CONDITION

Liver cancer

Liver cancer is cancer that begins in the liver's cells or bile ducts.

WHAT IT IS
Cancer beginning in liver cells or nearby bile ducts

BODY SYSTEM
Digestive system

MAIN SYMPTOMS
Weight loss, upper abdominal pain, jaundice, reduced appetite

WHAT CAUSES IT
Cell changes, often linked to long-term liver damage

HOW IT IS DIAGNOSED
Contrast CT or MRI, sometimes biopsy

MAIN TREATMENT
Surgery, transplant, local procedures, radiation, or cancer medicines

CAN IT BE CURED?
Sometimes - when found and treated early

IS IT AN EMERGENCY?
Sometimes - sudden severe pain or fainting

LONG-TERM OUTLOOK
Better when small, localised, and liver function remains good

Overview

Liver cancer begins when cells in the liver grow out of control. The liver helps process nutrients, remove harmful substances from the blood, make bile for digestion, and produce proteins needed for blood clotting.

The most common primary liver cancer is hepatocellular carcinoma , often shortened to HCC. It starts in the main liver cells, called hepatocytes. Another type, intrahepatic cholangiocarcinoma , starts in the small bile ducts within the liver. Bile ducts are tubes that carry bile from the liver.

Cancer that starts elsewhere and spreads to the liver is not primary liver cancer. For example, bowel cancer that reaches the liver is still treated as bowel cancer. This distinction matters because the tests, treatments, and outlook can be different.

Liver cancer often develops in a liver already affected by cirrhosis. Cirrhosis means long-term scarring that reduces how well the liver works. Treatment therefore has to consider both the cancer and the health of the remaining liver.

Early liver cancer may cause no symptoms. Regular surveillance can sometimes find it sooner in people with a high risk.

Symptoms

Symptoms often appear only after the cancer has grown or affected liver function. Having these symptoms does not mean you have liver cancer, because many other conditions can cause them.

Possible symptoms include:

People who already have cirrhosis may notice that previously stable symptoms become worse. This can include increasing abdominal swelling, confusion, jaundice, or reduced strength.

These changes need medical assessment, but they are not always caused by cancer.

- Unexplained weight loss or loss of appetite
- Pain, discomfort, or a feeling of fullness under the right ribs
- A lump or swelling in the upper abdomen
- Feeling unusually tired or weak
- Nausea or vomiting
- Yellow skin or eyes, known as jaundice
- Dark urine or pale stools
- Itchy skin
- A swollen abdomen caused by fluid, known as ascites
- Bruising or bleeding more easily

Causes and risk factors

Liver cancer develops when genetic material inside a liver cell changes and allows the cell to grow without normal control. It is not always possible to identify why this happens.

HCC is strongly associated with long-term liver inflammation or scarring. Important risk factors include:

Hepatitis B can lead to liver cancer even without cirrhosis. Treating hepatitis B or curing hepatitis C lowers the risk, although it may not remove it completely once advanced scarring is present.

Intrahepatic bile duct cancer has different risk factors. These include long-term bile duct inflammation, some bile duct abnormalities, certain liver fluke infections, and cirrhosis. Many people diagnosed with it have no clear risk factor.

Liver cancer is not contagious. It cannot be passed between people, although hepatitis viruses that increase the risk can spread in specific ways.

- Cirrhosis from any cause
- Long-term hepatitis B infection
- Long-term hepatitis C infection
- Alcohol-related liver damage
- Metabolic dysfunction-associated steatotic liver disease, involving excess liver fat linked with metabolic health problems
- Certain inherited liver conditions, such as haemochromatosis
- Exposure to aflatoxins, toxins produced by mould that can contaminate poorly stored food
- Smoking

Diagnosis

Diagnosis usually begins with a medical history, physical examination, and blood tests. Blood tests can check liver function, blood clotting, blood cell counts, and kidney function.

A blood test may measure alpha-fetoprotein , or AFP. Some liver cancers raise AFP, but many do not. Other conditions can also raise it, so AFP cannot confirm or exclude liver cancer by itself.

Imaging is central to diagnosis. An ultrasound may first find a liver lump. A contrast-enhanced CT or MRI scan then shows how the lump takes up and releases contrast material. In someone with cirrhosis or another recognised risk factor, HCC can sometimes be confirmed from its characteristic appearance without a biopsy.

A biopsy removes a small tissue sample for examination under a microscope. It may be needed when the scan is not conclusive, when bile duct cancer is suspected, or when knowing the exact cell type will guide treatment. Biopsy is not necessary in every case.

Further scans may check whether the cancer involves major blood vessels, lymph nodes, or other organs. The assessment also considers:

Portal hypertension means increased pressure in the veins carrying blood through the liver. These details help the specialist team determine the cancer's stage and which treatments may be suitable.

- The number and size of tumours
- Where they are within the liver
- Whether nearby blood vessels are involved
- How well the liver is working
- Your general health and daily activity
- Whether cirrhosis or portal hypertension is present

Treatment and management

Treatment is usually planned by a team that may include liver surgeons, cancer specialists, liver physicians, radiologists, and specialist nurses. The plan is based on the cancer type and stage, liver function, general health, and your preferences.

Surgery may remove the part of the liver containing the cancer. This is called liver resection or partial hepatectomy. It is most suitable when the cancer is localised and enough healthy liver can remain.

Liver transplantation removes the whole liver and replaces it with a donor liver. It can treat both selected early cancers and the underlying cirrhosis. Transplantation is only possible when the cancer and overall health meet specific criteria, and access also depends on a suitable donor organ.

Ablation destroys a tumour without removing it. A doctor places a needle into the tumour, usually using ultrasound or CT guidance, and applies heat or another form of energy. It is mainly used for smaller tumours and can sometimes be intended to cure.

Embolization treatments deliver therapy through the liver's blood vessels. Transarterial chemoembolization combines blockage of the tumour's blood supply with chemotherapy. Radioembolization delivers tiny radioactive beads. These treatments may control cancer within the liver or act as a bridge while someone waits for another treatment.

Radiation therapy , including highly focused techniques, may treat selected tumours or relieve symptoms.

Systemic treatment reaches cancer throughout the body. It may include immunotherapy, which helps the immune system recognise cancer, targeted medicines that interfere with cancer growth signals, or chemotherapy. The choice differs between HCC and bile duct cancer.

Supportive and palliative care can be provided alongside cancer treatment at any stage. It helps manage pain, nausea, appetite changes, fatigue, itching, abdominal fluid, and emotional stress. It does not mean that other treatment has stopped.

Complications

Liver cancer can reduce the amount of working liver tissue or block blood vessels and bile ducts. Possible complications include:

Rarely, a liver tumour can rupture and bleed into the abdomen. This may cause sudden severe abdominal pain, dizziness, weakness, or fainting and requires emergency care.

Treatment can also cause complications. These differ by treatment but may include infection, bleeding, temporary worsening of liver function, fatigue, skin reactions, digestive symptoms, or immune-related inflammation. Your treatment team should explain what to watch for before treatment begins.

- Jaundice from reduced bile flow
- Ascites, causing abdominal swelling
- Bleeding from enlarged veins in the digestive tract
- Hepatic encephalopathy, meaning confusion caused by reduced liver function
- Blood-clotting problems
- Infection in abdominal fluid
- Spread to the lungs, bones, lymph nodes, or other areas
- Pain or weakness caused by advanced cancer

Prevention

Not every liver cancer can be prevented. Some people develop it without a known cause, and inherited or structural bile duct conditions cannot be removed through lifestyle changes.

Steps that can reduce some important risks include:

Medicines for hepatitis B can suppress the virus, and treatment can cure most hepatitis C

infections. Risk may remain in people with cirrhosis, so follow-up may still be needed.

Surveillance does not prevent cancer, but it aims to find it earlier. People at sufficiently high risk are often offered liver ultrasound, sometimes with an AFP blood test, about every six months. Surveillance is not recommended for everyone, so eligibility is based on the cause and severity of liver damage.

- Receiving hepatitis B vaccination when recommended
- Avoiding sharing needles or equipment that may carry blood
- Being tested and treated for hepatitis B or C when appropriate
- Limiting or avoiding alcohol to reduce further liver damage
- Working toward a sustainable weight if excess liver fat is present
- Not smoking
- Following treatment and monitoring plans for chronic liver conditions

Living with it and what to expect

The course of liver cancer is different for each person. The main influences are whether the cancer is confined to the liver, whether it can be removed or destroyed, and how well the remaining liver functions.

Some early cancers can be treated with the aim of cure. Follow-up scans and blood tests remain important because liver cancer can return or a new tumour can develop in the damaged liver. The timing of follow-up is based on the treatment received and your specialist plan.

After a liver resection, the remaining liver can grow larger over time, but this does not always restore normal function if cirrhosis is present. After a transplant, lifelong anti-rejection medicine and regular monitoring are usually needed.

When cure is not possible, treatment may slow growth, reduce symptoms, and help maintain day-to-day function. Treatment may change over months or years as scans, liver function, side effects, and personal priorities change.

Fatigue, appetite changes, discomfort, and uncertainty can affect work, relationships, sleep, and mood. Practical support may include help from a dietitian, specialist nurse, pain team, counsellor, social worker, or palliative care service. Avoid starting supplements or herbal remedies without checking them, because some can damage the liver or interact with cancer treatment.

When to get medical help

Arrange a medical appointment if you develop unexplained weight loss, persistent loss of appetite, a new upper abdominal lump, ongoing pain under the right ribs, jaundice, or increasing abdominal swelling. These symptoms have many possible causes, but they should be assessed.

If you already have cirrhosis or liver cancer, contact your care team promptly about a clear change in symptoms, worsening jaundice, new confusion, fever, reduced urine output, or rapidly increasing abdominal swelling.

Seek emergency help for:

Follow the urgent-contact instructions given by your cancer team for fever or serious side effects during treatment.

- Sudden severe abdominal pain with dizziness or fainting
- Vomiting blood or passing black, tar-like stools
- Severe confusion, extreme drowsiness, or difficulty waking
- Severe breathing difficulty
- Collapse or signs of major bleeding

Common questions

Is liver cancer curable?

Sometimes. Surgery, liver transplantation, or ablation can cure selected early cancers. Whether this is possible depends on the cancer's size and location, whether it has spread, and how well the liver is working.

How long can you live with liver cancer?

There is no single answer. Outlook is generally better when the cancer is small, confined to the liver, and suitable for treatment intended to cure. Advanced cancer and severe liver failure make treatment more difficult. Population survival figures cannot predict one person's course.

Does liver cancer cause pain?

It can cause a dull ache, pressure, or fullness under the right ribs or in the upper abdomen. Some people have no pain, especially early on. Sudden severe pain with dizziness or fainting needs emergency assessment.

Can a blood test detect liver cancer?

No blood test can diagnose it on its own. AFP may be raised, but it can be normal in liver cancer or raised for other reasons. Diagnosis usually relies on contrast-enhanced CT or MRI, with a biopsy in some cases.

Is liver cancer the same as cancer that has spread to the liver?

No. Primary liver cancer begins in the liver. Metastatic cancer begins elsewhere and spreads there. A bowel cancer deposit in the liver, for example, is treated as bowel cancer rather than primary liver cancer.

Can the liver grow back after cancer surgery?

The remaining liver can enlarge after part of it is removed. How well it recovers depends on the amount and health of the liver left behind. Cirrhosis can limit this ability.

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