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Bile Duct Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Finding cancer early, when it's small and before it has spread, often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that's not always the case.

- [Can Bile Duct Cancer Be Found Early?](#)
- [Signs and Symptoms of Bile Duct Cancer](#)
- [Tests for Bile Duct Cancer](#)

Stages and Outlook (Prognosis)

After a cancer diagnosis, staging provides important information about the extent of cancer in the body and the likely response to treatment.

- [Bile Duct Cancer Stages](#)
- [Survival Rates for Bile Duct Cancer](#)

Questions to Ask About Bile Duct Cancer

Here are some questions you can ask your cancer care team to help you better understand your bile duct cancer and treatment options.

- [Questions to Ask About Bile Duct Cancer](#)
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Can Bile Duct Cancer Be Found Early?

Only a small number of bile duct cancers are found before they have spread too far to be removed by surgery.

The bile ducts are deep inside the body, so small tumors can't be seen or felt during routine physical exams. There are no blood tests or other tests that can reliably detect bile duct cancers early enough to be useful as screening tests. (Screening is testing for cancer in people without any symptoms.) Because of this, most bile duct cancers are found only after the cancer has grown enough to cause signs or symptoms. The most common symptom is jaundice, a yellowing of the skin and eyes, which is caused by a blocked bile duct.

References

Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA: Elsevier; 2014:1373-1395.

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Patel T, Borad MJ. Carcinoma of the biliary tree. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2015:715-735.

See all references for Bile Duct Cancer (www.cancer.org/cancer/bile-duct-cancer/references.html)

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Signs and Symptoms of Bile Duct Cancer

Bile duct cancer does not usually cause signs or symptoms until later in the course of the disease, but sometimes symptoms can appear sooner and lead to an early diagnosis. If the cancer is diagnosed at an early stage, [treatment](#)¹ might work better.

When bile duct cancer does cause symptoms, it's usually because a bile duct is blocked. Symptoms tend to depend on whether the cancer is in ducts inside the liver (intrahepatic) or in ducts outside the liver (extrahepatic), and include:

Jaundice

Normally, bile is made by the liver and released into the intestine. Jaundice occurs when the liver can't get rid of bile, which contains a greenish-yellow chemical called **bilirubin**. As a result, bilirubin backs up into the bloodstream and settles in different parts of the body. Jaundice can often be seen as a yellowing of the skin and in the white part of the eyes.

Jaundice is the most common symptom of bile duct cancer, but most of the time, jaundice isn't caused by cancer. It's more often caused by hepatitis (inflammation of the liver) or a gallstone that has traveled to the bile duct. But whenever jaundice occurs, a doctor should be seen right away.

Itching

Excess bilirubin in the skin can also cause itching. Most people with bile duct cancer notice itching.

Light-colored/greasy stools

Bilirubin contributes to the brown color of bowel movements, so if it doesn't reach the intestines, the color of a person's stool might be lighter.

If the cancer blocks the release of bile and pancreatic juices into the intestine, a person might not be able to digest fatty foods. The undigested fat can also cause stools to be unusually pale. They might also be bulky, greasy, and float in the toilet.

Dark urine

When bilirubin levels in the blood get high, it can also come out in the urine and turn it dark.

Abdominal (belly) pain

Early bile duct cancers seldom cause pain, but bigger tumors may cause belly pain, especially below the ribs on the right side.

Loss of appetite/weight loss

People with bile duct cancer may not feel hungry and may lose weight without trying to do so.

Fever

Some people with bile duct cancer develop fevers.

Nausea and vomiting

These are not common symptoms of bile duct cancer, but they may occur in people who develop an infection (cholangitis) as a result of bile duct blockage. These symptoms are often seen along with a fever.

Keep in mind: Bile duct cancer is rare. These symptoms are far more likely to be caused by something other than bile duct cancer. For example, people with gallstones have many of these same symptoms. And there are many far more common causes of belly pain than bile duct cancer. Also, hepatitis (an inflamed liver most often caused by infection with a virus) is a much more common cause of jaundice.

Still, if you have any of these problems, it's important to see a doctor right away so the cause can be found and treated, if needed.

Hyperlinks

1. www.cancer.org/cancer/bile-duct-cancer/treating.html

References

Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's Clinical Oncology*. 5th ed. Philadelphia, PA. Elsevier; 2014:1373-1395.

Patel T, Borad MJ. Carcinoma of the biliary tree. In: DeVita VT, Lawrence TS, Rosenberg SA, eds. *DeVita, Hellman, and Rosenberg's Cancer: Principles and Practice of Oncology*. 10th ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2015:715-735.

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Tests for Bile Duct Cancer

Most bile duct cancers aren't found until a person goes to a doctor because they have symptoms.

Medical history and physical exam

If there's reason to suspect that you might have bile duct cancer, your doctor will want to take your complete medical history to check for risk factors and to learn more about your symptoms.

A physical exam is done to look for signs of bile duct cancer or other health problems. If bile duct cancer is suspected, the exam will focus mostly on the abdomen (belly) to check for any lumps, tenderness, or build-up of fluid. The skin and the white part of the eyes will be checked for jaundice (a yellowish color).

If symptoms and/or the results of the physical exam suggest you might have bile duct cancer, tests will be done. These could include lab tests, imaging tests, and other procedures.

Blood tests

Tests of liver and gallbladder function

[Lab tests](#)¹ might be done to find out how much bilirubin is in your blood. Bilirubin is the chemical that causes jaundice. Problems in the bile ducts, gallbladder, or liver can raise the blood level of bilirubin.

The doctor may also do tests for albumin, liver enzymes (alkaline phosphatase, AST, ALT, and GGT), and certain other substances in your blood. These may be called **liver function tests**. They can help diagnose bile duct, gallbladder, or liver disease. If levels of these substances are higher, it might point to blockage of the bile duct, but they can't show if it's due to cancer or some other reason.

Tumor markers

Tumor markers are substances made by cancer cells that can sometimes be found in the blood. People with bile duct cancer may have high blood levels of the markers called *CEA* and *CA 19-9*. High levels of these markers often mean that cancer is present, but the high levels can also be caused by other types of cancer, or even by problems other than cancer. Also, not all bile duct cancers make these tumor markers, so low or normal levels don't always mean cancer is not present.

Still, these tests can sometimes be useful after a person is diagnosed with bile duct cancer. If the levels of these markers are found to be high, they can be followed over time to help see how well treatment is working.

Imaging tests

[Imaging tests](#)² use x-rays, magnetic fields, or sound waves to create pictures of the inside of your body. Imaging tests can be done for a number of reasons, including:

- To look for suspicious areas that might be cancer
- To help a doctor guide a biopsy needle into a suspicious area to take a sample for testing
- To learn how far cancer has spread
- To help make treatment decisions
- To help find out if treatment is working
- To look for signs of the cancer coming back after treatment

Imaging tests can often show a bile duct blockage. But they often can't show if the blockage is caused by a tumor or a less serious problem like scarring.

People who have (or might have) bile duct cancer may have one or more of these tests:

Ultrasound

Ultrasound uses sound waves and their echoes to create images of the inside of the body. A small instrument called a transducer gives off sound waves and picks up the echoes as they bounce off organs inside the body. The echoes are converted by a computer into an image on a screen.

Abdominal ultrasound: This is often the first imaging test done in people who have symptoms such as jaundice or pain in the right upper part of their abdomen (belly). This is an easy test to have and it doesn't use radiation. You simply lie on a table while a technician moves the transducer on the skin over your abdomen.

This type of ultrasound can also be used to guide a needle into a suspicious area or lymph node so that cells can be removed (biopsied) and looked at under a microscope. This is called an **ultrasound-guided needle biopsy**.

Endoscopic or laparoscopic ultrasound: In these techniques, the doctor puts the ultrasound transducer inside your body and closer to the bile duct. This gives more detailed images than a standard ultrasound. The transducer is on the end of a thin, lighted tube that has a camera on it. The tube is either passed through your mouth, down through your stomach, and into the small intestine near the bile ducts (endoscopic ultrasound) or through a small surgical cut in the skin on side of your body (laparoscopic ultrasound).

If there's a tumor, the doctor might be able to see how far it has grown and spread, which can help in planning for surgery. Ultrasound may be able to show if nearby lymph nodes are enlarged, which can be a sign that cancer has reached them. Needle biopsies of suspicious areas might be done.

Computed tomography (CT) scan

A CT scan uses x-rays to make detailed cross-sectional images of your body. It can be used to

- Help diagnose bile duct cancer by showing tumors in the area.
- Help stage the cancer (find out how far it has spread). CT scans can show the

organs near the bile duct (especially the liver), as well as lymph nodes and distant organs where cancer might have spread to.

- A type of CT known as **CT angiography** can be used to look at the blood vessels around the bile ducts. This can help determine if [surgery](#)³ is an option.
- Guide a biopsy needle into a suspected tumor. This is called a **CT-guided needle biopsy**. To do it, you stay on the CT scanning table while the doctor advances a biopsy needle through your skin and toward the mass. CT scans are repeated until the needle is inside the mass. A small amount of tissue (a sample) is then taken out through the needle.

Magnetic resonance imaging (MRI) scan

Like CT scans, MRI scans show detailed images of soft tissues in the body. But MRI scans use radio waves and strong magnets instead of x-rays. A contrast material called *gadolinium* may be injected into a vein before the scan to see details better.

MRI scans can provide a great deal of detail and be very helpful in looking at the bile ducts and other organs. Sometimes they can help tell a benign (non-cancer) tumor from one that's cancer. Special types of MRI scans may also be used in people who may have bile duct cancer:

- **MR cholangiopancreatography (MRCP)** can be used to look at the bile ducts and is described below in the section on cholangiography.
- **MR angiography (MRA)** looks at blood vessels and is also covered in the section on angiography.

Cholangiography

A cholangiogram is an imaging test that looks at the bile ducts to see if they're blocked, narrowed, or dilated (widened). This can help show if someone might have a tumor that's blocking a duct. It can also be used to help plan surgery. There are several types of cholangiograms, each of which has different pros and cons.

Magnetic resonance cholangiopancreatography (MRCP): This is a way to get images of the bile ducts with the same type of machine used for standard MRIs. Neither an endoscope or an IV contrast agent is used, unlike the other types of cholangiograms. Because it's non-invasive (nothing is put in your body), doctors often use MRCP if they just need images of the bile ducts. This test can't be used to get biopsy samples of

tumors or to place stents (small tubes) in the ducts to keep them open.

Endoscopic retrograde cholangiopancreatography (ERCP): In this procedure, a doctor passes a long, flexible tube (endoscope) down your throat, through your stomach, and into the first part of the small intestine. This is usually done while you are sedated (given medicine to make you sleepy). A small catheter (tube) is passed out of the end of the endoscope and into the common bile duct. A small amount of contrast dye is injected through the catheter. The dye helps outline the bile ducts and pancreatic duct as x-rays are taken. The images can show narrowing or blockage of these ducts. This test is more invasive than MRCP, but it has the advantage of allowing the doctor to take samples of cells or fluid for testing. ERCP can also be used to put a stent (a small tube) into a duct to help keep it open.

Percutaneous transhepatic cholangiography (PTC): To do this procedure, the doctor puts a thin, hollow needle through the skin of your belly and into a bile duct inside your liver. You're given medicines through an IV line to make you sleepy before this test. A local anesthetic is also used to numb the area before putting in the needle. A contrast dye is then injected through the needle, and x-rays are taken as it passes through the bile ducts. Like ERCP, this test can also be used to take samples of fluid or tissues or to put a stent (small tube) in the bile duct to help keep it open. Because it's more invasive, PTC is not usually used unless ERCP has already been tried or can't be done for some reason.

Angiography

Angiography or an angiogram is an x-ray test for looking at blood vessels in and around the liver and bile ducts. A thin plastic tube called a catheter is threaded into an artery and a small amount of contrast dye is injected to outline blood vessels. Then x-rays are taken. The images show if blood flow in is blocked anywhere or affected by a tumor, as well as any abnormal blood vessels in the area. The test can also show if a bile duct cancer has grown through the walls of blood vessels. This information is mainly used to help surgeons decide whether a cancer can be removed and to help plan the operation.

Angiography can also be done with a CT scan (CT angiography) or an MRI (MR angiography). These tend to be used more often because they give information about the blood vessels without the need for a catheter. You may still need an IV line so that a contrast dye can be injected into your bloodstream during the imaging.

Other tests

Doctors may also use special instruments (endoscopes) to go into the body to get a

more direct look at the bile duct and nearby areas. The scopes may be passed through small surgical incisions (cuts) or through natural body openings like the mouth.

Laparoscopy

Laparoscopy is a type of surgery. The doctor puts a thin tube with a light and a small video camera on the end (a laparoscope) through a small incision (cut) in the front of your belly to look at the bile ducts, gallbladder, liver, and other nearby organs and tissues. (Sometimes more than one cut is made.) This is typically done in the operating room while drugs are used to put you into a deep sleep and not feel pain (general anesthesia) during the surgery.

Laparoscopy can help doctors plan surgery or other treatments, and can help determine the stage (extent) of the cancer. If needed, doctors can also use special instruments put in through the incisions to take out biopsy samples for testing. Laparoscopy is often done before surgery to remove the cancer, to help make sure the tumor can be removed completely.

Cholangioscopy

This procedure can be done during an ERCP (see above). The doctor passes a very thin fiber-optic tube with a tiny camera on the end down through the larger tube used for the ERCP. From there it can be maneuvered into the bile ducts. This lets the doctor see any blockages, stones, or tumors and even biopsy them.

Biopsy

Imaging tests might suggest that a bile duct cancer is present, but in many cases samples of bile duct cells or tissue is removed (biopsied) and looked at with a microscope to be sure of the diagnosis.

But a biopsy isn't always be done before surgery for a possible bile duct cancer. If imaging tests show a tumor in the bile duct, the doctor may decide to proceed directly to surgery and to treat the tumor as a bile duct cancer (see [Surgery for Bile Duct Cancer⁴](#)).

Types of biopsies

There are many ways to take biopsy samples to diagnose bile duct cancer.

During cholangiography: If ERCP or PTC is being done, a sample of bile may be

collected during the procedure to look for cancer cells in the fluid. Bile duct cells and tiny pieces of bile duct tissue can also be taken out by biliary brushing. Instead of injecting contrast dye and taking x-ray pictures (as for ERCP or PTC), the doctor advances a small brush with a long, flexible handle through the endoscope or needle. The end of the brush is used to scrape cells and small tissue fragments from the lining of the bile duct. These are then looked at with a microscope.

During cholangioscopy: Biopsy specimens can also be taken during cholangioscopy. This test lets the doctor see the inside surface of the bile duct and take samples of suspicious areas.

Needle biopsy: For this test, a thin, hollow needle is put through the skin and into the tumor without making a cut in the skin. (The skin is numbed first with a local anesthetic.) The needle is usually guided into place using ultrasound or CT scans. When the images show that the needle is in the tumor, cells and/or fluid are drawn into the needle and sent to the lab to be tested.

In most cases, this is done as a fine needle aspiration (FNA) biopsy, which uses a very thin needle attached to a syringe to suck out (aspirate) a sample of cells. Sometimes, the FNA doesn't get enough cells for a definite diagnosis, so a core needle biopsy, which uses a slightly larger needle to get a bigger sample, may be done.

For more on biopsies and how samples are tested, see [Testing Biopsy and Cytology Specimens for Cancer](#)⁵.

Hyperlinks

1. www.cancer.org/treatment/understanding-your-diagnosis/tests.html
2. www.cancer.org/treatment/understanding-your-diagnosis/tests/imaging-radiology-tests-for-cancer.html
3. www.cancer.org/cancer/bile-duct-cancer/treating/surgery.html
4. www.cancer.org/cancer/bile-duct-cancer/treating/surgery.html
5. www.cancer.org/treatment/understanding-your-diagnosis/tests/testing-biopsy-and-cytology-specimens-for-cancer.html

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Abou-Alfa GK, Jarnagin W, Lowery M, D'Angelica M, Brown K, Ludwig E, Covey A, Kemeny N, Goodman KA, Shia J, O'Reilly EM. Liver and bile duct cancer. In: Neiderhuber JE, Armitage JO, Doroshow JH, Kastan MB, Tepper JE, eds. *Abeloff's*

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Bile Duct Cancer Stages

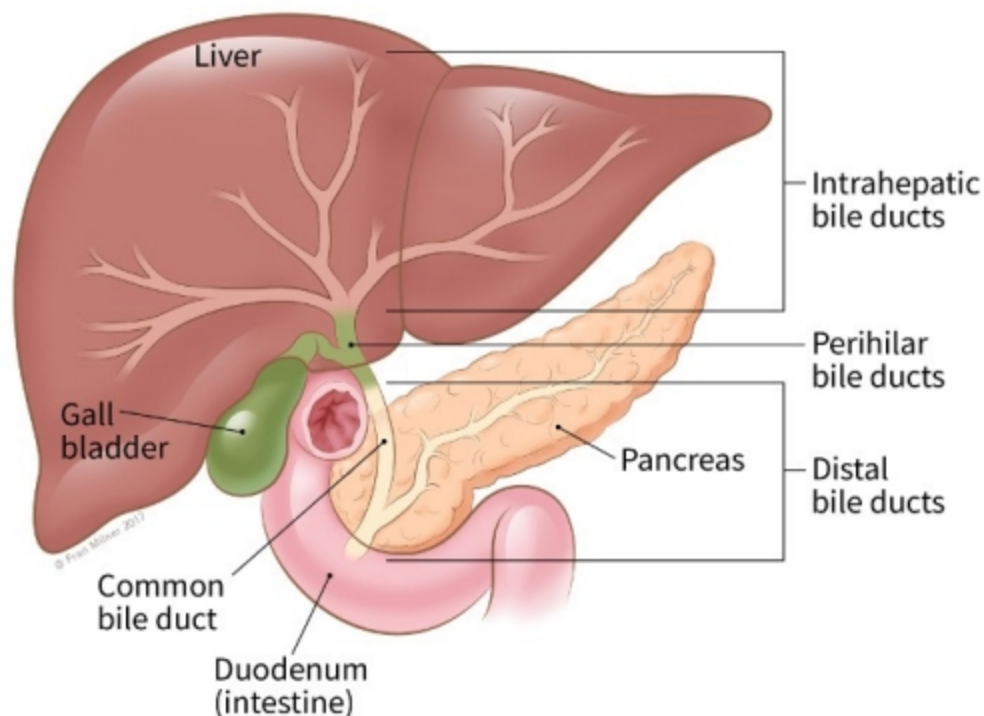
The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival statistics.

The stage of a bile duct cancer is determined by the results of the physical exam, imaging and other tests, and by the results of [surgery](#)² if it has been done.

The American Joint Committee on Cancer (AJCC) TNM system

A staging system is a standard way for the cancer care team to sum up the extent of a cancer. The main system used to describe the stages of bile duct cancer is the American Joint Committee on Cancer (AJCC) TNM system. There are actually 3 different staging systems for bile duct cancers, depending on where they start:

- [Intrahepatic bile duct cancers](#) (those starting within the liver)
- [Perihilar \(hilar\) bile duct cancers](#) (those starting in the hilum, the area just outside the liver)
- [Distal bile duct cancers](#) (those starting farther down the bile duct system)



Nearly all bile duct cancers start in the innermost layer of the wall of the bile duct, called the **mucosa**. Over time they can grow through the wall toward the outside of the bile duct. If a tumor grows through the bile duct wall, it can invade (grow into) nearby blood vessels, organs, and other structures. It might also grow into nearby lymphatic or blood vessels, and from there spread to nearby lymph nodes or to other parts of the body.

Resectable versus unresectable

The TNM staging system provides a detailed summary of how far the bile duct cancer has spread and gives doctors an idea about a person's prognosis (outlook). But for treatment purposes, doctors often use a simpler system based on whether or not the cancer can probably be removed (resected) with [surgery](#)³:

- **Resectable** cancers are those that doctors believe can be removed completely by surgery.
- **Unresectable** cancers have spread too far or are in too difficult a place to be removed entirely by surgery.

In general terms, most stage 0, I, and II cancers and possibly some stage III cancers are resectable, while most stage III and IV tumors are unresectable. But this depends on other factors, too, such as the size and location of the cancer and whether a person

is healthy enough for surgery.

More information

For more detailed staging information based on the type of bile duct cancer, choose an option below.

[Staging of Intrahepatic Bile Duct Cancers](#)

[Staging of Perihilar Bile Duct Cancers](#)

[Staging of Distal Bile Duct Cancers](#)

Hyperlinks

1. www.cancer.org/cancer/bile-duct-cancer/treating.html
2. www.cancer.org/cancer/bile-duct-cancer/treating/surgery.html
3. www.cancer.org/cancer/bile-duct-cancer/treating/surgery.html

References

⁴American Joint Committee on Cancer. *AJCC Cancer Staging Manual*. 7th ed. New York, NY: Springer; 2010: 201-205; 295-325.

See all references for Bile Duct Cancer (www.cancer.org/cancer/bile-duct-cancer/references.html)

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Staging of Intrahepatic Bile Duct Cancers

After a person is diagnosed with intrahepatic bile duct cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a

cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage intrahepatic bile duct cancers are **stage 0 (also called carcinoma in situ, or CIS)**. Stages then range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage.

Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for intrahepatic bile duct cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the main **tumor (T)**: How large has the cancer grown? Has the cancer reached nearby structures or organs?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant lymph nodes or distant organs such as the bones, lungs, or peritoneum (the lining of the abdomen [belly])?

The system described below is the most recent AJCC system, effective January 2018. It's used only for **intrahepatic bile duct cancers** (those starting within the liver). Staging systems for cancers starting in other parts of the bile ducts are described in:

- [Perihilar Bile Duct Cancer Stages](#) (for cancers starting in the hilum, just outside the liver)
- [Distal Bile Duct Cancer Stages](#) (for cancers starting farther down the bile duct)

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced.

Once a person's T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more on

this, see [Cancer Staging²](#).

Intrahepatic bile duct cancer is typically given a **clinical stage** based on the results of a physical exam, biopsy, and imaging tests (described in [Tests for Bile Duct Cancer](#)). If surgery is done, the **pathologic stage** (also called the **surgical stage**) is determined by examining the tissue removed during the operation.

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

Stages of intrahepatic bile duct cancer

AJCC Stage	Stage grouping	Stage description*
0	Tis	The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It hasn't started growing into the deeper layers (Tis).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
IA	T1a	The tumor is no more than 5 cm (about 2 inches) across and has not invaded nearby blood vessels (T1a).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
IB	T1b	The tumor is more than 5 cm (about 2 inches) across but has not invaded nearby blood vessels (T1b).
	N0	The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
II	T2	The tumor has grown into nearby blood vessels, OR there are 2 or more tumors, which may or may not have grown into nearby blood vessels (T2).
	N0	The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
IIIA	T3	The cancer has grown through the visceral peritoneum (the outer lining of organs in the abdomen) (T3).
	N0	

	M0	The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIIB	T4	The cancer has grown directly into nearby structures outside of the liver (T4).
	N0	The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
	OR	
	Any T	The cancer is any size and might or might not be growing outside the bile duct (Any T) and has spread to nearby lymph nodes (N1). It has not spread to distant sites (M0).
	N1	
	M0	
IV	Any T	The cancer is any size and may or may not be growing outside the bile duct (Any T). It may or may not have spread to nearby lymph nodes (Any N).
	Any N	
	M1	It has spread to distant organs such as the bones or lungs (M1).

*The T categories are described in the table above, except for:

- **TX:** Main tumor cannot be assessed due to lack of information.
- **T0:** No sign of a primary tumor.

The N categories are described in the table above, except for:

- **NX:** Nearby lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/bile-duct-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html

References

American Joint Committee on Cancer. Intrahepatic Bile Ducts. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 295-302.

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Staging of Perihilar Bile Duct Cancers

After a person is diagnosed with perihilar (hilar) bile duct cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival statistics.

The earliest stage perihilar bile duct cancers are **stage 0, also called carcinoma in situ (CIS) or high-grade biliary intraepithelial neoplasia**. Stages then range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage.

Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for perihilar bile duct cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the main **tumor (T)**: Has the cancer grown through the bile duct or reached nearby structures or organs?

- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant lymph nodes or distant organs such as the bones, lungs, or peritoneum (the lining of the abdomen [belly])?

The system described below is the most recent AJCC system, effective January 2018. It's used only for **perihilar bile duct cancers** (those starting in the hilum, just outside the liver). Staging systems for cancers starting in other parts of the bile ducts are described in:

- [Intrahepatic Bile Duct Cancer Stages](#) (for cancers starting in bile ducts within the liver)
- [Distal Bile Duct Cancer Stages](#) (for cancers starting farther down the bile duct)

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced.

Once a person's T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more on this, see [Cancer Staging](#)².

Perihilar bile duct cancer is typically given a **clinical stage** based on the results of a physical exam, biopsy, and imaging tests (described in [Tests for Bile Duct Cancer](#)). If surgery is done, the **pathologic stage** (also called the **surgical stage**) is determined by examining the tissue removed during the operation.

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

Stages of perihilar bile duct cancer

AJCC Stage	Stage grouping	Stage description*
0	Tis	The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It hasn't started growing into the deeper layers (Tis).
	N0	
	M0	It has not spread to nearby lymph nodes (N0) or to distant sites

		(M0).
I	T1 N0 M0	The cancer has grown into deeper layers of the bile duct wall, such as the muscle layer or fibrous tissue layer (T1). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
II	T2a or T2b N0 M0	The tumor has grown through the bile duct wall and into the nearby fatty tissue (T2a) or into the nearby liver tissue (T2b). The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIIA	T3 N0 M0	The cancer is growing into branches of the main blood vessels of the liver (the portal vein and/or the hepatic artery) on one side (left or right) (T3). The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIIB	T4 N0 M0	The cancer is growing into the main blood vessels of the liver (the portal vein and/or the common hepatic artery) or into branches of these vessels on both sides (left and right), OR the cancer is growing into other bile ducts on one side (left or right) and a main blood vessel on the other side (T4). The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).
IIIC	Any T N1 M0	The cancer is any size and may or may not be growing outside the bile duct or into nearby blood vessels (Any T) and has spread to 1 to 3 nearby lymph nodes (N1). It has not spread to distant sites (M0).
IVA	Any T N2 M0	The cancer is any size and may or may not be growing outside the bile duct or into nearby blood vessels (Any T). It has also spread to 4 or more nearby lymph nodes (N2). It has not spread to distant sites (M0).
IVB	Any T Any N	The cancer is any size and may or may not be growing outside the bile duct or into nearby blood vessels (Any T). It may or may not have spread to nearby lymph nodes (Any N).

	M1	It has spread to distant organs such as the bones, lungs, or distant parts of the liver (M1).
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*The **T** categories are described in the table above, except for:

- **TX**: Main tumor cannot be assessed due to lack of information.
- **T0**: No sign of a primary tumor.

The **N** categories are described in the table above, except for:

- **NX**: Nearby lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/bile-duct-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html

References

American Joint Committee on Cancer. Perihilar Bile Ducts. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 311-316.

References

American Joint Committee on Cancer. Perihilar Bile Ducts. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 311-316.

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Staging of Distal Bile Duct Cancers

After a person is diagnosed with distal bile duct cancer, doctors will try to figure out if it has spread, and if so, how far. This process is called **staging**. The stage of a cancer describes how much cancer is in the body. It helps determine how serious the cancer is and how best to [treat](#)¹ it. Doctors also use a cancer's stage when talking about survival

statistics.

The earliest stage distal bile duct cancers are **stage 0, also called carcinoma in situ (CIS) or high-grade biliary intraepithelial neoplasia**. Stages then range from stages I (1) through IV (4). As a rule, the lower the number, the less the cancer has spread. A higher number, such as stage IV, means cancer has spread more. And within a stage, an earlier letter means a lower stage.

Although each person's cancer experience is unique, cancers with similar stages tend to have a similar outlook and are often treated in much the same way.

How is the stage determined?

The staging system most often used for distal bile duct cancer is the American Joint Committee on Cancer (AJCC) **TNM** system, which is based on 3 key pieces of information:

- The extent (size) of the main **tumor (T)**: Has the cancer grown through the wall of the bile duct? Has the cancer reached nearby structures or organs?
- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant lymph nodes or distant organs such as the bones, lungs, or peritoneum (the lining of the abdomen [belly])?

The system described below is the most recent AJCC system, effective January 2018. It's used only for **distal bile duct cancers** (those starting below the gallbladder). Staging systems for cancers starting in other parts of the bile ducts are described in:

- [Intrahepatic Bile Duct Cancer Stages](#) (for cancers starting in bile ducts within the liver)
- [Perihilar \(Hilar\) Bile Duct Cancer Stages](#) (for cancers starting in the hilum, just outside the liver)

Numbers or letters after T, N, and M provide more details about each of these factors. Higher numbers mean the cancer is more advanced.

Once a person's T, N, and M categories have been determined, this information is combined in a process called **stage grouping** to assign an overall stage. For more on

this, see [Cancer Staging](#)².

Distal bile duct cancer is typically given a **clinical stage** based on the results of a physical exam, biopsy, and imaging tests (described in [Tests for Bile Duct Cancer](#)). If surgery is done, the **pathologic stage** (also called the **surgical stage**) is determined by examining the tissue removed during the operation.

Cancer staging can be complex, so ask your doctor to explain it to you in a way you understand.

Stages of distal bile duct cancer

AJCC Stage	Stage grouping	Stage description*
0	Tis	The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It hasn't started growing into the deeper layers (Tis).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
I	T1	The cancer has grown less than 5 mm (about 1/5 of an inch) into the bile duct wall (T1).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
IIA	T2	The cancer has grown between 5 mm (about 1/5 of an inch) and 12 mm (about 1/2 inch) into the bile duct wall (T2).
	N0	It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	M0	
	OR	
	T1	The cancer has grown less than 5 mm (about 1/5 of an inch) into the bile duct wall (T1) and has spread to 1 to 3 nearby lymph nodes (N1).
N1		
M0	It has not spread to distant sites (M0).	

IIB	T3 N0 M0	The cancer has grown more than 12 mm (about ½ inch) into the bile duct wall (T3). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).
	OR	
	T2 or T3 N1 M0	The cancer has grown 5 mm (about 1/5 of an inch) or more into the bile duct wall (T2 or T3) and has spread to 1 to 3 nearby lymph nodes (N1). It has not spread to distant sites (M0).
IIIA	T1, T2, or T3 N2 M0	The cancer has grown to any depth into the bile duct wall (T1, T2, or T3) and to 4 or more nearby lymph nodes (N2). It has not spread to distant sites (M0).
IIIB	T4 Any N M0	The cancer is growing into nearby blood vessels (the celiac artery or its branches, the superior mesenteric artery, and/or the common hepatic artery) (T4). The cancer may or may not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).
IV	Any T Any N M1	The cancer has grown to any depth within the bile duct wall and may or may not be growing into nearby blood vessels (Any T). It may or may not have spread to nearby lymph nodes (any N). It has spread to distant organs such as the liver, lungs, or peritoneum (inner lining of the abdomen [belly]) (M1).

*The T categories are described in the table above, except for:

- TX: Main tumor cannot be assessed due to lack of information.

The N categories are described in the table above, except for:

- NX: Nearby lymph nodes cannot be assessed due to lack of information.

Hyperlinks

1. www.cancer.org/cancer/bile-duct-cancer/treating.html
2. www.cancer.org/treatment/understanding-your-diagnosis/staging.html

References

American Joint Committee on Cancer. Distal Bile Duct. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 317-325.

References

American Joint Committee on Cancer. Distal Bile Duct. In: *AJCC Cancer Staging Manual*. 8th ed. New York, NY: Springer; 2017: 317-325.

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Survival Rates for Bile Duct Cancer

Survival rates can give you an idea of what percentage of people with the same type and stage of cancer are still alive a certain amount of time (usually 5 years) after they were diagnosed. They can't tell you how long you will live, but they may help give you a better understanding of how likely it is that your treatment will be successful.

Keep in mind that survival rates are estimates and are often based on previous outcomes of large numbers of people who had a specific cancer, but they can't predict what will happen in any particular person's case. These statistics can be confusing and may lead you to have more questions. Talk with your doctor about how these numbers may apply to you, as he or she is familiar with your situation.

What is a 5-year relative survival rate?

A **relative survival rate** compares people with the same type and stage of cancer to people in the overall population. For example, if the **5-year relative survival rate** for a specific stage of bile duct cancer (cholangiocarcinoma) is 30%, it means that people who have that cancer are, on average, about 30% as likely as people who don't have

that cancer to live for at least 5 years after being diagnosed.

Where do these numbers come from?

The American Cancer Society relies on information from the **Surveillance, Epidemiology, and End Results (SEER) database**, maintained by the National Cancer Institute (NCI), to provide survival statistics for different types of cancer.

The SEER database tracks 5-year relative survival rates for bile duct cancer in the United States, based on how far the cancer has spread. The SEER database, however, does not group cancers by [AJCC TNM stages](#) (stage 1, stage 2, stage 3, etc.). Instead, it groups cancers into localized, regional, and distant stages:

- **Localized:** There is no sign that the cancer has spread outside of the bile ducts.
- **Regional:** The cancer has spread outside the bile ducts to nearby structures or lymph nodes.
- **Distant:** The cancer has spread to distant parts of the body, such as the lungs.

5-year relative survival rates for bile duct cancer

These numbers are based on people diagnosed with cancers of the bile duct between 2009 and 2015. They are divided into intrahepatic and extrahepatic bile duct cancers.

Intrahepatic bile duct cancers (those starting within the liver)

SEER stage	5-year relative survival rate
Localized	24%
Regional	7%
Distant	2%
All SEER stages combined	8%

Extrahepatic bile duct cancers (those starting outside the liver)

(This includes both perihilar and distal bile duct cancers.)

SEER stage	5-year relative survival rate
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Localized	15%
Regional	16%*
Distant	2%
All SEER stages combined	10%

*The 5-year survival for these tumors at the regional stage is slightly better than for the localized stage, although the reason for this is not exactly clear.

Understanding the numbers

- **These numbers apply only to the stage of the cancer when it is first diagnosed.** They do not apply later on if the cancer grows, spreads, or comes back after treatment.
- **These numbers don't take everything into account.** Survival rates are grouped based on how far the cancer has spread. But other factors, such as your age and overall health, and how well the cancer responds to treatment, can also affect your outlook.
- **People now being diagnosed with bile duct cancer may have a better outlook than these numbers show.** Treatments improve over time, and these numbers are based on people who were diagnosed and treated at least five years earlier.

References

Howlander N, Noone AM, Krapcho M, et al (eds). SEER Cancer Statistics Review, 1975-2016, National Cancer Institute, Bethesda, MD, https://seer.cancer.gov/csr/1975_2016/, based on November 2018 SEER data submission, posted to the SEER website, April 2019.

See all references for Bile Duct Cancer (www.cancer.org/cancer/bile-duct-cancer/references.html)

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Questions to Ask About Bile Duct Cancer

It's important to have honest, open discussions with your cancer care team. They want to answer all of your questions, no matter how minor they might seem. Don't be afraid to ask them. Here are some questions to get you started:

- Has my cancer spread beyond the bile ducts?
- What is the [stage](#) of my cancer, and what does that mean in my case?
- Do I need [other tests](#) before we consider treatment options?
- Do I need to see any other kinds of doctors?
- How much experience do you have treating this type of cancer?
- Should I get a [second opinion](#)¹?
- What are my [treatment options](#)²?
- Can my cancer be removed with [surgery](#)³?
- What do you recommend and why?
- What is the goal of treatment?
- What risks or side effects are there to the treatments you suggest? How long are they likely to last?
- How quickly do we need to decide on treatment?
- What should I do to be ready for treatment?
- How long will treatment last? What will it be like? Where will it be done?
- How will treatment affect my daily activities?
- What are the chances my cancer can be cured with these treatment plans?
- What would my options be if the treatment doesn't work or if the cancer comes back?
- What type of [follow-up](#)⁴ might I need after treatment?
- Where can I get more information and support?

Along with these sample questions, be sure to write down some of your own. For instance, you might want more information about recovery times so you can plan your work or activity schedule. Or you might want to ask about qualifying for [clinical trials](#)⁵.

Keep in mind that doctors are not the only ones who can give you information. Other [health care professionals](#)⁶, such as nurses and social workers, may have the answers to some of your questions. You can find out more about speaking with your health care team in [The Doctor-Patient Relationship](#)⁷.

Hyperlinks

1. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/seeking-a-second-opinion.html
2. www.cancer.org/cancer/bile-duct-cancer/treating.html
3. www.cancer.org/cancer/bile-duct-cancer/treating/surgery.html
4. www.cancer.org/cancer/bile-duct-cancer/after-treatment.html
5. www.cancer.org/treatment/treatments-and-side-effects/clinical-trials.html
6. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/health-professionals-associated-with-cancer-care.html
7. www.cancer.org/treatment/finding-and-paying-for-treatment/choosing-your-treatment-team/the-doctor-patient-relationship.html

References

See all references for Bile Duct Cancer (www.cancer.org/cancer/bile-duct-cancer/references.html)

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