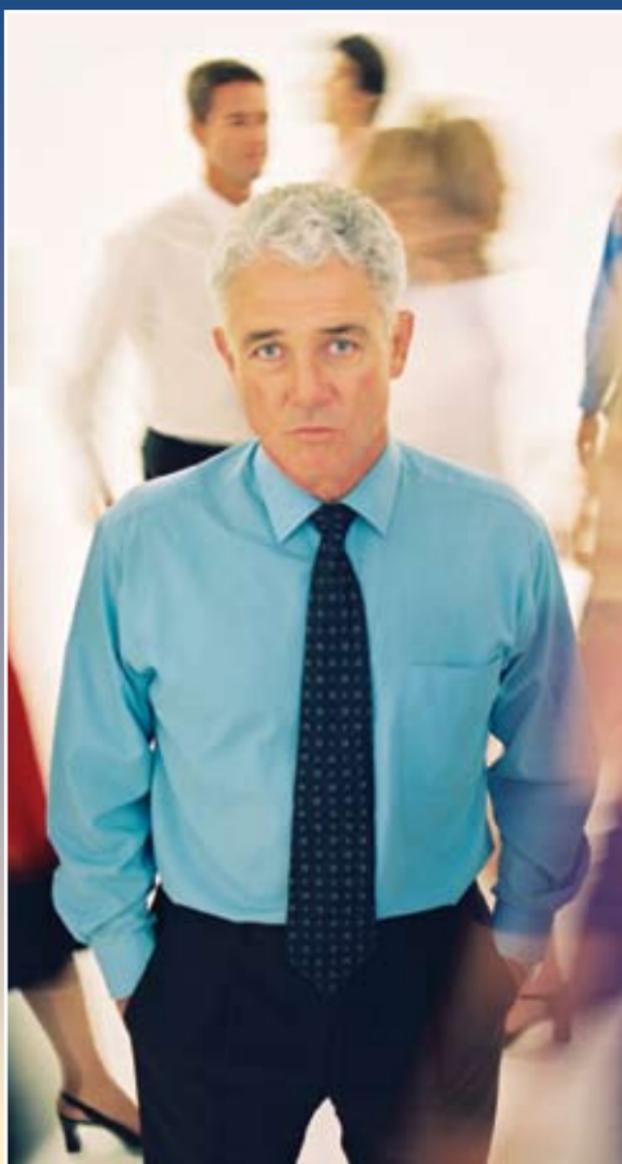


LIVER CANCER AND TUMOURS



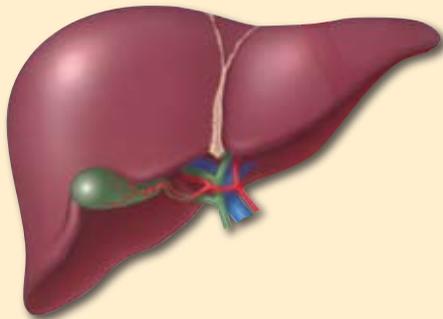
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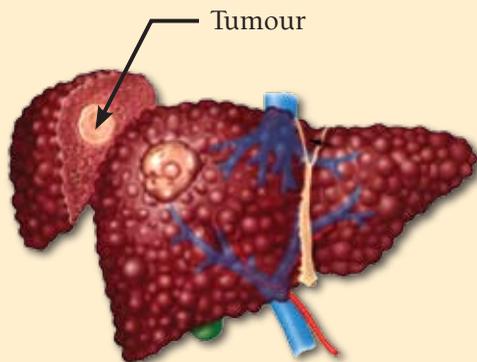
FONDATION
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DU FOIE

LIVER CANCER AND TUMOURS

Healthy Liver



Cirrhotic Liver



What causes liver cancer?

Many factors may play a role in the development of cancer. Because the liver filters blood from all parts of the body, cancer cells from elsewhere can lodge in the liver and start to grow. Cancers that begin in the gut often spread to the liver.

The ability of the liver to regenerate may also be linked to the development of liver cancers.

How are liver tumours classified?

There are many types of liver tumours, only some of which are cancers. The most important classification is whether the tumours are benign (relatively harmless) or malignant (capable of spreading from the liver and thus more serious).

Benign Tumours

Hemangioma is the most common type of benign liver tumour. It is an abnormal growth of blood vessels of the liver that begins in the fetus. More than 10% of the normal population has hemangiomas in the liver. Most people with hemangiomas have no symptoms and require no treatments. In rare cases, some hemangiomas may enlarge and bleed, in which case they may require surgical removal.



Hepatic adenomas are benign tumours of liver cells. While most do not cause symptoms nor require treatment, large ones may cause pain or blood loss and may need to be removed. Hepatic adenomas occur more frequently in women and seem to be triggered in some cases by the birth control pill or by pregnancy.

Focal nodular hyperplasia (FNH) is a tumour-like growth of several cell types. Although FNH tumours are benign, it can be hard to distinguish them from liver cancers.

Malignant Tumours

The most common form of primary liver cancer (cancer that starts in the liver) in adults is called **hepatocellular carcinoma** (HCC). It is a cancer of liver cells. This type of cancer can have different growth patterns. Some begin as a single tumour that grows larger and may eventually spread to other parts of the liver.

Liver cancer may also develop in more than one site in the liver and may grow into multiple tumours. This pattern is most often seen in people with liver cirrhosis.

Cholangiocarcinoma is another liver cancer which originates in the small bile ducts (tubes that carry bile to the gall bladder).



Most often, however, when cancer occurs in the liver, it did not start there, but spread to the liver from a cancer that began somewhere else in the body. These types of cancers are named after the place where

they began (primary site) and are considered **secondary liver cancers** or **cancer metastases**.

For example, cancer that started in the lung and spread to the liver is called *metastatic lung cancer with spread to the liver*. Secondary liver cancers are 30 times more prevalent than primary liver cancers.

What are the risk factors associated with liver cancer?

In the absence of chronic liver disease, liver cancer is rare. For patients with underlying liver disease, however, liver cancer may be quite common. The exact cause of liver cancer is not known, but scientists have identified many risk factors:

- Among those with **chronic liver disease**, men are more likely to develop liver cancer than women. The reason for this is unknown.
- **Viral infection of the liver:** Chronic infection with either hepatitis B or hepatitis C may lead to the development of cancer.
- Certain types of **inherited liver disease:** Hemochromatosis, which results in an accumulation of excess iron in the liver, as well as alpha-1 antitrypsin deficiency, and tyrosinemia can lead to the development of liver cancer later in life.
- **Cirrhosis:** The formation of scar tissue in the liver, or cirrhosis, can often lead to cancer. Major causes of liver cirrhosis are alcohol use, chronic hepatitis B and C, and non-alcoholic steatohepatitis (NASH).
- **Alcohol:** Excessive alcohol use is a known risk factor for development of alcoholic cirrhosis and liver cancer.

- **Obesity:** Fatty liver disease is linked to obesity and can increase the risk of developing liver cancer.
- **Tobacco:** Smoking can increase the risk of liver cancer if you already have chronic liver disease.
- **Anabolic steroids:** Long-term use of anabolic steroids can increase the risk of liver cancer.

What is the incidence of primary liver cancers?

Primary liver cancers account for less than 1% of all cancers in North America. In Africa, Southeast Asia, and China, they may account for up to 50% of cancers. The high prevalence of people carrying the hepatitis B virus and having liver cirrhosis may account for this geographic discrepancy.

What are the symptoms of liver cancer?

In the early stages, liver cancer does not cause symptoms. Once the disease becomes advanced, a patient may suffer:

- weight loss,
- loss of appetite,
- abdominal pain,
- jaundice,
- fluid in the abdomen.

How is liver cancer detected?

- ultrasound
- blood test to check for increased levels of alpha-fetoprotein (AFP)
- computer tomography scan (CT)
- magnetic resonance imaging (MRI)

Are there treatments for primary liver cancer?

The treatment of HCC depends on the stage and the speed of tumour growth. Small primary cancers of the liver are curable. Cure rates generally decrease as the tumour size increases. Treatment of liver cancer may involve surgery, radiation therapy and chemotherapy or liver transplantation.

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Surgery

Small liver tumours can be removed through a surgical procedure known as resection, in which a piece of the liver containing the tumour is removed. If all of the cancer can be removed, a patient has a good outlook for survival. If the cancer is too large, is found in many different parts of the liver, or has spread beyond the liver, it may not be possible to remove it completely. For many people with cirrhosis there is insufficient healthy liver to allow removal of even a small part of the liver. In this case, surgery is not an option.



Tumour ablation or embolization

Ablation refers to methods that destroy the tumour without removing it. Examples include destroying the tumour by using high-energy radio waves (RFA), freezing it with a very cold metal probe, or injecting alcohol directly into the tumour to kill cancer cells. The blood supply to the cancer can be reduced by blocking the artery that feeds the cancer or by injecting materials that plug the artery. This is called embolization. Because this kind of treatment also reduces blood supply to the normal liver tissue, it can be dangerous for people with diseases such as hepatitis or cirrhosis.

Chemoembolization

Chemoembolization involves combining embolization with chemotherapy. Chemoembolization prolongs life in patients in whom a cure is not possible.

Radiation therapy

Radiation therapy is treatment that uses high-energy rays (such as x-rays) to kill or shrink cancer cells. This type of treatment may be used to shrink a liver tumour or to provide relief from symptoms, but it does not cure the liver cancer.



Chemotherapy

Chemotherapy refers to the use of drugs to kill cancer cells. Usually, the drugs are given through a vein or by mouth. Unfortunately, liver cancer does not respond well to most chemotherapy drugs.

Are people with liver cancer considered for transplantation?

Most cancers of the liver begin elsewhere in the body and are spread to the liver. These cancers are not curable through liver transplantation. Tumours that originate in the liver are usually detected in an advanced stage. They are also rarely cured by a liver transplant. If the cancer is small and confined to the liver, a transplant may be considered.

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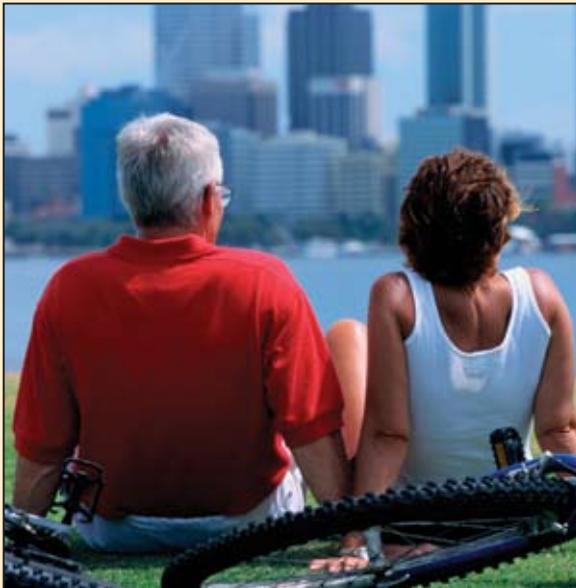
Are there treatments for secondary liver cancers?

The liver is involved in approximately one third of all cancers and often those that begin in the gastrointestinal tract, colon, pancreas, stomach, breast and lung. The risk factors involved in this type of liver cancer are numerous given that the cancers originate elsewhere. The prognosis for patients with secondary liver tumors depends on the primary site of malignancy. In general, patients do not live longer than one year from the diagnosis of hepatic metastases. Treatments remain unsatisfactory but include chemotherapy, immunotherapy, and embolization.

Can liver cancer be prevented?

Prevention is the best defence against liver cancer. Worldwide, the most common risk factor for liver cancer is chronic hepatitis B and C infection. Therefore, prevention of these forms of liver disease is important. The Canadian Liver Foundation recommends that all children as well as adults at high risk should be vaccinated against hepatitis B.

- Since there is no vaccine against hepatitis C, it is important to prevent the spread of this disease, and to identify and assess for treatment all those who are already infected with the hepatitis C virus.
- Alcohol consumption should be limited to no more than one to two standard drinks per day. Drinking alcohol every day as well as binge drinking can be harmful to your liver. If you already have a liver disease, the safest amount of alcohol is no alcohol at all.



- It is important to maintain a well balanced diet and introduce exercise into your daily routine.
- People at high risk of liver cancer should be screened regularly to increase the chances of early detection. Early detection of small liver cancers greatly enhances the chances of cure using techniques such as radiofrequency ablation. Everyone who is at risk for the development of primary liver cancer should undergo regular screening by ultrasonography at six monthly intervals. Abnormal ultrasound results should prompt a visit to a liver specialist.

What does the future hold?

The Canadian Liver Foundation funds research into the causes, diagnosis, prevention and treatment of all forms of liver disease including liver cancer. Scientists are looking for the causes of liver cancer, ways to prevent it and to improve treatments. By controlling viral hepatitis infection and improving treatments for chronic hepatitis, about half of liver cancer cases worldwide could be prevented. New methods that combine treatments with surgery are being studied.

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The Canadian Liver Foundation raises funds for research into liver diseases such as liver cancer. Our mandate is to reduce the incidence and impact of all forms of liver disease. Research will provide a much better understanding of the disease and could make a cure available in the future.

For more information about liver cancer, liver diseases or liver health, please contact the Canadian Liver Foundation at 416-491-3353 or 1-800-563-5483.

You can volunteer, donate and find out more information about the liver at www.liver.ca.

This is a rapidly changing field of medicine. Information in this brochure is current for September 2006.

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