Bile Duct Cancer Early Detection, Diagnosis, and Staging

Detection and Diagnosis

Catching cancer early often allows for more treatment options. Some early cancers may have signs and symptoms that can be noticed, but that is not always the case.

- Can Bile Duct Cancer Be Found Early?
- Signs and Symptoms of Bile Duct Cancer
- How is Bile Duct Cancer Diagnosed?

Stages and Outlook (Prognosis)

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

- Bile Duct Cancer Stages
- Survival Statistics for Bile Duct Cancers
- Resectable Versus Unresectable Bile Duct Cancers

Questions to Ask About Bile Duct Cancer

Here are some questions you can ask your cancer care team to help you better understand your AML diagnosis and treatment options

- What Should You Ask Your Doctor About Bile Duct Cancer?

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 early 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

See all references for Bile Duct Cancer

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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 might be more effective.

When bile duct cancer does cause symptoms, it is usually because a bile duct is blocked.

Jaundice

Jaundice is yellowing of the skin and eyes. 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. This can often be seen in the skin and the white part of the eyes.
Jaundice is the most common symptom of bile duct cancer, but most cases of jaundice are not caused by cancer. Jaundice is 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 usually do not cause pain, but more advanced cancers may cause abdominal 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 dieting).

**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. They are often seen along with a fever.

Bile duct cancer is not common, and these symptoms and signs are more likely to be caused by something other than bile duct cancer. For example, people with gallstones may have many of these same symptoms. There are many far more common causes of abdominal pain than bile duct cancer. And 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 your doctor right away so the cause can be found and treated, if needed.

- References
  See all references for Bile Duct Cancer

How is Bile Duct Cancer Diagnosed?

Most bile duct cancers are not found until patients go to a doctor because they have symptoms. The doctor will need to take a history and do a physical exam, and then might order some tests.

History and physical exam

If there is reason to suspect that you might have bile duct cancer, your doctor will want to take a 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 to check for
any lumps, tenderness, or buildup 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, other tests will be done. These could include lab tests, imaging tests, and other procedures.

**Blood tests**

**Tests of liver and gallbladder function**

The doctor may order lab tests to find out how much bilirubin is in the blood. Bilirubin is the chemical that causes jaundice. Problems in the bile ducts, gallbladder, or liver can raise the blood level of bilirubin. A high bilirubin level tells the doctor that there may be problems with the bile duct, gallbladder, or liver.

Along with tests for bilirubin, the doctor may also order tests for albumin, for liver enzymes (alkaline phosphatase, AST, ALT, and GGT), and certain other substances in your blood. These are sometimes called liver function tests. They can indicate 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 is 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 CEA and CA 19-9 tumor markers. High amounts of these substances 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 do not always mean cancer is not present.

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 tell how well treatment is working.

**Imaging tests**

Imaging tests 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 help find suspicious areas that might be cancer
• To help a doctor guide a biopsy needle into a suspicious area to take a sample
• To learn how far cancer has spread
• 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 benign problem such as scarring.

People who have (or might have) bile duct cancer may have one or more of the following tests.

**Ultrasound**

For this test, a small, microphone-like instrument called a *transducer* gives off sound waves and picks up their echoes as they bounce off organs inside the body. The echoes are converted by a computer into an image on a screen. The echo patterns can help find tumors and show how far they have grown into nearby areas. They can also help tell whether some tumors are benign or malignant.

**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.

This is an easy test to have and does not use radiation. You simply lie on a table while the doctor or ultrasound technician moves the transducer along the skin over the right upper part of the abdomen. Usually, the skin is first lubricated with gel.

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 known as an *ultrasound-guided needle biopsy*.

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

If there is 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 taken as well.

**Computed tomography (CT) scan**

The CT scan uses x-rays to make detailed cross-sectional images of your body. Instead of taking one x-ray, a CT scanner takes many pictures as it rotates around you. A computer then combines these into images of slices of the part of your body that is being studied.

CT scans can have several uses:

- They often help diagnose bile duct cancer by showing tumors in the area.
- They can 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 is a treatment option.
- CT scans can also be used to guide a biopsy needle into a suspected tumor or metastasis. For this procedure, called a **CT-guided needle biopsy**, the patient remains on the CT scanning table, while the doctor advances a biopsy needle through the skin and toward the mass. CT scans are repeated until the needle is within the mass. A biopsy sample is then removed and looked at under a microscope.

**Magnetic resonance imaging (MRI) scan**

Like CT scans, MRI scans provide 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 better see details.

MRI scans provide a great deal of detail and can be very helpful in looking at the bile ducts and nearby organs. Sometimes they can help tell a benign tumor from a cancerous one.

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 in the section on cholangiography.
- **MR angiography (MRA)** looks at blood vessels and is mentioned in the section on
Cholangiography

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

Magnetic resonance cholangiopancreatography (MRCP): This is a non-invasive way to image the bile ducts using the same type of machine used for standard MRI scans. It does not require an endoscope or an IV infusion of a contrast agent, unlike the other types of cholangiograms. Because it is non-invasive, doctors often use MRCP if the purpose of the test is just to image the bile ducts. But 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 the throat, through the esophagus and 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 from the end of the endoscope and into the common bile duct. A small amount of contrast dye is injected through the tube to help 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 to be looked at under a microscope. ERCP can also be used to place a stent (a small tube) into a duct to help keep it open.

Percutaneous transhepatic cholangiography (PTC): In this procedure, the doctor places a thin, hollow needle through the skin of the belly and into a bile duct within the liver. You will get medicine through an IV line to make you sleepy before the test. A local anesthetic is also used to numb the area before inserting 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 approach can also be used to take samples of fluid or tissues or to place stents (small tubes) in the bile duct to help keep it open. Because it is more invasive (and might cause more pain), PTC is not usually used unless ERCP has already been tried or can't be done for some reason.

Angiography
Angiography is an x-ray procedure for looking at blood vessels. For this test, a small amount of contrast dye is injected into an artery to outline blood vessels before x-ray images are taken. The images show if blood flow in an area is blocked or affected by a tumor, and any abnormal blood vessels in the area. The test can also show if a bile duct cancer has grown through the walls of certain blood vessels. This information is mainly used to help surgeons decide whether a cancer can be removed and to help plan the operation.

X-ray angiography can be uncomfortable because the doctor has to put a small catheter (a flexible hollow tube) into the artery leading to the bile ducts to inject the dye. Usually the catheter is put into an artery in your inner thigh and threaded up into the artery supplying the bile ducts. A local anesthetic is often used to numb the area before inserting the catheter. Then the dye is injected quickly to outline all the vessels while the x-rays are being taken.

Angiography can also be done with a CT scanner (CT angiography) or an MRI scanner (MR angiography). These techniques are now 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 the bloodstream during the imaging.

Other tests

Doctors may also place special instruments (endoscopes) into the body to get a more direct look at the bile duct and surrounding areas. The scopes may be passed through small surgical incisions or through natural body openings like the mouth.

Laparoscopy

Laparoscopy is a type of minor surgery. The doctor inserts a thin tube with a light and a small video camera on the end (a laparoscope) through a small cut in the front of the abdomen to look at the bile duct, gallbladder, liver, and other organs and tissues in the area. (Sometimes more than one cut is made.) This procedure is typically done in the operating room while you are under general anesthesia (in a deep sleep).

Laparoscopy can help doctors plan surgery or other treatments, and can help assess the stage (extent) of the cancer. If needed, doctors can also insert instruments through the incisions to remove small biopsy samples to be looked at under a microscope. This procedure 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 (ultrasound, CT or MRI scans, cholangiography, etc.) might suggest that a bile duct cancer is present, but in many cases a sample of bile duct cells or tissue is removed (biopsied) and looked at under a microscope to be sure of the diagnosis.

But a biopsy may not always be done before surgery for a possible bile duct cancer. If imaging tests suggest there is a tumor in the bile duct, the doctor may decide to proceed directly to surgery and to treat it as a bile duct cancer (see the section “Surgery for bile duct cancer”).

**Types of biopsies**

There are several 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 tumor cells within the fluid.

Bile duct cells and tiny fragments of bile duct tissue can also be sampled 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, which are then looked at under a microscope.

**During cholangioscopy:** Biopsy specimens can also be taken during cholangioscopy. This 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 inserted through the skin and into the tumor without first making a surgical incision. (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, a sample is drawn into the needle and sent to the lab to be viewed under a microscope.
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 provide enough cells for a definite diagnosis, so a core needle biopsy may be done, which uses a slightly larger needle to get a bigger sample.

For more information about biopsies and how they are tested, see Testing Biopsy and Cytology Specimens for Cancer.

- References
  See all references for Bile Duct Cancer

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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 it. Doctors also use a cancer's stage when talking about survival statistics.

The stage is determined by the results of the physical exam, imaging and other tests (described in How Is Bile Duct Cancer Diagnosed?), and by the results of surgery 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
No matter where they are, 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, or other structures. It might also enter the nearby lymphatic or blood vessels, from which it can spread to nearby lymph nodes or to other parts of the body.

The TNM system for all bile duct cancers is based on 3 key pieces of information:

- **T** describes whether the main (primary) tumor has invaded through the wall of the bile duct and whether it has invaded other nearby organs or tissues.
- **N** describes whether the cancer spread to nearby (regional) lymph nodes (bean-
sized collections of immune system cells throughout the body).

- **M** indicates whether the cancer has **metastasized** (spread) to other organs of the body. (The most common sites of bile duct cancer spread are the liver, peritoneum [the lining of the abdominal cavity], and the lungs.)

For more detailed staging information on a type of bile duct cancer, click on one of the links above.

- **References**
  See all references for Bile Duct Cancer

**Staging of Intrahepatic Bile Duct Cancers**

After someone 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** 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), and 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)?

The system described below is the most recent AJCC system, effective January 2018. It is 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 information, see Cancer Staging.

Intrahepatic bile duct cancer is typically given a clinical stage based on the results of a physical exam, biopsy, and imaging tests (as described in How Is Bile Duct Cancer Diagnosed?). If surgery is done, the pathologic stage (also called the surgical stage) is determined by examining 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

<table>
<thead>
<tr>
<th>AJCC Stage</th>
<th>Stage grouping</th>
<th>Stage description*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Tis N0 M0</td>
<td>The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It has not started growing into the deeper layers (Tis). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td>IA</td>
<td>T1a N0</td>
<td>The tumor is no more than 5 cm (about 2 inches) across and has not invaded nearby blood vessels (T1a).</td>
</tr>
<tr>
<td>Stage</td>
<td>T Category</td>
<td>N Category</td>
</tr>
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<td>-------</td>
<td>------------</td>
<td>------------</td>
</tr>
<tr>
<td>IB</td>
<td>T1b</td>
<td>N0</td>
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<tr>
<td>II</td>
<td>T2</td>
<td>N0</td>
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<tr>
<td>IIIA</td>
<td>T3</td>
<td>N0</td>
</tr>
<tr>
<td>IIIB</td>
<td>T4</td>
<td>N0</td>
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<td></td>
<td>Any T</td>
<td>N1</td>
</tr>
<tr>
<td>IV</td>
<td>Any T</td>
<td>Any N</td>
</tr>
</tbody>
</table>

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

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

- References
Staging of Perihilar Bile Duct Cancers

After someone 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 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, and 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)?
The system described below is the most recent AJCC system, effective January 2018. It is 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 information, see [Cancer Staging](#).

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

<table>
<thead>
<tr>
<th>AJCC Stage</th>
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<th>Stage description*</th>
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</thead>
<tbody>
<tr>
<td>0</td>
<td>Tis N0 M0</td>
<td>The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It has not started growing into the deeper layers (Tis). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td>I</td>
<td>T1 N0 M0</td>
<td>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).</td>
</tr>
<tr>
<td>II</td>
<td>T2a or T2b N0 M0</td>
<td>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).</td>
</tr>
<tr>
<td>IIIA</td>
<td>T3 N0 M0</td>
<td>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).</td>
</tr>
<tr>
<td>Stage</td>
<td>T, N, M</td>
<td>Description</td>
</tr>
<tr>
<td>--------</td>
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</tr>
<tr>
<td>IIIA</td>
<td>T1 N0 M0</td>
<td>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 (T1). The cancer has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td>IIIB</td>
<td>T4 N0 M0</td>
<td>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).</td>
</tr>
<tr>
<td>IIIC</td>
<td>Any T N1 M0</td>
<td>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 spread to 1 to 3 nearby lymph nodes (N1) but not to distant sites (M0).</td>
</tr>
<tr>
<td>IVA</td>
<td>Any T N2 M0</td>
<td>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 spread to 4 or more nearby lymph nodes (N2) but not to distant sites (M0).</td>
</tr>
<tr>
<td>IVB</td>
<td>Any T Any N M1</td>
<td>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). It has spread to distant organs such as the bones, lungs, or distant parts of the liver (M1).</td>
</tr>
</tbody>
</table>

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

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

References


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Staging of Distal Bile Duct Cancers

After someone 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 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, and 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 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)?

The system described below is the most recent AJCC system, effective January 2018. It is 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 information, see Cancer Staging.

Distal bile duct cancer is typically given a clinical stage based on the results of a physical exam, biopsy, and imaging tests (as described in How Is Bile Duct Cancer Diagnosed?). If surgery is done, the pathologic stage (also called the surgical stage) is determined by examining 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

<table>
<thead>
<tr>
<th>AJCC Stage</th>
<th>Stage grouping</th>
<th>Stage description*</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Tis N0 M0</td>
<td>The cancer is only in the mucosa (the innermost layer of cells in the bile duct). It has not started growing into the deeper layers (Tis). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td>I</td>
<td>T1 N0 M0</td>
<td>The cancer has grown less than 5 mm (about 1/5 of an inch) into the bile duct wall (T1). It has not spread to nearby lymph nodes (N0) or to distant sites (M0).</td>
</tr>
<tr>
<td>IIA</td>
<td>T2 N0 M0</td>
<td>The cancer has grown between 5 mm (about 1/5 of an inch) and 12 mm (about ½ inch) into the bile duct wall (T2). It has not spread to nearby lymph nodes (N0) or to distant sites (M0). OR T1 N1 M0 The cancer has grown less than 5 mm (about 1/5 of an inch) into the bile duct wall (T1). It has spread to 1 to 3 nearby lymph nodes (N1), but not to distant sites (M0).</td>
</tr>
<tr>
<td>IIB</td>
<td>T3 N0 M0</td>
<td>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 The cancer has grown at least 5 mm (about 1/5 of an inch) into the bile duct wall (T2 or T3).</td>
</tr>
</tbody>
</table>
I

<table>
<thead>
<tr>
<th>Stage</th>
<th>T Category</th>
<th>N Category</th>
<th>M Category</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>IIA</td>
<td>T1, T2, or T3</td>
<td>N2</td>
<td>M0</td>
<td>The cancer has grown to any depth within the bile duct wall (T1, T2, or T3). It has spread to 4 to 4 nearby lymph nodes (N2), but not to distant sites (M0).</td>
</tr>
<tr>
<td>IIIB</td>
<td>T4</td>
<td>Any N</td>
<td>M0</td>
<td>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 might or might not have spread to nearby lymph nodes (Any N). It has not spread to distant sites (M0).</td>
</tr>
<tr>
<td>IV</td>
<td>Any T</td>
<td>Any N</td>
<td>M1</td>
<td>The cancer has grown to any depth within the bile duct and may or may not be growing into nearby blood vessels (Any T). It might or might 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) (M1).</td>
</tr>
</tbody>
</table>

*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.

References


Survival Statistics for Bile Duct Cancers

Survival rates are often used by doctors as a standard way of discussing a person’s prognosis (outlook). Some people may want to know the survival statistics for people in similar situations, while others might not find the numbers helpful, or might even not
want to know them. If you decide that you don’t want to know them, stop reading here and skip to the next section.

When discussing cancer survival statistics, doctors often use a number called the 5-year survival rate. The 5-year survival rate refers to the percentage of patients who live at least 5 years after their cancer is diagnosed. Of course, some of these people live much longer than 5 years.

Five-year relative survival rates, such as the numbers below, assume that some people will die of other causes and compare the observed survival with that expected for people without the cancer. This is a better way to see the impact of the cancer on survival.

To get 5-year survival rates, doctors have to look at people who were treated at least 5 years ago. Improvements in treatment since then may result in a better outlook for people now being diagnosed with bile duct cancer.

There are some important points to note about the survival rates below:

These statistics come from the National Cancer Institute’s SEER program and are based on people diagnosed with bile duct cancer in the years 2000 to 2006. SEER does not separate these cancers by AJCC stage, but instead puts them into 3 groups: localized, regional, and distant. Localized is like AJCC stage I. Regional includes stages II and III. Distant means the same as stage IV.

SEER also does not separate perihilar bile duct cancers from distal bile duct cancers. Instead, these are grouped together as extrahepatic bile duct cancers.

### Intrahepatic bile duct cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year relative survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>15%</td>
</tr>
<tr>
<td>Regional</td>
<td>6%</td>
</tr>
<tr>
<td>Distant</td>
<td>2%</td>
</tr>
</tbody>
</table>

### Extrahepatic bile duct cancer

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year relative survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Localized</td>
<td>30%</td>
</tr>
</tbody>
</table>
Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they can’t predict what will happen with any particular person. Many other factors can also affect a person’s outlook, such as their age and overall health, and how well the cancer responds to treatment. Even when taking these other factors into account, survival rates are at best rough estimates. Your doctor can tell you how the numbers above apply to you, as he or she knows your situation best.

- References

See all references for Bile Duct Cancer

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Resectable Versus Unresectable Bile Duct Cancers

The TNM staging system provides a detailed summary of how far the 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 likely be removed (resected) with surgery:

- **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 also depends on other factors, such as the size and location of the cancer and whether a person is healthy enough for surgery.

- References
What Should You Ask Your Doctor About Bile Duct Cancer?

It is important to have frank, open discussions with your cancer care team. They want to answer all of your questions, no matter how minor they might seem. For example, consider these questions:

- Where exactly is my cancer?
- Has my cancer spread beyond the bile ducts?
- What is the stage of my cancer, and what does that mean to me?
- Will 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?
- What treatment choices do I have?
- Can my cancer be removed with surgery?
- 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 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 might I need after treatment?
- Where can I go for information and support?
Along with these sample questions, be sure to write down some of your own. For instance, you might want to ask about clinical trials for which you may qualify.

Keep in mind that doctors are not the only ones who can provide you with information. Other health care professionals, 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.

- References

See all references for Bile Duct Cancer

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