

Common Gastrointestinal Problems

A Consumer Health Guide

Viral Liver Disease

The liver and its functions

The liver, the body's largest organ weighing about three pounds, is located on the right side of the abdomen, protected by the lower rib cage. It is responsible for over 5,000 life-sustaining functions, produces most of the building blocks used by the rest of the body and removes harmful chemicals. The liver produces bile that is transported to the small intestine to aid in the digestive process. The liver also produces proteins, hormones and enzymes that keep the body functioning normally, as well as materials that help in normal clotting of the blood, and to cleanse the body of substances that would otherwise be poisonous. It has a role in the processing of cholesterol, maintenance of blood sugar levels, and the processing of drugs.

When the liver becomes diseased, it may have many serious consequences. Viral infections are the most common diseases to affect the liver. When a virus damages a liver cell, the cell can no longer function. With fewer healthy cells to carry on their important work, many body functions can be affected.

What is Hepatitis?

Hepatitis means inflammation of the liver. There are many reasons for the liver to be inflamed, and not all of them are due to viruses. Certain toxic drugs and immune disorders may cause liver inflammation. The most common cause for liver inflammation is *viral hepatitis*. When liver inflammation is present for more than 6 months, the condition is referred to as *chronic hepatitis*.

In the United States:

There will be 500,000 new cases of viral hepatitis this year.

More than 4.5 million Americans have chronic viral hepatitis. That is nearly 2 percent of the United States population.

Chronic viral hepatitis, well tolerated in many, may result in premature death from cirrhosis or liver cell cancer and is a leading indication for liver transplantation.

What are the symptoms?

Symptoms produced by viral hepatitis are varied and differ depending upon whether the hepatitis is acute or chronic. Many cases of acute hepatitis are so mild that there may be no symptoms or only non-specific "flu-like" symptoms for a few days or weeks.

Symptoms of Viral Hepatitis

Acute hepatitis refers to inflammation of the liver and symptoms which are more short-term and sporadic. Acute hepatitis is less likely than chronic hepatitis to result in permanent damage to liver function.

Acute Hepatitis	Chronic Hepatitis
severe fatigue	fatigue
yellow eyes	joint aches
yellow skin	skin rashes
dark urine	loss of memory
low grade fevers	
GI upset	

Note: many patients with either acute or chronic hepatitis have NO SYMPTOMS, and symptoms are not a reliable means of knowing if progressive liver damage is occurring.

There are currently seven viruses known which cause liver inflammation. They are called hepatitis A, B, C, D, E, F and G. Because of this terminology, they are commonly referred to as an "alphabet soup" of names.

What difference does it make which virus I have?

There are several important differences in the viruses.

What Everyone Should Know About VIRAL LIVER DISEASE

Hepatitis A is the most common viral hepatitis. This virus produces acute hepatitis, but never chronic disease, so the individual infected may get sick for a few days or weeks, but once improvement occurs, the infection is over, and progressive destruction of the liver does not take place. It is rare for hepatitis A to become so severe that death (or need for urgent liver transplantation) occurs.

Hepatitis B gets better spontaneously in over 95 percent of cases. Only a few individuals with this infection are likely to develop chronic disease. An important exception to this rule applies to children. The younger the child at the time of infection, the more likely the infection will become chronic. For example, when the infection is acquired in infancy, more than 90 percent of cases become chronic. The majority of hepatitis B infections in this country occur in late-adolescents and adults. However, world-wide, infants are most likely to get hepatitis B infections.

Hepatitis C occurs primarily in late adolescents and in adults. Unlike hepatitis B, this infection ordinarily escapes the body's immune system and so in most cases does not resolve itself. In fact, up to 85 percent of people who get infected with hepatitis C will retain evidence of infection indefinitely.

Hepatitis D is a strange virus. It occurs only in conjunction with hepatitis B where it seems to function as a parasite. It may turn a smoldering but well-tolerated B infection into a more aggressive and destructive disease.

The other three hepatitis viruses E, F, and G are not common among individuals residing in the United States.

How is Hepatitis spread?

There are important differences in the ways viruses which cause hepatitis are spread. These differences hold the key to reducing the spread of these infections within families or communities.

Hepatitis A is frequently a childhood illness. It is passed from person-to-person. The virus is shed in the stool, and so poor hygiene after using the toilet can easily spread the virus from individual to individual. The virus also finds its way into food. It is easy to understand how nurseries and pre-schools are particularly vulnerable to the spread of hepatitis A.

Hepatitis B is spread via many routes, but hardly ever by ingestion of contaminated food. Instead, shared blood or body secretions are the primary means of infection. Nearly all body secretions may contain hepatitis B virus, so

that spread from one person to another may be seen in IV drug users who share needles, and also in those who receive tattoos or body piercing using improperly sterilized equipment.

Sexual transmission is another common means of spreading of hepatitis B. Infected mothers are particularly likely to spread hepatitis B to their newborns. All pregnant women are tested for hepatitis B which has helped to eliminate most mother-to-offspring transmission of hepatitis B.

The spread of Hepatitis C is also via contaminated body fluids, so that shared needles, tattooing, and body piercing may result in the spread of Hepatitis C. There is some evidence indicating that Hepatitis C may occasionally be spread by sexual contact, but this is not a common mode of transmission. Spread of Hepatitis C from mother to offspring is another somewhat uncertain area. It does not occur to nearly the same extent as spread of Hepatitis B, yet may occur in about 5 percent of infected mothers.

What can be done to prevent Hepatitis?

The means to prevent most cases of hepatitis are at hand. For some viruses it is even possible to immunize against infection. What is available for prevention of hepatitis A, B, and C?

Spread of hepatitis A can be prevented through good personal hygiene, thorough education of all food handlers, good sanitary care within nurseries and pre-schools and immunization. An effective vaccine was introduced in 1995. It is recommended mainly for travelers to areas where hepatitis A is a problem, and for military recruits. In time, it will likely become a standard childhood immunization.

In the case of exposure to a person with hepatitis A the first rule is: don't panic. This advice is particularly hard for parents of an exposed child. The chances of spread from child-to-child within schools is remote except in day care centers for the very young. In those cases, immunization if done promptly may reduce the likelihood of disease.

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What Everyone Should Know About VIRAL LIVER DISEASE

For families with an active infection, again the likelihood of spread is low. In fact, once the individual develops obvious disease, the virus has usually disappeared from the stool, and so the risk of further exposure and transmission through that route is curtailed. Nevertheless, it is a good practice to use separate eating utensils for a few days after the onset of symptoms. Immunization of household contacts may also be considered where there has been direct contact with the infected person. Immunization is not necessary for those who work in the same office or attend school where an individual develops hepatitis A.

Hepatitis B is a completely preventable disease. Good prenatal care, immunization of all school age children against hepatitis B, and individuals with multiple sexual partners, (or a partner identified as having hepatitis B) are all important strategies to prevent hepatitis B.

Hepatitis C prevention remains more difficult. There is no vaccine and experts predict it will be many years before one is developed. Risk reduction remains the cornerstone of prevention. Do not share IV needles, get tattoos or body piercing in establishments where standards of cleanliness are unknown, or have unprotected sex with multiple partners.

How is Hepatitis treated?

Treatment of viral hepatitis depends upon the particular culprit virus, and upon whether the infection is acute or chronic. For acute infections of hepatitis A, B, and C, general measures to make the individual more comfortable are all that is necessary. Hepatitis A will virtually "always" get better. Follow-up is needed in cases of hepatitis B and C via blood tests, because symptoms are not a reliable sign regarding the presence of chronic infection.

For chronic viral hepatitis B and C no certain cure exists, but for a minority of patients antiviral therapy will arrest the infection. The only drugs approved by the Food & Drug Administration for use against viral hepatitis are interferons which must be given by injection (like insulin for diabetics) for many months and may produce side effects.

What are the long-term consequences of Hepatitis?

Many patients with chronic hepatitis B or C who receive no treatment (or in whom it proves unhelpful) may nonetheless have a good chance to recover reasonably well. In fact, in the United States where infection is usually acquired after childhood, the majority of infected individuals may have either no long-term bad consequences, or only mild or moderately troublesome symptoms.

In cases of chronic hepatitis where infection has been present for 20 years or more, signs and symptoms of a badly scarred liver may emerge in 15-30 percent of these patients. The disease may produce such severe problems that death may ensue or may only be avoided by liver transplantation.

While liver cancer most often spreads from some other site in the body, sometimes liver cancer will originate from liver cells rather than from another organ. These tumors are called *hepatomas*. Approximately 70 percent of hepatomas in the United States arise in the setting of chronic hepatitis B or C.

Conclusions

It is clear that viral hepatitis is a substantial health threat in the United States. Through education, much more can be done to reduce the spread of these diseases. Treatment for those chronically infected is available and should be considered on an individual basis.

Virus	Means of Spread	Chronic Form	Immunization Available
A	oral ingestion of contaminated material	No	Yes
B	Common: "dirty needles," e.g., IV drug use, tattoos, body piercing sexual		
B	Uncommon in US: mother-to-offspring	Yes	Yes
C	Common: "dirty needles," e.g., IV drug use, tattoos, body piercing		
C	Uncommon in US: mother-to-offspring sexual	Yes	No
D	same as hepatitis B (immunize against hepatitis B)	Yes	Yes