

► LIVER CANCER ◀

When cells in the liver become abnormal, grow out of control and form a cancerous tumor, the disease is called primary liver cancer, also known as malignant hepatoma or hepatocellular carcinoma. (“Hepato” means “liver.”) Primary liver cancer is not the same disease as cancer that spreads (metastasizes) to the liver from another part of the body (secondary liver cancer). The liver is often the site of secondary tumors that result from the spread of cancer from another organ, such as the colon or breast. The cancer cells in the secondary tumor are like those of the original cancer, the primary cancer, which is named for the part of the body in which it began. Thus, cancer that begins in the colon or breast and spreads to the liver is called metastatic colon cancer or metastatic breast cancer.

What are the causes of liver cancer?

The National Cancer Institute reports that, in the United States, primary liver cancer is uncommon. About 5,000 are diagnosed in this country each year, accounting for less than one-half of 1 percent of all cancers.

In other parts of the world, however, primary liver cancer is one of the most common types of cancer and causes more deaths than any other type of cancer. Worldwide, this disease is a major health problem. Rates are highest in Asia and Africa and are believed to be related to infection with the hepatitis-B virus.

Nearly 80 percent of primary liver cancer in the world is causally associated with persistent **hepatitis-B virus** infection. In addition, this virus infection is associated with the development of chronic hepatitis B and cirrhosis of the liver. Hepatitis-B virus infection is common in developing countries. Many infants are infected with it at birth because of the high rate of hepatitis-B infection among women of childbearing age. This factor is important because scientists believe that the longer a person has been infected with the virus, the greater the likelihood of developing liver cancer. Evidence of hepatitis-B virus infection is also found in nearly 25 percent of Americans with liver cancer. The use of a vaccine against the virus is recommended to protect healthcare workers and others who are at risk of exposure.

Recently, scientists have discovered that persistent infection with the **hepatitis-C virus** is associated with the development of chronic hepatitis C, cirrhosis of the liver and liver cancer. In the United States, 25 percent of primary liver cancer, not related to the hepatitis-B virus, is attributed to hepatitis-C virus infection.

Patients with **idiopathic hemochromatosis**, a genetic disorder characterized by increased iron storage in the liver and blood, also carry an extremely high risk of developing primary liver cancer.

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Researchers have found that people with certain other liver diseases have a higher-than-average chance of developing primary liver cancer. For example, about 5 percent of people diagnosed as having **cirrhosis of the liver**, a progressive disorder that leads to scarring of the liver, eventually develop liver cancer. An example is cirrhosis caused by alcohol consumption. However, it has not been determined that cirrhosis is actually a precancerous condition; some research suggests that **lifestyle factors**, such as alcohol consumption and malnutrition, cause both cirrhosis and liver cancer.

Aflatoxins, a group of chemicals produced by a mold that sometimes contaminates certain foods, such as peanuts, grains and seeds, are known agents for causing liver cancer. As a precautionary measure, the United States Food and Drug Administration monitors the safety and quality of these foods and products that contain them. If such foods become moldy after purchase, they should be discarded.

Vinyl chloride, an industrial gas used mainly in the manufacture of plastics and formerly used as an aerosol propellant, has been identified as a cause of angiosarcoma, another form of liver cancer. There have been reports of angiosarcomas in people who have taken anabolic steroids and birth control pills, but this is very rare.

What are the symptoms of liver cancer?

Because its first symptoms are usually vague, liver cancer is difficult to detect in an early stage. As with other types of cancer, this disease can cause a general feeling of poor health. Liver cancer can lead to loss of appetite, weight loss, fever, fatigue and weakness.

As the tumor grows, patients may have pain that begins in the upper abdomen on the

right side and reaches into the back and right shoulder. Some patients can feel a mass in the upper abdomen. Liver cancer can also lead to abdominal swelling and a feeling of fullness or bloating. Patients may have episodes of fever and nausea. Some patients develop jaundice, a condition in which the skin and the whites of the eyes become yellow, and the urine may become dark.

How is liver cancer diagnosed?

To make a diagnosis, your doctor takes a complete medical history, does a careful physical examination and orders certain tests.

- Special blood tests are used to see how well your liver is functioning. Blood tests can also be used to check for tumor markers, substances often found in abnormal amounts in patients with liver cancer.
- Abdominal ultrasound, magnetic resonance imaging (MRI), CT scans (X-rays put together by computer) and angiograms (X-rays of blood vessels) may all be used to make a diagnosis.
- The diagnosis is confirmed with a biopsy. Tissue from your liver is removed, through a needle or during an operation, and checked under a microscope for the presence of cancer cells.

How is liver cancer treated?

Surgical removal of the tumor can be successful if the tumor is found early and is very small. Also, various methods including transarterial chemoembolization (TACE) (which injects anticancer agent directly into the tumor through hepatic artery), percutaneous alcohol injection, radiofrequency thermoablation and cryoablation are being used to control the small tumors. In most cases, however, liver cancer is diagnosed at a later stage and becomes difficult to manage.

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Nonetheless, treatment can relieve symptoms and improve the quality of your life.

Your physician may recommend surgery, chemotherapy, radiation therapy, biological therapy (treatment using substances that help the body fight the cancer), or a combination of these treatments.

In the near future, liver transplantation may prove to be important in the treatment of liver cancer.

Scientists are also conducting research, including clinical trials (treatment studies), to try to find more effective treatments and better ways to use current treatments. Participation in a clinical trial is an option for many patients with liver cancer.

What are clinical trials?

When laboratory research shows that a new treatment method has promise, patients with cancer have the opportunity to receive the treatment in clinical trials or protocols.

By participating in a clinical trial you may have the first chance to benefit from improved treatment methods and the opportunity to make an important contribution to medical science.

To find out more about current clinical trials that you may be able to participate in, ask your doctor or call 215-955-1661 or 1-800-JEFF-NOW.

*For an appointment with a Jefferson physician, more information or health information and education programs, please call **1-800-JEFF-NOW** (1-800-533-3669) or visit our Web site at **www.JeffersonHospital.org***

Jefferson also offers a number of cancer support and education programs as well as a Buddy Program in which survivors of cancer provide support and encouragement to patients who are newly diagnosed and an active cancer advocacy group. You'll find information on the Jefferson Web site about these programs or by calling 1-800-JEFF-NOW.

Speech- or hearing-impaired callers can access JEFF NOW® by calling 1-800-654-5984..