

DIAGNOSIS

Individuals infected with HCV are often unaware of the illness because most of the time they do not have specific symptoms (e.g., loss of appetite, abdominal pain or malaise). Patients are often found to have elevated liver enzymes on a routine blood test (i.e., alanine aminotransferase, or ALT test), and others test positive for hepatitis C antibody during a blood donation.

Within three months following exposure to the virus, 90% of the infected people will have detectable antibodies. A more specific hepatitis C antibody test with a low false positive rate has been available since 1992. In general, elevated liver enzymes and a positive HCV antibody test indicate that an individual has chronic hepatitis C. Some patients (15 - 25%) may recover from acute hepatitis C, but their HCV antibody test may remain positive.

A hepatitis C antibody test is the best way of determining if you have been exposed to HCV. A doctor or clinic can readily provide this test. An easy to use, FDA-approved hepatitis C test kit (Hepatitis C Check) can be purchased online or by telephone. Other testing that may be performed includes RIBA, HCV RNA and other biochemical liver tests. A liver biopsy is typically done to provide confirmation of the underlying disease, find the severity of liver damage, and determine the necessity of treatment.

RISK

Hepatitis C affects people from all walks of life, regardless of age, race, gender or sexual orientation. There are factors, however, that put some people at greater risk than others.

Individuals who may come in contact with infected blood, instruments or needles, such as injection drug users, health care workers or public safety workers, are at risk of acquiring hepatitis C. Other potential risks include intranasal cocaine use, tattooing and body piercing. There is also a risk of exposure for people who have unprotected sex with multiple sexual partners, especially if there is a history of sexually transmitted disease.

People living with HCV infected individuals should avoid sharing such items as razors, toothbrushes and nail clippers to reduce the risk of exposure.

Testing is advised in those individuals who:

- received a blood transfusion or organ transplant prior to 1992
- used intravenous drugs, even once
- received long-term hemodialysis
- received clotting factor made prior to 1987
- have persistently abnormal ALT levels
- are health care, emergency medical and public safety workers exposed to needles, sharps, or mucosal exposures to HCV-positive blood
- were born to an HCV-infected mother

Testing should be considered in those who:

- have unprotected sex with multiple partners or have a history of sexually transmitted disease
- received tattoos or body piercings with unsterile needles
- are intranasal cocaine users
- have household exposure - sharing razor or toothbrushes with an infected person

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American Liver Foundation
75 Maiden Lane, Suite 603
New York, NY 10038

1-800-GO-LIVER (465-4837)
1-888-4HEP-ABC (443-7222)

Web site: www.liverfoundation.org
E-mail: info@liverfoundation.org

The American Liver Foundation is a national, nonprofit organization dedicated to the prevention, treatment and cure of hepatitis and other liver diseases through research, education and advocacy.

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Hepatitis C: An Information Resource

Hepatitis C

Hepatitis C virus (HCV) is the most common chronic bloodborne infection in the United States. Over 4 million Americans have been infected with HCV and as many as 70% of those persons infected are unaware that they carry the virus. It is estimated that up to 85% of the people infected each year will develop chronic infection.

HCV is transmitted primarily through direct exposure to blood through an opening in the skin or mucous membrane. The hepatitis C virus infects the liver, causing inflammation that can cause cirrhosis (scarring of the liver), liver cancer and liver failure. It is responsible for 10,000 - 12,000 deaths each year.

There is currently no vaccine available to prevent hepatitis C.



How is hepatitis C treated?

Current therapies approved by the U.S. Food and Drug Administration (FDA) include:

- **Monotherapy** with interferon (Infergen, Intron-A, Roferon-A) or pegylated interferon (Peg-Intron, Pegasys)
- **Combination** therapy - interferon or pegylated interferon used with ribavirin (Peg-Intron with Rebetol or Pegasys with Copegus)

What is pegylated interferon?

Interferon is a type of protein produced by the body's cells in response to viral hepatitis and other infections. Interferon stimulates the body's immune system to fight viral infections and affect the ability of viruses to divide in liver cells.

In pegylation, one or more chains of polyethelene glycol, or PEG (a gelatinous compound used to thicken food), are bonded to an interferon molecule. Whereas three injections per week are normally required with regular interferon treatment, only one injection of pegylated interferon is required per week. In combination therapy, pegylated interferon is taken with the antiviral drug ribavirin.

When is pegylated combination therapy prescribed?

The once-weekly pegylated injection and

daily ribavirin pills are prescribed for the treatment of chronic hepatitis C in patients who are at least 18 years of age, and have not previously been treated with alpha interferon. When used in combination therapy, ribavirin (Rebetol) is taken by mouth.

How effective is therapy?

Overall, studies with pegylated combination therapy have shown sustained response rates in 55% of patients. Overall response rates for pegylated interferon alone are approximately 24%. It seems that both forms of pegylated interferon (Peg-Intron and Pegasys) are equally effective.

What are the side effects of treatment?

Side effects can include "flu-like" symptoms such as fever, chills, headaches, muscle or joint aches, tiredness and weakness. These side effects usually decrease in severity as treatment continues. Some patients may experience depression. Some interferons may aggravate or cause neuropsychiatric, autoimmune, ischemic (decrease in blood supply) or infectious disorders. The ribavirin component of combination therapy can also cause a form of anemia.

What is the relationship between diet and hepatitis C?

General guidelines for individuals infected with HCV include maintaining a healthy lifestyle, eating a well-balanced, low-fat diet, and avoiding alcohol. A diet high in complex carbohydrates and maintaining weight. Since HCV infection may lead to loss of appetite, those individuals whose appetite is diminished may find frequent, small meals more easily tolerated. Adequate rest and moderate exercise can also contribute to a feeling of well-being.

Alcohol and hepatitis C

Alcohol is a potent toxin to the liver. Excessive drinking can lead to cirrhosis and its complications, including liver cancer. Patients with hepatitis C have a higher incidence of severe liver damage, cirrhosis, and a decreased lifespan, compared to individuals without the virus. It is suggested that the combination of alcohol and HCV accelerates the progression of liver disease. Total avoidance of all alcohol intake is recommended.

Iron and hepatitis C

The liver plays an important role in the metabolism of iron since it is the primary organ in the body that stores this metal. Patients with chronic hepatitis C sometimes have an increase in the iron concentration in the liver. Excess iron can be very damaging to the liver. Studies suggest that high iron levels

reduce the response rate of patients with HCV to interferon. Patients with chronic HCV whose serum iron level is elevated, or who have cirrhosis, should avoid taking iron supplements. In addition, these patients should restrict their intake of iron-rich foods, such as red meats, liver, and iron-fortified cereals, and should avoid cooking with iron-coated cookware and utensils.

Fat and hepatitis C

Patients with chronic HCV are advised to maintain normal weight. For those who are overweight, it is crucial to start a prudent exercise routine and a low fat, well-balanced, weight-reducing diet. Diabetic patients should follow a sugar restricted diet. A low cholesterol diet should be followed in those with hypertriglyceridemia. It is essential that patients consult with their physicians before beginning any diet or exercise program.

Protein and hepatitis C

Adequate protein intake is important to build and maintain muscle mass and to assist in healing and repair. Protein intake must be adjusted to one's body weight and medical condition. Approximately 1.0 to 1.5 gm of protein per kilogram of body weight is recommended in the diet each day for regeneration of liver cells in non-cirrhotic patients.

In a small but significant number of individuals with cirrhosis, a complication known as encephalopathy, or impaired mental state, may occur. Affected individuals

may show signs of disorientation and confusion. The exact cause of encephalopathy is not fully understood. Some experts believe there is a link between dietary protein and encephalopathy. Others believe in substantially reducing or eliminating animal protein and adhering to a vegetarian diet, in order to help improve mental status. Patients who are at risk for encephalopathy may be advised to eat no more than .6 - .8 gm of animal source protein per kilogram of body weight per day.

For specific recommendations, consult your physician.

Getting help and information

Sources of information for people affected by hepatitis C include:

American Liver Foundation

For more information about hepatitis and to connect with local ALF chapters and support groups across the country.
1-888-4HEP-USA
www.liverfoundation.org

Centers for Disease Control and Prevention

1-888-4HEP-CDC
www.cdc.gov/ncidod/diseases/hepatitis

National Digestive Disease Clearinghouse

1-301-654-3810
www.niddk.nih.gov