you do not need the vaccine.

If the test shows you are infected, it could be a new acute infection or an old chronic infection that your body never fought off. Your doctor will give you another blood test and monitor your condition.

Over the next 6 months after finding out you are infected, you will get another blood test. If the virus does not show up, you are immune to hepatitis B and cannot be infected again. If the virus is still present, you will be diagnosed as having chronic hepatitis B.



Ultrasound

This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

If you have chronic hepatitis B, getting a regular check-up every 6 months with a liver specialist is very important. The doctor will do a physical exam and order blood tests and an ultrasound imaging of your liver.

Some of the blood tests the doctor will order include the ALT (a liver enzyme that can indicate liver damage), the viral load (amount of hepatitis B virus in the blood) and the AFP (a liver cancer marker). Some people might also need a biopsy. Treatment depends on the results of these tests and the patient's health.

Treatment

For an acute hepatitis B infection, there is generally no treatment besides rest and managing any symptoms – the body will fight off the virus on its own.

For chronic hepatitis B, there is still no complete cure. However, most people with chronic hepatitis B can expect to live a long, healthy life. There are treatments that help slow the progression of liver disease by slowing down the virus, although not all people with chronic hepatitis B need treatment. If less hepatitis B virus is produced, then less damage is done to the liver.

Your doctor will probably want to see you at least once or twice a year to monitor your hepatitis B and the health of your liver. He or she can determine if you would benefit from treatment based on your blood tests and physical examination.

The following are five FDA approved drugs in the U.S. for chronic hepatitis B: Entecavir (Baraclude®), peginterferon alfa-2a (Pegasys®), Interferon alfa-2b (Intron A®), Lamivudine (EpiVir-HBV®) and Adefovir dipivoxil (Hepsera®). These drugs slow down the hepatitis B virus and reduce potential liver damage. In rare cases, they may even get rid of the virus completely.

Your doctor can help decide whether drug therapy would help you. It is important to understand the pros and cons of each treatment. Whether you decide to start treatment or not, you should regularly see a liver specialist or a doctor knowledgeable about hepatitis B.



People with a chronic hepatitis B infection should also make lifestyle choices that help them live healthy and protect their liver. They should avoid alcohol and smoking. Both of these can be extremely harmful to a liver already infected with hepatitis B.

This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

People with a chronic hepatitis B should also talk to their doctor about getting vaccinated against hepatitis A, another virus which attacks the liver and can be especially harmful for someone with chronic hepatitis B.

There is no special diet for people with chronic hepatitis B. It is best to eat a healthy, well-balanced diet that is low in fat and includes plenty of vegetables. You should avoid eating raw shellfish since they can contain bacteria that are harmful to your liver.

Prevention

Hepatitis B is 100 times more contagious than the AIDS virus, yet it can be prevented with a safe and effective vaccine.

Vaccination is necessary to protect everyone, especially infants and children. Without vaccinations, about 90% of infants who get the virus develop chronic infections. The hepatitis B vaccine is considered one of the safest and most effective vaccines ever made. It cannot cause hepatitis B.



The vaccine works for people who are not infected with the hepatitis B virus. People with acute or chronic hepatitis B do not benefit from the vaccine. Vaccination helps the body develop protective antibodies against the hepatitis B virus. With 3 separate shots, a person becomes immune to hepatitis B.

The hepatitis B vaccine should be readily available at your doctor's office, health clinic, or local department of health. It is recommended for:

- All babies at birth and children up to 18 years of age
- Adults, especially those in a high-risk group

Some common side effects include soreness, swelling and redness at the injection site.

Hepatitis B can be transmitted through sex with infected people. It is transmitted through blood and sexual fluids. Practice safe sex with all partners. Avoid using illegal drugs and misusing prescription drugs.

Transmission of hepatitis B can be prevented by NOT sharing needles, razors, nail clippers, toothbrushes and earrings or body rings. If you choose to get a tattoo or acupuncture, make sure sterile needles are used.

This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.

If you are pregnant, be sure to get tested for hepatitis B before your baby is born. Babies can be infected during delivery.

If you are pregnant and have hepatitis B, make sure your newborn gets the first dose of the hepatitis B vaccine and a shot of hepatitis B immune globulin (HBIG) in the delivery room to prevent the baby from developing a chronic infection.

If a newborn receives these 2 shots (1st dose of vaccine and HBIG) within the first 12 hours of life, then they have a 95% chance of being protected against a lifelong hepatitis B infection. If a newborn does not receive these 2 shots within the first 12 hours of life, then they have more than a 90% chance of becoming chronically infected with hepatitis B. There is no second chance!



Summary

Hepatitis B is the world's most common serious liver infection. It is caused by the hepatitis B virus, which attacks and injures the liver.

It is transmitted through blood, unprotected sex, shared or re-used needles and from an infected mother to her newborn baby during delivery.

Most infected adults are able to get rid of the hepatitis B virus without any problems. However, some adults and most infected babies and children cannot get rid of it and develop chronic hepatitis B, which means they could have the virus for a lifetime.

The good news is that there is a safe vaccine to prevent hepatitis B. There is a simple blood test to find out if a person has been infected. There are also promising treatments for those who have chronic hepatitis B.



This document is a summary of what appears on screen in *X-Plain™*. It is for informational purposes and is not intended to be a substitute for the advice of a doctor or healthcare professional or a recommendation for any particular treatment plan. Like any printed material, it may become out of date over time. It is important that you rely on the advice of a doctor or a healthcare professional for your specific condition.