National Comprehensive Cancer Network®

2026

NCCN Guidelines for Patients®

Cancer care recommendations from leading experts at the National Comprehensive Cancer Network® (NCCN®)

Liver Cancer



Made possible by National Comprehensive Cancer Network® Foundation

Available online at NCCN.org/patientguidelines



NCCN Guidelines for Patients®

The essential guide for people facing cancer.

Based on care recommendations from leading cancer experts.

Explains high-quality cancer care provided at state-of-the-art cancer centers.

Reviewed and revised every year.

Did you know that top cancer centers across the United States work together to improve cancer care? This alliance of leading cancer centers is called the National Comprehensive Cancer Network® (NCCN®).

Because cancer care is always evolving, NCCN develops and frequently updates evidence-based cancer care recommendations used by health care providers worldwide. These recommendations are known as the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®).

The NCCN Guidelines for Patients plainly explain these expert recommendations, so you can talk with your care team about the best care for you.

These NCCN Guidelines for Patients are based on the NCCN Guidelines® for Hepatocellular Carcinoma, Version 1.2026 — March 10, 2026

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1
About liver cancer

5 What is liver cancer?

6 Is there more than one type of liver cancer?

7 What causes liver cancer?

8 How is liver cancer treated?

8 How can I get the best care?

You've been told you may have, or already have, liver cancer. This is a scary and stressful time. What is liver cancer anyway? This chapter explains what liver cancer is and how it works.

What is liver cancer?

Liver cancer is a disease where cells in the liver multiply and grow out of control.

The liver is a large organ located on the right side of the body under the rib cage. It filters blood, helps with blood clotting, makes bile, breaks down fats, and helps process sugar for energy.

The liver also produces lymph. Lymph gives cells water and food and contains white blood cells that fight germs.

Cancer cells don't behave like normal cells. They develop genetic changes that allow them to multiply and make many more cancer cells. Cancer cells crowd out and overwhelm normal cells.

Cancer cells also survive much longer than normal cells do. They can replace many normal cells and cause organs to stop working properly. This can end up harming the body.

If the liver stops working properly, then one symptom a person might notice is a yellowing of their skin and eyes, called jaundice. This is a direct result of a buildup of bilirubin in the body, which the liver normally filters out.

Cancer that starts in the liver is called primary liver cancer.

However, if someone has lung cancer that spreads to the liver, that's still considered lung cancer.



Cancer cells can also spread outside of the liver and form tumors in other areas of the body. This is called metastatic liver cancer.

Is there more than one type of liver cancer?

Cancer that starts in the liver is called primary liver cancer. There's more than one type of primary liver cancer in adults.

Hepatocellular carcinoma

The most common type is hepatocellular carcinoma (HCC), which is cancer of the liver cells. HCC, or liver cancer, is the focus of this guide.

Signs and symptoms of liver cancer include:

- Abdominal pain
- Abdominal swelling or mass
- Fatigue
- Fluid in the abdomen
- Jaundice (yellowing of the skin and eyes)
- Weight loss

Fibrolamellar hepatocellular carcinoma

There is a very rare form of liver cancer previously considered a subtype of HCC called fibrolamellar hepatocellular carcinoma (FLHC). More recently, it's been called fibrolamellar carcinoma (FLC).

This type of liver cancer affects very few people and usually occurs in adolescents or young adults. While some treatments are the same as for HCC, risk factors, decisions about surgery, and drug-based treatments may be very different.

Intrahepatic cholangiocarcinoma

The second most common type of liver cancer in adults is called intrahepatic cholangiocarcinoma, which is cancer of the bile ducts. The signs and symptoms of intrahepatic cholangiocarcinoma are similar to those of liver cancer, but the tumor located in the bile ducts, which are a spider web of ducts inside of the liver.

More information on gallbladder and bile duct tumors is available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.



Metastatic cancer to the liver

Sometimes, another type of cancer spreads to the liver. This is called secondary cancer, or metastatic cancer. For example, cancer that starts in the intestines (colon) and spreads to the liver is called metastatic colon cancer to the liver. But it's still colon cancer, not liver cancer.

What causes liver cancer?

Cancer researchers don't know what causes liver cells to grow out of control (become cancerous). But several factors are linked to a higher risk of liver cancer. These are called risk factors. A risk factor is anything that increases your chance of getting cancer.

Risk factors don't necessarily cause liver cancer. You can have liver cancer without having any of the risk factors. But having one or more of the following risk factors raises your chances of getting liver cancer:

- **Age** – Risk of liver cancer increases with age because liver damage can accumulate over time.
- **Alcohol use** – Heavy and long-term alcohol use can cause cirrhosis, which in turn is a risk factor of liver cancer.
- **Weight** – The higher the body mass index (BMI) and the larger the waist size, the more likely a person is to get liver cancer.
- **Genetics** – Some cancers run in families. Tell your care team if your family has a history of liver cancer.
- **Hepatitis** – Having hepatitis B or C virus increases your risk of liver cancer.

Guide 1 shows more specific risk factors. Cirrhosis, which is scarring of the liver from repeated damage, sometimes from alcohol use, is mentioned as one particular risk factor.

Guide 1
Risk factors of liver cancer

- Family history of liver cancer
- Too much iron in the body (hemochromatosis)
- Obesity
- Hepatitis B virus or infection
- Men born in Asia, aged 40 years and over
- Women born in Asia, aged 50 years and over
- Any adult born in an African nation

For people with cirrhosis, these additional risk factors apply:

- Hepatitis C virus or infection
- Alcohol use
- Non-alcoholic steatohepatitis (NASH), also known as non-alcoholic fatty liver disease (NAFLD)

How is liver cancer treated?

If liver cancer is identified very early, procedures such as surgery or a liver transplant can lead to cure. Unfortunately, the average case is more advanced.

Although there's no cure for liver cancer, several treatments can reduce symptoms and help you live longer.

However, before treatment can begin, you'll have numerous tests to diagnose your particular type of cancer. See *Chapter 2: Testing for liver cancer.*

The most common treatments for most cases of liver cancer are surgery; liver transplant; radiation therapy; and drug therapy, such as chemotherapy or immunotherapy. For more information about these and other treatments, see *Chapter 3: Types of treatment.*

Liver cancer that spreads to different areas of the body needs more intensive treatment. See *Chapter 6: Metastatic liver cancer.*

How can I get the best care?

Advocate for yourself. You have an important role to play in your care. Many people feel more satisfied when they actively take part in planning their cancer care.

The NCCN Guidelines for Patients will help you play a larger role in your care. Discuss the recommendations in this guide with your care team. Ask questions about your options and share your goals and concerns.

How this guide can help you

Making decisions about cancer care is stressful. There's a lot to learn, and you don't know what the future holds.

Use this guide to get the information and support you need.

Patients, doctors, and other health care professionals trust the NCCN Guidelines for Patients. This guide uses clear, everyday language to explain current cancer care recommendations made by respected experts in the field. Their recommendations are based on the latest research and practices at leading cancer centers.

Your health is unique to you, so your cancer care should be, too. As you read this guide, you'll learn which treatments are likely to provide the best results for you. And you'll be better prepared to talk with your care team

Don't know what to ask? You're not alone. That's why we include suggested questions to ask at the end of chapters.

Keep reading to find the best care for you.

2
Testing for liver cancer

10 Imaging tests

12 General health tests

13 Blood tests

14 Child-Turcotte-Pugh class

15 Biopsy

16 Performance status

16 Test results

17 Key points

17 Questions to ask

Liver cancer is confirmed with imaging tests. Sometimes, a biopsy is also needed. Tests are also done to plan treatment. This chapter presents an overview of the tests you might receive and what to expect.

To diagnose liver cancer, you'll first receive imaging tests.

Imaging tests

Imaging tests take pictures of the inside of your body. After you have imaging, a radiologist, an expert in interpreting imaging tests, will write a report and send it to your health care provider.

The report may be sent to you through your patient portal or access system.

You should discuss these results with your care team.

Contrast material

Contrast material is used to improve imaging pictures. Contrast materials are not dyes. They're substances that help enhance and improve the images of organs and structures in the body.

The contrast isn't permanent and will leave the body in your pee immediately after the test. The types of contrast vary and are different for CT and MRI.

Contrast might not be used if you have a serious allergy or if your kidneys aren't working well. Tell your care team if you've had allergic reactions to contrast in the past. You might be given medicine to avoid the effects of allergies.

CT scan

A CT scan uses x-rays and computer technology to take pictures of the inside of the body. It takes many x-rays of the same body part from different angles. All of the images are combined to make a series of detailed cross-sectional images of the body.

A CT scan of your chest, abdomen, and/or pelvis may be needed to check for liver cancer. In most cases, contrast will be used.

Some people refer to this test as a CAT scan. Either name is correct.

Multiphasic CT scan

A multiphasic CT scan starts without contrast. Then contrast is added, and multiple sets of pictures are taken as the contrast moves through the arteries and veins of the liver.

This allows your care team to see where the tumor is in the liver and if it involves any veins, arteries, or other organs.

MRI scan

An MRI scan uses radio waves and powerful magnets to take pictures of the inside of the body. It doesn't use x-rays or radiation and is painless.

Because the MRI machine uses very strong magnets, tell the technologist if you have any metal in your body. You'll probably need to undress completely and wear a robe in the scanning room.

During the test, you'll likely be asked to hold your breath for 10 to 20 seconds as the technician collects the images. Contrast is often used. A scan taken with and without contrast is called a dynamic MRI.

The most common type of MRI machine, a closed MRI, has a capsule-like design where the magnet surrounds you. There are open MRIs, which have a magnetic top and bottom and an opening on each end.

Closed MRIs are more common than open MRIs, so if you're afraid of enclosed or tight spaces (claustrophobia), be sure to talk to your care team about it. A mild relaxant/sedative can be given to some patients with claustrophobia to help them tolerate the MRI scan.

MRIs are also loud. Ask the scanning team for earplugs or headphones to help with the noise. Sometimes they might play music inside of the machine. You can ask for a blanket or cushions to make yourself more comfortable during the scan.

The MRI technicians can talk to you through an intercom inside of the machine. You'll also be able to signal to the scanning team with a button if you need help.

PET scan

A PET scan uses a radioactive substance called a tracer. The tracer is injected into a vein to show where cancer spots might be in the body. It harmlessly comes out of the body in your pee within 24 hours.

The tracer causes cancer to show up as bright spots on PET scans. However, not all tumors appear on a PET scan, and not all bright spots are cancer. It's typical for the brain, heart, kidneys, and bladder to be bright on the PET scan.

Inflammation or infection can also show up as a bright spot.

When a PET scan is combined with CT, it's called a PET/CT scan.

CT machine

A CT machine is large and has a tunnel in the middle. During the test, you will lie on the table that moves slowly through the tunnel.



Bone scan

Liver cancer can spread to the bones. A bone scan involves giving a mildly radioactive material through a vein that can identify abnormal regions in the bone.

Areas of bone damage show up as bright spots in the pictures. Bone damage can be caused by cancer, cancer treatment, previous injuries, or other health issues.

Ultrasound

An ultrasound uses high-energy sound waves to form pictures of the inside of the body. It's like a sonogram used during pregnancy. A wand-like probe (transducer) is moved on your skin. A member of your health care team will prepare your skin with gel beforehand.

Sometimes you'll receive small injections of harmless gas into your blood, which is then used as contrast for the ultrasound. This is usually recommended for diagnosing liver cancer.

Otherwise, ultrasound is painless. It doesn't use radiation like x-rays, so it can be repeated as needed. It's also good at showing small areas of cancer that are near the skin. Sometimes, an ultrasound is used to guide a biopsy.

General health tests

If liver cancer is found on imaging tests, you'll receive the tests listed in **Guide 2** to plan your treatment.

Medical history

A medical history, sometimes called a health history, will help determine which treatment is best for you.

A medical history is a record of all health issues and treatments you've had in your life. Be prepared to list any illness or injury, and when it happened. Also, tell your care team about any symptoms you have.

Bring a list of your old and new medicines and any over-the-counter (OTC) medicines, herbal remedies, or supplements. Some supplements can affect medicines that your care team may prescribe.

Guide 2
Tests for treatment planning

Medical history, family history, and physical exam
Hepatitis panel
Complete metabolic panel
Prothrombin time or international normalized ratio
Complete blood count (CBC) and platelet count
Child-Turcotte-Pugh class
Biopsy
Tumor biomarker and mutation testing
Performance status

Family history

Some cancers and other diseases can run in families. Your health care provider will ask about the health history of family members who are blood relatives. This information is called family history.

Ask family members on both sides of your family about their health issues like heart disease, cancer, and diabetes, and at what age they were diagnosed.

You should find out the specific type of cancer or where the cancer started, if it's in multiple locations, and if they had genetic testing.

Physical exam

A member of your care team will perform a thorough physical exam of your body. This exam includes checking vital signs, such as heart rate and blood pressure. Your provider may also gently press on areas of your body, feeling for swollen organs or lymph nodes.

Blood tests

Blood tests check for signs of disease and how well organs are working. They require a sample of your blood, which is removed through a needle placed into your vein.

If you know your veins are difficult to find, let the lab tech know. They may be able to get a machine that will help find your veins. This way, you'll get fewer pokes from the needle, and it's less stressful.

Hepatitis panel

A hepatitis panel is a blood test that checks to see if you have a hepatitis infection. You may be referred to a hepatologist if you test positive. A hepatologist is a health care provider who specializes in care of the liver, biliary tract, gallbladder, and pancreas.

Hepatitis causes the liver to swell. When swollen, your liver might not work as it should. Viruses called hepatitis B and hepatitis C are the most common types of chronic (long-term) hepatitis.

Chronic hepatitis B and a current or past infection with hepatitis C increases the risk of liver cancer and biliary tract cancers. Hepatitis B can cause cirrhosis, liver failure, and cancer.

Comprehensive metabolic panel

A comprehensive metabolic panel (CMP) measures 14 substances in your blood, including blood urea nitrogen and creatinine. This test provides important information about how well your kidneys and liver are working.

Liver function panel

Liver function tests look at the health of your liver by measuring chemicals that are made or processed by the liver. Levels that are too high or too low signal that the liver isn't working well.

A liver function panel usually measures:

- Albumin
- Alkaline phosphatase
- Alpha-fetoprotein
- Aspartate aminotransferase and alanine transaminase
- Bilirubin

The liver produces the chemicals necessary for your blood to clot in response to an injury. Tests to measure how long it takes your blood to clot might be done, such as:

- International normalized ratio
- Prothrombin time

Some of these measurements are used to determine your Child-Turcotte-Pugh class.

Complete blood count

A complete blood count (CBC) measures the levels of red blood cells, white blood cells, and platelets in your blood. Red blood cells carry oxygen throughout your body, white blood cells fight infection, and platelets control bleeding.

Elevated white blood cells, as well as a reduction in red blood cells or platelets, can indicate infection or cancer.

Child-Turcotte-Pugh class

The Child-Turcotte-Pugh score measures the severity of liver disease, such as cirrhosis or liver cancer. This score helps your treatment team figure out how well your liver is working. This can help them decide what treatment is best.

The score is based on signs, symptoms, and blood test results. People with Child-Turcotte-Pugh class A have the lowest risk of complications or death from surgery.

In some cases, people with Child-Turcotte-Pugh class B might be recommended for surgery.

If you're at high risk of liver cancer, CT or MRI findings may be enough to make the diagnosis. So, a biopsy may not be needed.

People with Child-Turcotte-Pugh class C aren't recommended for surgery as often, unless it's a liver transplant, since they have the most severe disease of the 3 classes.

"A common myth is that palliative care is only for terminally ill patients. They are so much more! It is worth reaching out to palliative care in your hospital or clinic. They treat the whole patient, not just cancer."

Biopsy

A biopsy is a procedure that removes samples of fluid or tissue from your body. These samples are then used to diagnose cancer. Biopsy procedures are typically outpatient procedures, allowing most patients to go home the same day.

You will not be put to sleep completely but may receive a mild sedative to put you at ease.

Types of biopsies include:

- **Core needle biopsy** removes tissue samples with a hollow needle about the same size as a needle used for an IV line. An ultrasound or CT scan may help the radiologist find the area to biopsy.
- **Fine-needle aspiration** uses a thin needle to remove a sample of tissue or fluid. An ultrasound may guide the biopsy.

The biopsy samples will be sent to a pathologist, an expert in examining cells under a microscope to find disease.

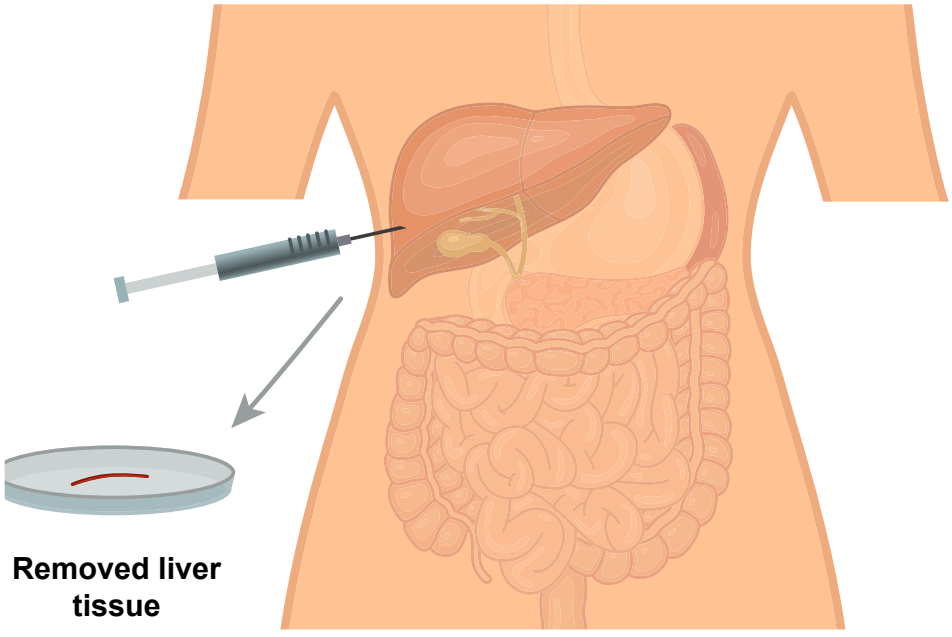
The pathologist will test the sample to look for biomarkers or proteins. This information, called tumor biomarker testing, is used to choose the best treatment for you.

Tumor biomarker testing

Biomarkers are any chemical, substance, or other sign in your body that can be measured to assess your health. Cancer antigen 19-9, carcinoembryonic antigen, and alpha-fetoprotein (AFP) are examples of tumor biomarkers that can be detected in the blood.

These tumor biomarkers can help with diagnosis and keeping track of cancer growth. They can also be used to determine appropriate targets for targeted therapy, described in the next chapter.

A biopsy is a procedure that removes samples of fluid or tissue from your body. These samples are then used to diagnose cancer.



Removed liver tissue

Tumor mutation testing

A sample of the tumor from your biopsy or blood may be tested to see if the cancer cells have any specific mutations. Some mutations, such as NTRK and RET gene fusions or microsatellite instability-high (MSI-H)/mismatch repair deficient (dMMR) mutations, can be targeted with specific therapies.

Tumor mutation testing is separate from genetic testing for mutations that you may have inherited from your biological parents. Currently, genetic testing isn't required for liver cancer treatment.

Performance status

Performance status is a measure of a person's general level of fitness and ability to perform daily tasks. The most common system (Eastern Cooperative Oncology Group) assigns a number between 0-4, with 0 being the highest level of functioning and 4 being the lowest.

Performance status is a factor taken into consideration when choosing a treatment plan. If you have a lower performance status, you might not receive certain treatments, such as surgeries, unless your status improves with other treatments like medication. However, your preferences about treatment are also important.

Test results

If your biopsy shows liver cancer and your performance status is very good, then you'll be prepared for surgery.

Understanding what the tests and their results mean is important. Don't be afraid to ask your care team questions. Online patient portals are also a great way to access your test results.



Let us know what you think!

Please take a moment to complete an online survey about the NCCN Guidelines for Patients.
NCCN.org/patients/response

Key points

- Tests are used to find cancer, plan treatment, and check how well treatment is working.
- A medical history and physical exam inform your care team about your overall health.
- Blood tests check for signs of disease and how well organs are working.
- Imaging tests take pictures of the inside of your body. Liver cancer is usually confirmed with imaging tests.
- Fibrosis score and Child-Turcotte-Pugh class are used to see how well your liver is working, help decide if surgery is an option, and plan treatment.
- A biopsy removes a sample of tissue or fluid.
- Performance status is a person's general level of fitness and ability to perform tasks.

Questions to ask

- What tests will I have? How often will they be repeated?
- Will my insurance pay for the tests?
- How soon will I know the results and who will explain them to me?
- What will you do to make me comfortable during testing?

What's next?

Once you've received your complete diagnosis and you've discussed the treatment plan with your care team, you'll go to treatment. The next chapter describes each NCCN-recommended treatment in detail.

3
Types of treatment

19 Care team

20 Surgery

22 Liver transplant

23 Bridge therapy

26 Drug therapy

27 Clinical trials

28 Supportive care

28 Survivorship

29 Side effects

30 Key points

31 Questions to ask

There's more than one treatment for liver cancer. Sometimes, you'll have multiple treatments at different times. This chapter describes NCCN-recommended treatment options and what to expect.

Liver cancer is treatable. You should have regular talks with your care team about your goals for treatment and your treatment plan. If possible, seek treatment at a hospital or cancer center that specializes in liver cancer.

There are many treatment options for liver cancer. But there are 2 basic methods for treatment:

- **Local therapy** focuses on a particular area of the body. It includes surgery, ablation, direct therapy, and radiation therapy.
- **Systemic drug therapy** works throughout the body. For liver cancer, this includes drug therapies, such as targeted therapy and immunotherapy.

Treatment can be local, systemic, or a combination of both. Many factors play a role in how your cancer responds to treatment.

Care team

Treating liver cancer takes a team approach. Treatment decisions should involve a multidisciplinary team.

Your care team is a group of health care and psychosocial care professionals from different professional backgrounds who have knowledge and experience in your type of cancer.

This team is united in planning and implementing your treatment. Ask who will coordinate your care.

Some members of your care team will be with you throughout cancer treatment, while others will only be there for parts of it. Get to know your care team and help them get to know you.

You know your body better than anyone. Help other team members understand:

- How you're feeling
- What you need
- What's working and what isn't

Keep a list of names and contact information for each member of your team. This will make it easier for you and anyone involved in your care to know whom to contact with questions or concerns.



Team approach

Depending on your diagnosis, your team might include the following specialists:

A hepatologist is an expert in diseases of the liver, gallbladder, bile ducts, and pancreas.

A diagnostic radiologist interprets the results of imaging tests.

An interventional radiologist performs needle biopsies, ablations, and direct therapies and places ports for treatment.

A pathologist analyzes the cells, tissues, and organs removed during a biopsy or surgery and provides cancer diagnosis, staging, and information about biomarker testing.

A surgical oncologist performs operations to remove cancer. Some transplant surgeons and hepatobiliary surgeons also care for those with liver cancer.

A medical oncologist treats cancer using drug therapies.

A radiation oncologist prescribes and delivers radiation therapy to treat cancer.

An anesthesiologist gives anesthesia, a medicine so you do not feel pain during surgery or procedures.

Surgery

Surgery is often the main treatment to remove cancer from the liver. It can also be used to ease pain or discomfort, called palliative surgery.

When preparing for surgery, seek the opinion of an experienced surgeon. Hospitals that perform many surgeries often have better results. You can ask for a referral to a hospital or cancer center that has experience in treating liver cancer.

Surgery is based on the safest and best way to remove cancer. Cancer removal through surgery can be done in different ways, depending on the specific circumstances. Tumors in hard-to-reach locations or particularly large tumors might not be removable by surgery.

You might have more than one surgery. You might also have a temporary wound drain to prevent fluid from collecting in your body after surgery.

Goal of surgery

The goal of surgery, or tumor resection, is to remove all of the cancer. To do so, the tumor is removed along with a rim of normal-looking tissue around its edge, called the surgical margin.

The surgical margin may look normal during surgery, but cancer cells may be found when viewed under a microscope by a pathologist. Or cancer cells may be found after testing. In both cases, it's called a positive margin. You may need another surgery to try to remove the remaining tumor cells.

A clear or negative margin is when no cancer cells are visible in the tissue around the edge of the tumor, and no cancer cells are found after testing.

Tumor removal

Surgically cutting out the tumor is called tumor removal, or tumor resection. You will have imaging tests to see if your cancer can be removed by surgery (resectable) or cannot be removed (unresectable).

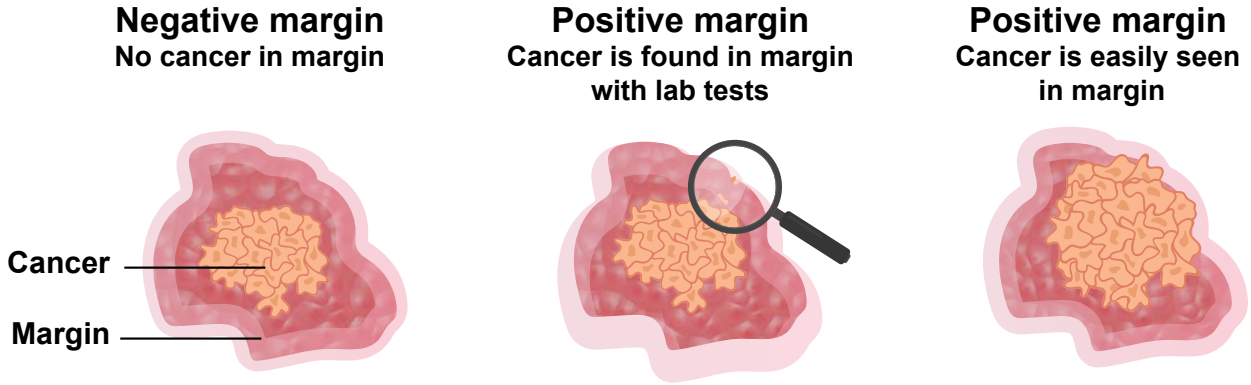
Partial liver removal

A partial liver removal (hepatectomy) is different from a liver transplant. It's removing a portion of the liver, perhaps a small piece or an entire lobe.

After surgery, the part of the liver that remains will keep working, and the missing section will regrow.

Surgical margin

The tumor will be removed, along with some normal-looking tissue around its rim. The normal-looking tissue is called the surgical margin. The surgical margin will be tested for cancer. Postoperative therapy will be based on if there is cancer in the margins.



Liver transplant

In a liver transplant, the entire liver is removed and replaced with a healthy donor liver. The new liver may be donated by a person who recently died, or a section of the liver may be donated by a living person.

A liver transplant is based on certain size limits and tumor locations. If you receive a liver transplant, you'll also receive medicine to help prevent your body from rejecting the donor liver.

If you can't have a partial liver transplant due to the number of tumors, you might receive a complete liver transplant.

However, not everyone is a candidate to donate or receive a liver transplant. To qualify, specific requirements need to be met.

UNOS transplant requirements

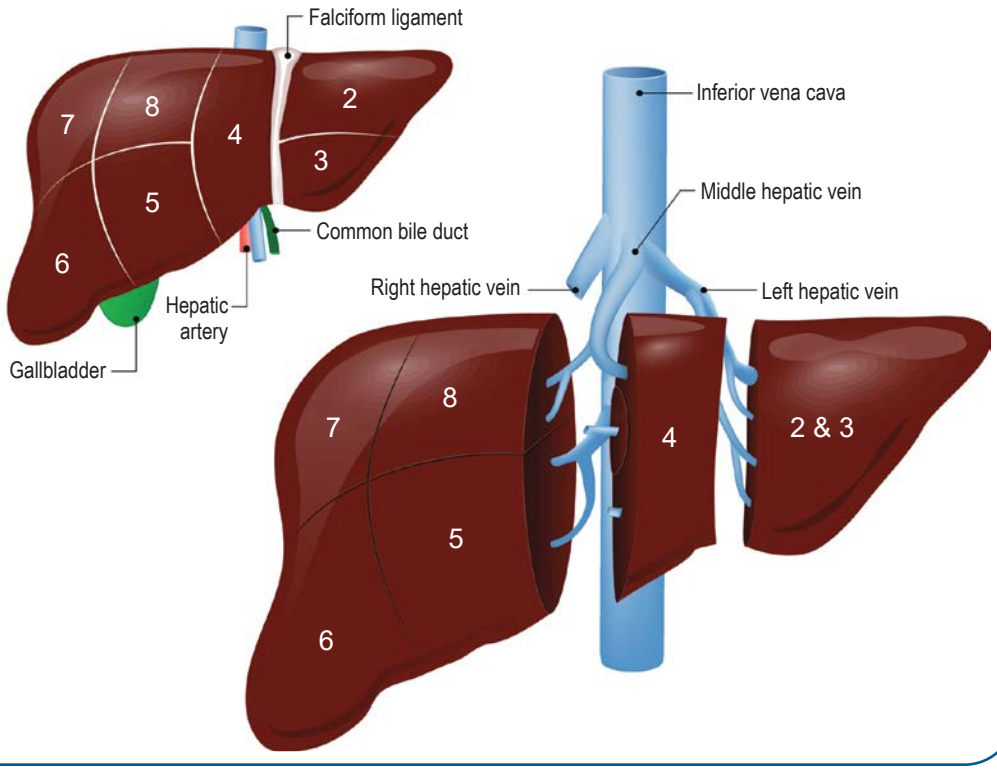
Requirements to qualify for a liver transplant are set by the United Network for Organ Sharing (UNOS), the non-profit organization that manages the organ transplant list in the United States.

UNOS requires you to have:

- An alpha-fetoprotein (AFP) level of 1,000 ng/mL or less
- A single tumor of 5 cm or less (the size of a lime), or 2 or 3 tumors each 3 cm or less (the size of a grape)
- A tumor that isn't located in a large vein, artery, or bile duct
- Cancer confined to the liver

Liver sections

The liver is divided into 7 sections or segments based on the location of the portal vein, hepatic vein, and bile ducts.



- An adequate Model for End-Stage Liver Disease (MELD) score demonstrating your need for a liver

Exceptions to these requirements are sometimes made at select transplant centers.

MELD requirements

The poorer the liver function, the higher the MELD score. The person with the highest MELD score is at the top of the transplant list.

A MELD score shows UNOS how much a person needs a transplant, based on 5 blood tests:

- Total bilirubin, a measure of jaundice
- Prothrombin time, a measure of clotting ability
- Creatinine, a measure of kidney function
- Serum sodium, a measure of how much sodium is in the bloodstream
- Albumin, a measure of liver and kidney function

You can calculate your MELD score using an online calculator and a copy of your latest blood test results. Your health care team will also do this for the transplant list.

Downstaging therapy

Downstaging therapy is used to reduce the number of tumors (tumor burden) in some people with more advanced liver cancer (without distant metastasis) who currently can't receive a transplant, with the goal of getting a transplant in the future.

Bridge therapy

A matching liver can take a while to find, so the transplant candidate might receive treatment while they wait.

These treatments are called bridge or bridging therapy and include ablation, arterially directed therapy (embolization), or radiation therapy.

Ablation

Ablation (uh·BLAY·shun) is a type of treatment that uses extreme heat with radio waves or microwaves, extreme cold, or chemicals, such as ethanol (a type of alcohol) or acetic acid, to destroy cancer cells.

You may already have had a mole or wart frozen off by your dermatologist or at home with an over-the-counter freezing solution. The principle is the same.

Ablation can destroy small tumors (3 cm or smaller, the size of a grape) with little harm to nearby tissue. Tumors must be in an area that can be reached by ablation and not near other major organs, blood vessels, or bile ducts.

Types of ablation include:

- **Thermal** – Uses heat generated by radio waves or microwaves to kill cancer cells. This type of ablation may not be appropriate for some tumors.
- **Cryoablation** – Freezes cancer cells with a very cold substance.
- **Chemical** – Uses ethanol or acetic acid injections to kill cancer cells.

Ablation can be done through the skin, through small cuts (laparoscopic), or using a large incision like in surgery (open approach).

All types of ablation use a special needle, called a probe, which is inserted into the tumor. The probe is guided into place with a CT scan, ultrasound, or other type of imaging. The probe is removed after the procedure.

Your care team will check the tumor size and location, and how well your liver is working, before doing this treatment. Typically, people with smaller tumors (3 cm or less) or in a location that is easy for the probe to reach (such as on the surface of the liver) are good candidates for this procedure.

Direct therapy

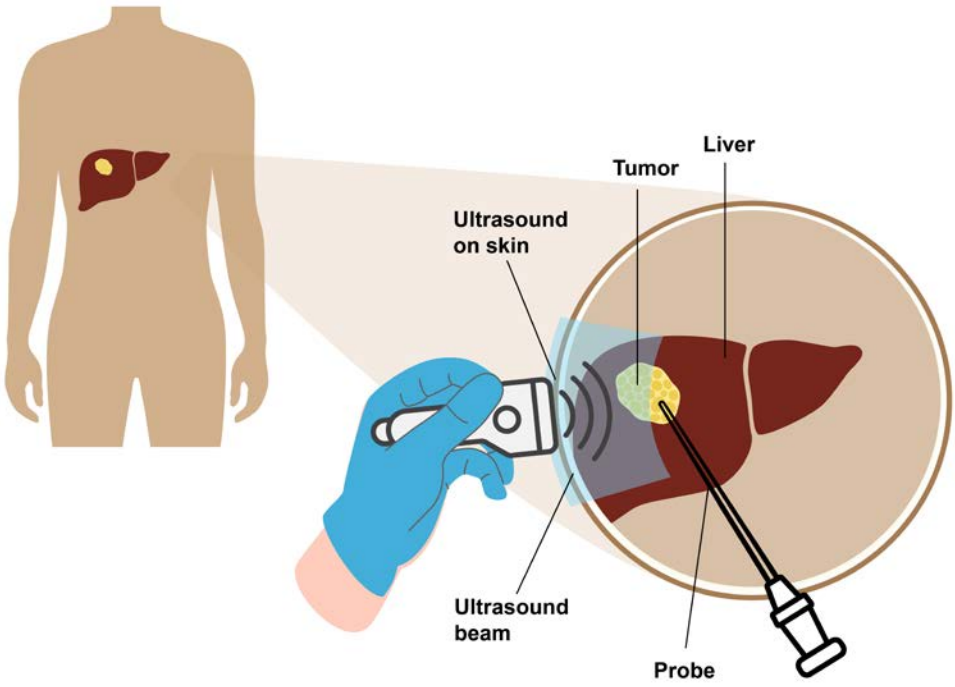
Direct therapy (also called arterially directed therapy) treats tumors by injecting particles, chemotherapy, or radioactive beads directly into the blood vessels that supply the tumor(s).

A small catheter is inserted into an artery and is guided to the tumor. Once in place, the particles, chemotherapy, or beads are injected. These treatments last a few days but act directly on the tumor's blood supply and can be effective in reducing the size of the tumor.

The common types of arterially directed therapy include:

- **Blocking blood flow (transarterial embolization)** involves injecting tiny particles into the blood vessels feeding the tumor(s). Stopping the blood flow cuts off the oxygen supply to the tumor and causes cancer cells to die.
- **Chemotherapy and blocking blood flow (transarterial chemoembolization)** involves injecting a chemotherapy mixture into the tumor to block the blood vessels connected to the tumor(s).

All types of ablation use a special needle, called a probe, which is inserted into the tumor. The probe is guided into place with a CT scan, ultrasound, or other type of imaging. The probe is removed afterward.



- **Chemotherapy beads (drug-eluting bead transarterial chemoembolization)** uses tiny particles loaded with chemotherapy that are injected into the blood vessels feeding the tumor(s). The particles give off small amounts of chemotherapy to the tumor over several days.
- **Radioactive beads (radioembolization)** uses tiny glass or resin beads filled with a radioactive substance that are injected directly into the tumor(s). This procedure is often referred to as Y-90.

Depending on the circumstances, direct therapy may be used as a primary treatment, as a bridging treatment before a liver transplant, or for relieving pain.

The type of direct therapy recommended depends on the size, number, and location of tumors, as well as your previous medical history and the expertise of your treating physicians.

Direct therapy has risks: It can cause liver function to worsen if the tumor's blood supply interferes with the liver's. It might not be used if your bilirubin level is above a certain number.

Radiation therapy

Radiation therapy uses high-energy x-rays, photons, protons, electrons, or other sources to kill cancer cells and shrink tumors. It can be given alone or with other treatments.

It might be used as supportive care or palliative care to help ease pain or discomfort caused by cancer, or to control bleeding caused by a tumor. Radiation therapy also may be a treatment for all liver tumors, regardless of location.

Most types of radiation include short treatment sessions that are given once daily over a few days to weeks. Ask your care team which radiation option(s) are best for you and what side effects to expect.

External beam radiation therapy

External beam radiation therapy uses a machine outside of the body to aim radiation at tumor(s) or areas inside of the body.

Common types that may be used to treat your cancer include:

- **Classic (3-dimensional) radiation therapy** uses high-energy x-ray radiation beams to kill the tumor. This can result in normal tissue also receiving radiation and may cause some side effects, depending on the location. Sometimes the liver can tolerate radiation. Ask your care team if yours can.
- **Shaped (intensity-modulated) radiation therapy (IMRT)** uses small beams of different strengths to match the shape of the tumor. This limits the amount of radiation to normal tissue.
- **Stereotactic body radiation (SBRT, or SABR)** is similar to IMRT and adds tracking technology to precisely target the tumor, reducing margins and radiation to normal tissue. It typically uses larger daily doses of radiation given fewer times.
- **Proton radiation** uses protons instead of x-rays. Protons interact differently with the body. Your care team may be able to control how the protons impact your body, allowing for less damage to healthy tissue in some situations.

Drug therapy

Drug therapy works throughout the body. It can be used alone or with other therapies. Drug therapies used for liver cancer include targeted therapy and immunotherapy.

Goals of drug therapy should be discussed before you start treatment. Your wishes about treatment are important. Make your wishes known.

For a list of some drug therapies, see **Guide 3.**

Targeted therapy

Targeted therapy focuses on specific or unique features of cancer cells. Targeted therapies seek out how cancer cells grow, divide, and move in the body. These drugs stop or inhibit the action of molecules that help cancer cells grow and/or survive.

Targeted therapies may be used to treat tumors that have certain gene mutations. Larotrectinib (Vitrakvi) and entrectinib (Rozlytrek) might be used to target cancer that has a change in the NTRK gene.

A biosimilar is an almost identical version of a drug made by another company. It's used in the same way and at the same dose as the original drug. Biosimilars for bevacizumab include Vegzelma, Mvasi, Zirabev, and Alymsys.

Immunotherapy

Immunotherapy is a type of systemic treatment that reactivates the immune system against tumor cells.

The immune system has many on and off switches. Tumors take advantage of off switches. Two leading off switches are PD-1 and CTLA-4. Immunotherapy for liver cancer turns these off switches back on.

Guide 3
Recommended drug therapies

Targeted therapy

- Bevacizumab (Avastin) or Bevacizumab substitutes (biosimilars), such as Vegzelma, Mvasi, Zirabev, and Alymsys
- Cabozantinib (Cabometyx)
- Entrectinib (Rozlytrek)
- Larotrectinib (Vitrakvi)
- Lenvatinib (Lenvima)
- Regorafenib (Stivarga)
- Repotrectinib (Augtyro)
- Selpercatinib (Retevmo)
- Sorafenib (Nexavar)

Immunotherapy

- Atezolizumab (Tecentriq)
- Dostarlimab-gxly (Jemperli)
- Durvalumab (Imfinzi)
- Ipilimumab (Yervoy)
- Nivolumab (Opdivo)
- Pembrolizumab (Keytruda)
- Tremelimumab-actl (Imjudo)

More information on immunotherapy side effects is available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.



Clinical trials

You might also obtain treatment through a clinical trial.

A clinical trial is a type of medical research study. After being developed and tested in a lab, potential new ways of fighting cancer need to be studied in people.

If found to be safe and effective in a clinical trial, a drug, device, or treatment approach may be approved by the U.S. FDA.

Everyone with cancer should carefully consider all of the treatment options available for their cancer type, including standard treatments and clinical trials. Talk to your health care provider about whether a clinical trial may make sense for you.

Phases

Most cancer clinical trials focus on treatment and are done in phases.

- Phase 1 trials study the safety and side effects of an investigational drug or treatment approach.
- Phase 2 trials study how well the drug or approach works against a specific type of cancer.
- Phase 3 trials test the drug or approach against a standard treatment. If the results are good, it may be approved by the FDA.
- Phase 4 trials study the safety and benefit of an FDA-approved treatment.

Who can enroll?

It depends on the clinical trial's rules, called eligibility criteria. The rules may be about age, cancer type and stage, treatment history, or general health. They ensure that participants are alike in specific ways and that the trial is as safe as possible for the participants.

Finding a clinical trial

In the United States

NCCN Cancer Centers
NCCN.org/cancercenters

The National Cancer Institute (NCI)
cancer.gov/about-cancer/treatment/clinical-trials/search

Worldwide

The U.S. National Library of Medicine (NLM)
clinicaltrials.gov

Need help finding a clinical trial?

NCI's Cancer Information Service (CIS)
1.800.4.CANCER (1.800.422.6237)
cancer.gov/contact

Informed consent

Clinical trials are managed by a research team. This group of experts will review the study with you in detail, including its purpose and the risks and benefits of joining. All of this information is also provided in an informed consent form. Read the form carefully and ask questions before signing it. Take time to discuss it with people you trust. Keep in mind that you can leave and seek treatment outside of the clinical trial at any time.

Will I get a placebo?

Placebos (inactive versions of real medicines) are almost never used alone in cancer clinical trials. It's common to receive either a placebo with a standard treatment, or a new drug with a standard treatment. You'll be informed, verbally and in writing, if a placebo is part of a clinical trial before you enroll.

Are clinical trials free?

There is no fee to enroll in a clinical trial. The study sponsor pays for research-related costs, including the study drug. But you may need to pay for other services, like transportation or childcare, due to extra appointments. During the trial, you'll continue to receive standard cancer care. This care is often covered by insurance.

Supportive care

Supportive care is an important part of cancer care. The goal is to improve your quality of life during and after cancer treatment. Supportive care is for everyone with cancer and their families, not just for those at the end of life. It's also known as palliative care.

Supportive care includes a wide range of services. Supportive care prevents or manages the symptoms of cancer and the side effects of cancer treatment, like pain and cancer-related fatigue. It also addresses the mental, social, emotional, and spiritual concerns faced by people with cancer.

Supportive care provides help with additional needs, such as:

- Making treatment decisions
- Coordinating your care
- Paying for care
- Planning for advance care and end of life



Read more about the types of support you may receive in *NCCN Guidelines for Patients: Palliative Care,* available at NCCN.org/patientguidelines and on the NCCN Patient Guides for Cancer app.

Survivorship

A person is a cancer survivor from the time of diagnosis until the end of life. When treatment leads to remission (no evidence of disease), you'll need follow-up or survivorship care for late effects.

During survivorship care, you'll still have a care team, but it'll look different. Seek out peer support groups, whether online or in person.

Side effects

All cancer treatments can cause unwanted health issues called side effects. Side effects depend on many factors. These factors include the drug type and dose, length of treatment, and the person.

Treatment can cause several side effects. Some side effects are very serious and may be harmful to your health. Others may just be unpleasant. You'll be monitored closely for side effects.

Ask for a complete list of side effects for each treatment. Tell your treatment team if you have any new or worsening symptoms. There may be ways to help you feel better. There are also ways to prevent some side effects.

Late effects

Late effects are side effects that occur months or years after a disease is diagnosed or after treatment has ended. Late effects may be caused by cancer or cancer treatment.

They may include physical, mental, and social problems, as well as second cancers. The sooner late effects are treated, the better. Ask your care team about what late effects could occur. This will help you know what to look for.

Blocked bile duct

A tumor in the liver may grow large enough to block the bile ducts. A bile duct is a small tube that drains digestive fluid (bile) from the liver.

A blocked duct causes bile to build up in the liver. As a result, you may have pain, itching, discomfort, and/or yellowing of the skin and eyes. This is called jaundice. This blockage can cause an infection of the bile duct, called cholangitis.

A blocked bile duct may be treated by placing a biliary stent or doing a biliary bypass.

A biliary stent is a tiny tube placed in the bile duct to unblock it or keep it open. Before the stent can be placed, bile may need to be drained through an opening in the side of the body. You may need a new or second stent during or after cancer treatment if the tumor grows.

A biliary bypass is a surgery to re-route the flow of bile from the common bile duct into the small intestine. The bile flow then avoids (bypasses) the blocked part of the duct.

Difficulty eating

Sometimes side effects from surgery, cancer, or its treatment might cause you to feel not hungry or sick to your stomach (nauseated). You might have a sore mouth.

Healthy eating is important during treatment. It includes eating a balanced diet, eating the right amount of food, and drinking enough fluids. A registered dietitian who's an expert in nutrition and food can help.

Speak to your care team if you have trouble eating or maintaining weight.

Distress

Depression, anxiety, and sleeping issues are common and are a normal part of a cancer diagnosis. Talk to your care team and with those whom you feel most comfortable about how you're feeling.

Because not everyone shows emotion in the same way, NCCN has a Distress Thermometer that can help your care team determine how distressed you truly feel.

There are services, people, and medicine that can help you. Support and counseling services are available.

Fatigue

Fatigue is extreme tiredness and inability to function due to a lack of energy. Fatigue may be caused by cancer or by a side effect of treatment. Let your care team know how you're feeling and if fatigue is getting in the way of doing the things you enjoy.

Eating a balanced diet, exercise, yoga, acupuncture, and massage therapy may help. You might be referred to a nutritionist or dietitian to help with fatigue.

Pain

Tell your care team about any pain or discomfort. You might meet with a palliative care specialist or with a pain specialist to manage pain.

Fluid Buildup in the Abdomen

Fluid buildup in the abdomen (ascites) can occur if the liver is not working normally. Ask your team about treatment options, such as medications (diuretics) and fluid removal (paracentesis).

Key points

- Systemic drug therapy works throughout the body. It includes chemotherapy, targeted therapy, and immunotherapy.
- Ablation is a type of treatment that uses extreme cold or heat, radio waves, microwaves, or chemicals to destroy cancer cells.
- Arterially directed therapy treats tumors by injecting particles, chemotherapy, or radioactive beads directly into the blood vessels that supply the tumor(s).
- Radiation therapy uses high-energy x-rays, protons, or other radioactive waves to kill cancer cells and shrink tumors.
- A clinical trial is a type of research that studies a treatment to see how safe it is and how well it works.
- Supportive care is health care that relieves symptoms caused by cancer or its treatment and improves quality of life. Supportive care is available at any time.
- All cancer treatments can cause unwanted health issues called side effects. Tell your care team about all of your side effects so they can be managed.

Questions to ask

- When will I start treatment?
- How long will treatment likely take?
- What should I expect from treatment?
- What will you do to make me comfortable during treatment?
- How much will my insurance pay for treatment?

“Life your life to the fullest. Don't ever let your diagnosis keep your from enjoying life."

4

Removable liver cancer

33 Removal requirements

33 Liver transplant requirements

34 Follow-up testing

34 Key points

34 Questions to ask

This chapter is for people whose tumor might be removable with surgery (resectable) or those who may be eligible for a liver transplant. Together, you and your care team will choose a treatment plan that's best for you.

Your care team thinks they might be able to remove your liver tumor with surgery. This is called a resectable form of liver cancer. The requirements for removing liver cancer tumors are discussed below.

Removal requirements

Tumor removal may be an option for you if you have:

- Child-Turcotte-Pugh class A or B
- No increased pressure in the main vein supplying blood to the liver (portal hypertension)
- A tumor in a location that's easy to access by surgery
- Enough functioning and healthy non-cancerous liver cells after surgery
- Enough liver tissue left over for the surgery to be successful
- Adequate health to withstand the procedure

When possible, surgery is the preferred method to remove the tumor. Preferred therapies have the most evidence that they work better and may be safer than other therapies.

Resectable tumors can also be treated with ablation, arterially directed therapy, or radiation therapy or liver transplant.

There are many reasons why resection might not be the best choice for your situation. Ask your care team about this.

Liver transplant requirements

Transplant may be an option for you if meet the United Network for Organ Sharing (UNOS) criteria, including:

- Your alpha-fetoprotein (AFP) level is 1,000 ng/mL or less
- Your tumor is 2 to 5 cm in diameter (the size of a lime or smaller), or you have 2 to 3 tumors that are 1 to 3 cm each (the size of a grape or smaller)
- Your large veins, arteries, or bile ducts have no cancer (no macrovascular involvement)
- Your other organs have no cancer, just the liver
- You're healthy enough to have the procedure

If a liver transplant is an option for you, then you'll be referred to a liver transplant center with an experienced transplant team. There, you may receive bridging therapy, which can include ablation, arterially directed therapy (embolization), radiation therapy, or systemic drug therapy.

Once the transplant is complete, you'll also receive medicine to prevent your body from rejecting the donor liver.

No transplant

If a liver transplant isn't an option for you, then the preferred treatment is surgery to remove the tumor (resection). Other options include ablation, arterially directed therapy, and radiation therapy.

Follow-up testing

After treatment, you'll start regular follow-up testing to watch for signs that the cancer has returned or that the body is rejecting the donor liver (also called surveillance).

Imaging tests and blood tests to measure alpha-fetoprotein (AFP) will be needed. If you have hepatitis, you might be referred to a hepatologist to discuss antiviral treatment options.

Follow-up tests will be done every 3 to 6 months for 2 years, then every 6 months for at least 5 years.

Key points

- A tumor that can be completely removed with surgery is called resectable. Surgery is the preferred method to remove the tumor.
- Removable tumors can also be treated with ablation, arterially directed therapy, or radiation therapy.
- A liver transplant might be an option if you meet certain United Network for Organ Sharing (UNOS) criteria.
- If a liver transplant is an option, you might have bridging therapy while waiting for a transplant.
- Bridging therapy might include ablation, arterially directed therapy (embolization), radiation therapy, or systemic drug therapy.
- Surveillance consists of regular testing to watch for signs that the cancer has returned or the liver is being rejected.

Questions to ask

- How much of my liver will be removed?
- What other organs or tissues might be removed during surgery?
- What are the chances you can remove the whole tumor and I'll have a negative margin?

5
Unremovable liver cancer

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36 Follow-up testing

36 Treatment without surgery

37 Cancer progression

37 Key points

37 Questions to ask

Surgery for liver cancer isn't always possible. Sometimes, the location of the tumor prevents surgery. Other times, the liver isn't healthy enough for resection. A tumor that can't be removed with surgery is called unresectable.

If your tumor can't be removed with surgery, then your cancer is considered unresectable or unremovable. Even if you can't have surgery to remove just the tumor, you still have options.

This chapter explains the requirements for a total liver transplant and non-surgical treatments.

Liver transplant requirements

If the cancer responds to other therapies, such as medicine or radiation, you might still be a candidate for a transplant.

For more information on liver transplants, turn to the previous chapter, Removable liver cancer.

Follow-up testing

After a liver transplant, you'll start regular follow-up testing to watch for signs that the cancer has returned or that your body is rejecting the donor liver. This is called surveillance.

Imaging tests and blood tests to look for alpha-fetoprotein (AFP) are needed. Tests are usually done every 3 to 6 months for 2 years, then every 6 months for at least 5 years.

Treatment without surgery

Not everyone is healthy enough for a liver transplant. Surgery, such as resection or partial hepatectomy, also may not be possible because of the tumor's location or your health. Or you may simply not want a liver transplant for other reasons.

Even people who are eligible and healthy enough for a transplant may need the tumor to shrink slightly before transplant or to keep it from growing.

Locoregional therapy

Locoregional therapy focuses on the cancer and the area or region around it. Treatments include ablation, direct therapy, and radiation therapy. These are the preferred treatment options for people not receiving a liver transplant and with cancer only in their liver. Preferred therapies have the most evidence that they work better and may be safer than other therapies.

Clinical trial

A clinical trial might be an option. Clinical trials offer the best standard of liver cancer care while testing new therapies that may be able to help you. Ask your care team for more information.

Systemic drug therapy

Systemic drug therapy is drug therapy that works throughout the body. Systemic drug therapy options for unresectable liver cancer are the same as those used to treat metastatic disease. See *Chapter 6: Metastatic liver cancer.*

Supportive care

Supportive care relieves the symptoms of cancer and the side effects of its treatment. Supportive care isn't for treating cancer, but for improving quality of life. You can have supportive care while having cancer treatment.

Cancer progression

When cancer grows or spreads, it's called progression. Progression can happen during or after systemic drug therapy.

Treatment for progression is based on the type of systemic drug therapy you had before. You might have a different drug in the same category, or you might get a new type of drug altogether.

Systemic drug therapy options for cancer progression are the same as those used to treat metastatic disease. See *Chapter 6: Metastatic liver cancer.*

Key points

- A tumor that cannot be removed with surgery is called unresectable or unremovable.
- A liver transplant might be an option if you meet certain requirements.
- After a liver transplant, you'll undergo surveillance. Surveillance consists of regular testing to watch for tumor growth and checking the liver for signs of rejection.
- If a liver transplant isn't an option for you or you need to prevent the tumor from growing while you're on a transplant list, then the preferred treatment is locoregional therapy, such as ablation, arterially directed therapy, or radiation therapy.
- Systemic drug therapy or a clinical trial are other options for people not having a liver transplant.
- Supportive care is always available for anyone, regardless of cancer status.
- When cancer grows or spreads, it's called disease progression. Progression can happen during or after drug therapy.

Questions to ask

- How long will recovery take, and what should I expect?
- How much pain will I be in? What will be done to manage my pain?
- What supportive care options are available to me?

6
Metastatic liver cancer

39 Categories of preference

39 Treatment options

41 Cancer progression

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42 Questions to ask

Stage 4B liver cancer is metastatic liver cancer. This is cancer that has spread from the liver to distant sites in the body. The goals of treatment are to reduce the amount of cancer and to prevent further spread.

Metastatic liver cancer has spread outside of the liver to distant areas in the body, such as the lungs, bones, or lymph nodes. Before you can start treatment, you may need a biopsy to confirm that the cancer is metastatic.

Categories of preference

All treatments listed in this guide are recommended and appropriate. When helpful, NCCN experts also assign a level of preference to their recommendations for systemic therapies:

- **Preferred therapies** have the most evidence they may work better and be safer than other therapies.
- **Other recommended therapies** can provide effective results but may have less evidence, more side effects, or may not work quite as well as preferred therapies.
- **Therapies used in certain cases** work best for individuals with specific cancer features or health circumstances.

Treatment options

The goals of treatment are to reduce the amount of cancer in the body (called cancer burden) and to prevent it from spreading further. Treatment options include drug therapy, radiation therapy, a clinical trial, and supportive care.

Drug therapy

Drug therapy works throughout the body. Preferred treatment options are based on your Child-Turcotte-Pugh class and other factors. Ask your medical oncologist why one drug might be chosen over another.

First-line options are the treatments given first. The preferred first-line systemic drug therapy options are atezolizumab with bevacizumab, nivolumab with ipilimumab, or tremelimumab-actl with durvalumab.

A substitute (biosimilar) drug might be used for bevacizumab. A biosimilar is an almost identical drug made by another company. It's used in the same way and at the same dose as bevacizumab.

Some medicine might be given through a vein and some might be given as a subcutaneous (under-the-skin) injection. A subcutaneous dose might be easier than an intravenous one.

For all first-line drug therapy options, see **Guide 4.**

Radiation therapy

Radiation therapy can be used to ease pain from tumors or to shrink a tumor. If the tumor(s) respond well, it might change the cancer from unremovable to removable.

More information on radiation therapy is in Chapter 3.

Clinical trial

A clinical trial is an option worth considering for any stage of cancer, not just metastatic cancer. It's a recommended option for people with metastatic cancer. Ask your care team for more information.

Supportive care

Supportive care is used to relieve the symptoms of cancer and the side effects of cancer treatment. Supportive care isn't for treating cancer, but for improving your quality of life. You can have supportive care while still having cancer treatment.

Guide 4
First-line systemic drug therapy options for metastatic liver cancer

Preferred therapies	• Atezolizumab with Bevacizumab* • Tremelimumab-actl with Durvalumab
Other recommended therapies	• Durvalumab • Lenvatinib • Sorafenib • Tislelizumab-jsgr • Nivolumab with Ipilimumab • Pembrolizumab**

*A biosimilar might be used instead of Bevacizumab.
** A subcutaneous (under the skin) or an IV dose might be used

Cancer progression

When cancer grows or spreads, it's called progression. If first-line systemic drug therapy doesn't stop the growth or spread of cancer, then more lines of therapy might be given.

Treatment is based on the type of drug therapy you had before. You may have a drug in the same family that you haven't had, or you might try a new drug if all other options haven't worked.

For next-line systemic drug therapy options, see **Guide 5.**



We want your feedback!

Our goal is to provide helpful and easy-to-understand information on cancer. Take our survey to let us know what we got right and what we could do better.
NCCN.org/patients/feedback

Guide 5
Next-line systemic drug therapy options for metastatic liver cancer

Preferred options	Any of the treatments in **Guide 4** (including Lenvatinib and Sorafenib) • Cabozantinib • Regorafenib
Other recommended therapies	Any of the treatments in **Guide 4**
Therapies used in certain cases	• Larotrectinib, Repotrectinib, or Entrectinib for *NTRK* gene fusion-positive tumors • Nivolumab • Ramucirumab • Selpercatinib (for *RET* gene fusion-positive tumors)

Key points

- Stage 4B liver cancer is metastatic liver cancer. It's cancer that has spread to distant sites, such as the lungs or bones.
- The goal of treatment is to reduce the amount of cancer in the body, called cancer burden, and to prevent the further spread of cancer.
- First-line options are the treatments given first. The preferred first-line systemic drug therapy is atezolizumab with bevacizumab, tremelimumab-actl with durvalumab, or ipilimumab with nivolumab.
- A substitute (biosimilar) might be used instead of bevacizumab.

Questions to ask

- Are there programs to help me pay for treatment?
- What are the chances my cancer will return after treatment?
- How many lines of treatment will I need? How many am I allowed to have?
- How can I be made more comfortable while we treat my cancer?

What's next?

Metastatic liver cancer is very serious, and you have many options to treat it. Always be mindful that your thoughts and opinions matter when it comes to your treatment. Speak up when you don't feel comfortable doing something.

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Other resources

44 What else to know

44 What else to do

44 Where to get help

45 Questions to ask yourself

Want to learn more? Here's how you can get additional help.

What else to know

This guide helps you know your options so you can make informed decisions and improve your cancer care. But it's not the only resource that you have.

Ask for as much information and help as you need. Many people are interested in learning more about:

- The details of their health and treatment
- Being a part of a care team
- Getting financial help
- Finding a care provider who's an expert in liver cancer
- Coping with other health problems
- Issues with transplants or ways to get onto the transplant list

What else to do

Your health care center can help you with next steps. It often has on-site resources to help meet your needs and find answers to your questions. Health care centers can also inform you of resources in your community.

In addition to help from your providers, the resources listed in the next section provide support for many people like yourself.

Where to get help

Look through the list below and visit the provided websites to learn more about these organizations.

Blue Faery
bluefaery.org

Cancer*Care*
cancercare.org

Cancer Hope Network
cancerhopenetwork.org

Cholangiocarcinoma Foundation
cholangiocarcinoma.org

Gallbladder Cancer Foundation
gallbladdercancer.org

GRACE
cancergrace.org

Imerman Angels
imermanangels.org

PAN Foundation
panfoundation.org

Triage Cancer
triagecancer.org

Questions to ask yourself

- How can I find someone to stay with me after surgery?
- Do I feel safe and secure at home, at work, and/or in my neighborhood?
- What concerns do I have about stress, money, work, health, and/or relationships?
- Do I have a support network of family, friends, neighbors, and/or coworkers?
- How can I build a support system?



Take our survey and help make the NCCN Guidelines for Patients better for everyone!

NCCN.org/patients/comments



Words to know

ablation
Treatment that destroys very small tumors with heat, cold, lasers, or chemicals. Also called ablative therapy.

alpha-fetoprotein (AFP)
A protein that can be elevated in people with liver cancer.

arterially directed therapy
Treats tumors by injecting particles, chemotherapy, or radioactive beads directly into the blood vessels that supply the tumor(s).

bile
A yellowish-brown fluid made by the liver that helps to digest food.

bile duct
A small tube-shaped structure that drains digestive fluid (bile) from the liver.

bilirubin
A yellowish-brown substance that is part of a digestive fluid called bile.

biopsy
A procedure that removes fluid or tissue samples to be tested for a disease.

biosimilar
An almost identical version of a drug made by another company. It's used in the same way and at the same dose as the original drug.

blood clot
A thickened mass of blood. Also called a thrombosis.

blood vessel
A tube-shaped structure that carries blood throughout the body.

bypass
An operation to re-route the flow of fluid in the body.

cancer antigen 19-9 (CA 19-9)
A protein made by certain cancer cells found in blood.

cancer stage
A rating of the growth and spread of cancer.

carcinoembryonic antigen (CEA)
A protein present when some types of cancer form.

chemotherapy
Drugs that kill fast-dividing cells throughout the body, including cancer cells and some normal cells.

cholangitis
An infection of the vessels that drain digestive fluid from the liver (bile ducts).

cirrhosis
Scarring of the liver from chronic liver disease that may affect its function.

clinical trial
Research on a test or treatment to assess its safety or how well it works.

computed tomography (CT)
A test that combines many x-rays to make pictures of the inside of the body.

contrast
A substance put into your body to make clearer pictures during imaging tests.

core needle biopsy
A procedure that removes tissue samples with a hollow needle. Also called core biopsy.

donor
A person who gives their organs, tissues, or cells to another person.

embolization
Treatment with beads inserted into an artery for blocking the blood supply to tumors.

external beam radiation therapy
Cancer treatment with radiation received from a machine outside of the body.

fine-needle aspiration
Removal of a tissue sample with a thin needle.

gallbladder
A small organ that holds digestive fluid (bile) from the liver.

hepatologist
A health care provider who's an expert in diseases of the liver, gallbladder, bile ducts, and pancreas.

immune system
The body's natural defense against infection and disease.

immunotherapy
Treatment with drugs that helps the body find and destroy cancer cells.

intrahepatic cholangiosarcoma
Cancer of the bile ducts. Second most common type of liver cancer

intravenous (IV)
A method of giving drugs by a needle or tube inserted into a vein.

jaundice
Yellow-colored skin or eyes due to a buildup of bilirubin in the body.

lymph
A clear fluid containing white blood cells.

lymph node
A small group of disease-fighting cells located throughout the body.

magnetic resonance imaging (MRI)
A test that uses radio waves and powerful magnets to make pictures of the insides of the body.

medical oncologist
A health care provider who's an expert in cancer drugs.

metastasis
The spread of cancer cells from the first (primary) tumor to a new site.

microsatellite instability (MSI)
Errors made in small, repeated DNA parts during the copy process because of an abnormal repair system.

mutation
An abnormal change.

negative margin
When a tumor is removed completely, with no cancer remaining.

oncologist
A health care provider who's an expert in cancer.

palliative care
Health care that includes symptom relief but not cancer treatment. Also sometimes called supportive care.

partial hepatectomy
Surgery to remove a portion of the liver.

pathologist
A health care provider who's an expert in examining tissue and cells to find disease.

performance status
A rating of one's ability to do daily activities.

positive margin
When a tumor is removed surgically and some tumor cells are left behind.

positron emission tomography (PET)
A test that uses radioactive material to see the shape and function of body parts.

primary treatment
The main treatment used to rid the body of cancer.

progression
The growth or spread of cancer after being tested or treated.

radiation oncologist
A health care provider who's an expert in radiation treatment.

radiation therapy
Treatment that uses high-energy rays to destroy cancer cells.

radiologist
A health care provider who's an expert in imaging tests.

resectable
Cancer that can be removed with surgery.

risk factor
Something that increases the chance of getting a disease.

side effect
An unhealthy or unpleasant physical or emotional response to treatment.

standard of care
The best-known way to treat a particular disease, based on past clinical trials. There may be more than one treatment considered standard of care.

subtype
A smaller group within a type of cancer based on certain cell features.

supportive care
Health care that includes symptom relief but not cancer treatment. Also called palliative care.

surgical margin
The normal-looking tissue around the edge of a tumor removed during surgery.

surgical oncologist
A surgeon who's an expert in performing surgical procedures in cancer patients.

targeted therapy
Drugs that stop the growth process specific to cancer cells.

ultrasound
A test that uses sound waves to take pictures of the insides of the body.

unresectable
Cancer that can't be removed by surgery.

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This patient guide is based on the NCCN Clinical Practice Guidelines in Oncology (NCCN Guidelines®) for Hepatocellular Carcinoma, Version 1.2026. It was adapted, reviewed, and published with help from the following people:

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