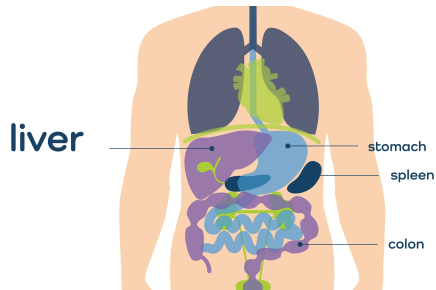


Liver Cancer & Tumours

Your liver and why it's so important!

Your liver is one of the largest and hardest-working organs in your body. Located under your ribs on the right side of your abdomen, your liver:



- Filters harmful substances from your blood
- Helps digest food by producing bile
- Stores nutrients and energy
- Fights infections
- Produces, regulates, and balances hormones

What are liver tumours?

A liver tumour is a mass or growth in the liver that results when liver cells begin to grow in an abnormal way. The liver has the incredible capacity to regenerate, which is why abnormal growths can occur relatively easily. Liver tumours are often discovered during routine medical tests, even before any symptoms appear. If symptoms do develop, they may include discomfort or pain in the abdomen, fatigue, or swelling. Healthcare teams often use blood tests, imaging scans, and biopsies to detect a tumour and guide treatment decisions.

Types of tumours

Benign (non-cancerous) liver tumours

Hemangioma: The most common benign tumour. They almost never turn into cancer and rarely need treatment unless they grow large, cause discomfort, or cause complications.

Hepatic Adenoma: A rare growth often linked to hormonal treatments. It may cause mild discomfort and occasionally requires surgery if it grows or carries risk.

Focal Nodular Hyperplasia (FNH): The second most common benign tumour. It usually has no symptoms and typically doesn't need treatment unless it grows or causes discomfort.

Malignant (cancerous) liver tumours

Hepatocellular Carcinoma (HCC): The most common primary type of liver cancer, often developing after long-term liver damage. It may not show symptoms early on, and if detected promptly, treatment can be effective.

Cholangiocarcinoma (Bile Duct Cancer): Begins in the bile ducts and may cause jaundice, abdominal pain, itching, or weight loss. Treatment may include surgery or specialized drug therapies.

Hepatoblastoma: A rare liver cancer affecting babies and young children. It presents with belly pain, a swollen abdomen, and unexpected weight loss. It's highly treatable with chemotherapy and surgery when caught early.

What is liver cancer?

When the liver is injured, it works hard to repair itself by making new cells. Sometimes, changes (mutations) can happen in the genes during this process. Over time, these changes can lead to cells overgrowing out of control and may result in cancer.

- **Primary liver cancer:** Primary liver cancer starts in the liver. The most common type is hepatocellular carcinoma (HCC).
- **Secondary (metastatic) liver cancer:** Secondary liver cancer starts in another organ (like the colon or lungs) and spreads to the liver. This is 20–40 times more common than primary liver cancer.

How common is liver cancer?



Liver cancer is one of the fastest-rising forms of cancer worldwide.

Primary liver cancer (cancer that starts in the liver) hasn't typically been a very common form of cancer in Canada or North America, but cases are slowly rising. **About 2,000 Canadians** are diagnosed each year.

Primary liver cancer is much more common in parts of Africa, Southeast Asia, and China, where viral hepatitis B and C infections are more common. In some of these areas, liver cancer makes up over 20% of all new cancer cases.

Worldwide, liver cancer is the **6th most common cancer** and the **3rd leading cause of cancer deaths**. Because it often doesn't cause symptoms until it's advanced, early detection and lowering your risk are very important.

What are the symptoms?



Liver cancer may not cause any symptoms in its early stages. As it progresses, you might notice symptoms such as:



Unexplained weight loss



Pain in the upper right abdomen



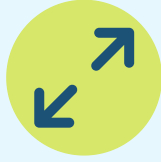
Fatigue and weakness



Yellowing of the eyes and skin (jaundice)



Loss of appetite



Swelling in the abdomen



Bruising or bleeding more than usual



Feeling nauseous or vomiting



Itchy skin



If you, or someone you know, is experiencing these symptoms, it's important to see a doctor as soon as possible. When liver cancer is detected early, patients have access to more treatment options and see better outcomes.

What causes liver cancer?

Liver cancer often develops after prolonged damage to the liver. These risk factors include:

- **Hepatitis B/D or C infections:** Chronic (long-term) infection causes liver inflammation which can lead to cirrhosis and cancer.
- **Cirrhosis:** Scarring from hepatitis, heavy alcohol use, or other chronic liver conditions increases the risk of developing liver cancer.
- **MASLD or MASH:** Metabolic dysfunction-associated steatotic liver disease (MASLD) and metabolic dysfunction-associated steatohepatitis (MASH) happens when fat accumulates in the liver. Over time, this can lead to swelling, and even scarring which increases risk of liver cancer.
- **Heavy alcohol use:** Long-term drinking can lead to cirrhosis and cancer. Individuals with alcohol-related liver disease are more likely to develop primary liver cancer.
- **Exposure to harmful chemicals:** Certain toxic substances, like aflatoxins (from moldy food), or industrial chemicals can damage the liver and increase the risk of developing cancer.
- **Smoking:** Your liver filters everything that you breathe in, so smoking increases exposure to harmful chemicals that damage the liver and can cause liver cancer.
- **Genetic conditions:** Rare diseases, like hemochromatosis, can harm the liver over time and increase the risk of developing liver cancer.



What you can do to lower your risk

- ✓ Get vaccinated for hepatitis A and B
- ✓ Get tested and treated for hepatitis C
- ✓ Limit or avoid alcohol consumption
- ✓ Maintain a healthy weight and eat a balanced diet
- ✓ Quit smoking
- ✓ Avoid harmful chemicals and toxins
- ✓ If you're living with a chronic form of liver disease, see your doctor regularly

How doctors check for liver cancer

If there are signs of a liver problem, your doctor may order tests to learn more, including:



- **Physical exam and health questions:** A doctor will check for swelling or lumps, ask about your symptoms, your medical history, and any risk factors.
- **Blood tests:** Blood tests will test how well your liver is functioning. A doctor will check for a substance in your blood called AFP (alpha-fetoprotein) which can be a sign of liver cancer.
- **Ultrasound:** A non-invasive test which can be used to look for unusual lumps, growths, fat deposition, and presence of scar tissue.
- **CT or MRI scan:** Detailed images can be used to assess tumour size, location, and spread.
- **Liver biopsy:** Doctors may request a small tissue sample to examine your liver under a microscope which can help confirm a liver cancer diagnosis.

Your doctor will determine which tests are needed based on your symptoms and health history. If you're at higher risk (i.e., you're living with hepatitis, cirrhosis, MASLD/MASH, etc.), regular screening can help catch cancer early, when it's most treatable.



Primary liver cancer treatment



Your care team will tailor treatment to your unique needs, so you get the care that's right for you. Possible treatments include:

Surgery

If liver cancer is found early, is well localized, and your liver is working well, surgery may be an option:

- **Liver resection:** Removes the part of the liver with the tumour.
- **Liver transplant:** Replaces your liver with a healthy donor liver.

Surgery offers the best chance for a cure, but it's not possible for everyone, especially if the liver is severely damaged (e.g., from cirrhosis).

Tumour ablation

Ablation therapy destroys liver cancer cells using a thin needle or probe while trying to avoid damaging as much of the surrounding liver tissue as possible. It's often used for small tumours or if surgery isn't possible.

There are four forms of ablation, including:

- Radiofrequency ablation (RFA)
- Microwave ablation (MWA)
- Cryoablation
- Percutaneous ethanol injection (PEI)

Embolization

Embolization shrinks or stunts a tumour's growth by blocking blood flow to the tumour. There are two types of embolization:

- Chemoembolization (TACE), which delivers chemotherapy directly to the tumour.
- Radioembolization (TARE/SIRT), which uses tiny radioactive beads.

Other treatments

- **Radiation therapy:** Uses high-energy rays to kill cancer cells. It's often used if surgery isn't possible or to relieve symptoms.
- **Chemotherapy:** Uses strong medicines to kill cancer cells. Chemotherapy is often not the first form of treatment for liver cancer as other treatments are often more effective.
- **Targeted therapy:** Uses specific medications that attack parts of cancer cells (e.g., Sorafenib or Lenvatinib).
- **Immunotherapy:** Our immune system has the ability to find and destroy cancer cells. But cancer cells can sometimes hide from the immune system and avoid being destroyed. Immunotherapy helps to strengthen or restore the immune system's ability to fight cancer. This form of treatment is given by IV at the hospital.



Choosing the right treatment

Your doctor will help choose treatment that's best for you based on:

- The size and location of the tumour
- How well your liver is working
- Your overall health and age
- Whether the cancer has spread

Often, a team of specialists will work together to create a care plan that fits your needs.

Secondary liver cancer treatment

Secondary liver cancer (metastatic cancer) starts in another part of the body, like the pancreas, colon, breast, or lungs, and spreads to the liver.

For secondary liver cancer, treatment focuses on **slowing the cancer, shrinking tumours, easing symptoms**, and **helping you feel as well as possible**.

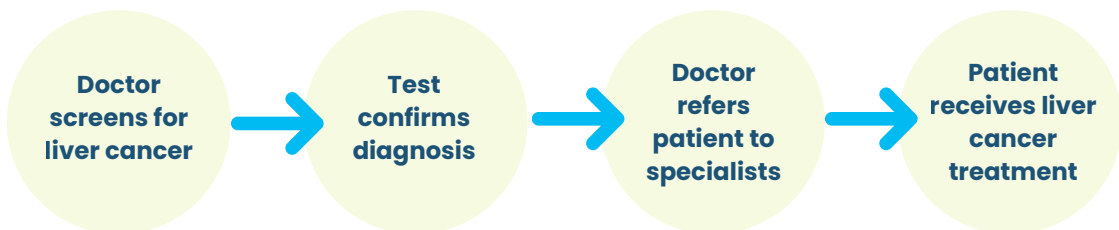


Common treatments

- **Whole-body treatments (systemic therapy):** Chemotherapy, targeted therapy, hormone therapy, or immunotherapy, usually based on where the cancer first started.
- **Surgery:** If only a few tumours are in the liver and there's no cancer elsewhere, removing them may be possible and can sometimes offer long-term survival or even a cure.
- **Liver-directed treatments:** Treatment that's focused directly on liver cancer, such as:
 - **Ablation:** Destroys cancer cells with heat, cold, or alcohol.
 - **Embolization:** Blocks blood flow to the tumour.
 - **Radiation therapy:** Shrinks tumours and eases symptoms.

Liver cancer care pathway in Canada

If it's suspected that you have liver cancer, you can expect to go through the following process to care in Canada:



Questions to ask your doctor

Asking the right questions is an important step in taking charge of your liver health. Here are a few to help guide your conversations with your healthcare team:

- What type of liver cancer do I have?
- What stage is my cancer?
- Has the cancer spread outside the liver?
- What tests will I need next?
- What are the treatment options?
- How long will treatment last?
- Are there clinical trials I can join?
- How can I manage my symptoms?

Liver disease affects 1 in 4 Canadians. From newborns to older adults. It can impact anyone, at any stage of life.

Liver Canada was first established in 1969 out of the passion and concern of a group of business leaders and doctors who believed that liver disease needed a champion. Since then, we've relentlessly driven advancements in research, treatment, and support.

With the help of donors, volunteers, researchers, health professionals, corporate supporters, and community members, we are changing the future of liver health for those living in Canada.

To help fund liver health support services, education and research, visit: liver.ca/ways-to-give.

Follow us on Facebook, Instagram, and LinkedIn!
@LiverCanada

National Office:

101-3100 Steeles Ave East
Markham, ON, L3R 8T3

Email: clf@liver.ca

Toll Free Help Line: 1-800-563-5483

Website: liver.ca

