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# Gallbladder Cancer Early Detection, Diagnosis, and Staging

Know the signs and symptoms of gallbladder cancer. Find out how gallbladder cancer is tested for, diagnosed, and staged.

## 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 Gallbladder Cancer Be Found Early?](#)
- [Signs and Symptoms of Gallbladder Cancer](#)
- [Tests for Gallbladder 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.

- [Gallbladder Cancer Stages](#)
- [Survival Rates for Gallbladder Cancer](#)

## Questions to Ask About Gallbladder Cancer

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

- [Questions to Ask About Gallbladder Cancer](#)

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## Can Gallbladder Cancer Be Found Early?

Gallbladder cancer is hard to find early (when it's small and only in the gallbladder). The gallbladder is 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 gallbladder cancers early enough to be useful as screening tests. (Screening is testing for cancer in people without any symptoms.) Because of this, most gallbladder cancers are found only after the cancer has grown enough to cause signs or symptoms.

Still, some gallbladder cancers are found before they have spread to other tissues and

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## Signs and Symptoms of Gallbladder

# Cancer

Gallbladder cancer doesn't usually cause signs or symptoms until later in the course of the disease, when the tumor is large and/or has spread. But sometimes symptoms can appear sooner and lead to an early diagnosis. If the cancer is found at an earlier [stage](#), treatment might work better.

- [Abdominal \(belly\) pain](#)

## Other symptoms

Less common symptoms of gallbladder cancer include:

- Loss of appetite
- Weight loss
- Swelling in the abdomen (belly)
- Fever
- Itchy skin
- Dark urine
- Light-colored or greasy stools

**Keep in mind: Gallbladder cancer is rare. These symptoms are more likely to be caused by something other than gallbladder cancer.** For example, people with gallstones have many of these same symptoms. And there are many far more common causes of belly pain than gallbladder cancer. Also, hepatitis (liver inflammation caused by a viral infection) 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.

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# Tests for Gallbladder Cancer

gallstones or to treat chronic (long-term) inflammation. Gallbladders removed for those reasons are always looked at under a microscope to see if there's cancer cells in them.

Most gallbladder cancers, though, aren't found until a person goes to a doctor because they have [symptoms](#).

- [Medical history and physical exam](#)
- [Blood tests](#)
- [Imaging tests](#)
- [Laparoscopy](#)
- [Biopsy](#)

## Medical history and physical exam

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

Your doctor will examine you to look for signs of gallbladder cancer and other health problems. The exam will focus mostly on the abdomen (belly) to check for any lumps, tenderness, or fluid build-up. The skin and the white part of the eyes will be checked for jaundice (a yellowish color). The stool and urine will be checked for change in color. Sometimes, cancer of the gallbladder spreads to [lymph nodes](#)<sup>1</sup>, causing a lump that can be felt beneath the skin. Lymph nodes above the collarbone and in several other locations may be checked.

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

## Blood tests

### Tests of liver and gallbladder function

[Lab tests](#)<sup>2</sup> might be done to find out how much bilirubin is in your blood. Bilirubin is the chemical that causes jaundice. Problems in the gallbladder, bile ducts, 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), coagulation studies (PT, PTT, INR) and certain other substances in your blood. Some of these tests are called **liver function tests**. They can help diagnose

liver, bile duct, or gallbladder disease.

## Tumor markers

Tumor markers are substances made by cancer cells that can sometimes be found in the blood. People with gallbladder cancer may have high blood levels of the markers called *CEA* and *CA 19-9*. Usually the blood levels of these markers are high only when the cancer is in an advanced stage. These markers are not specific for gallbladder cancer – that is, other cancers or even some other health conditions also can make them go up.

These tests can sometimes be useful after a person is diagnosed with gallbladder 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](#)<sup>3</sup> 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

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

### Ultrasound

[Ultrasound](#)<sup>4</sup> 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 their 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 like jaundice or pain in the right upper part of their abdomen (belly). This is



[Laparoscopy](#)<sup>7</sup> is a type of surgery. The doctor puts a thin tube with a light and a small video camera on the end (a laparoscope) into a small incision (cut) in the front of your abdomen (belly) to look at the gallbladder, liver, and other nearby organs and tissues. Sometimes more than one cut is made. This is usually done in the operating room with general anesthesia (drugs are used to put you into a deep sleep and not feel pain during the surgery).

Laparoscopy can help doctors plan surgery or other treatments, and can help them determine the [stage](#) (extent) of the cancer. If needed, doctors can also put special instruments in through the incisions to take out biopsy samples for testing.

Laparoscopy is often used to take out your gallbladder. This operation is called a **laparoscopic cholecystectomy**. If gallbladder cancer is found or suspected during that operation, surgeons usually change to an **open cholecystectomy** (removal of the gallbladder through a larger cut in the abdomen). The open method lets the surgeon see more and may lower the chance of releasing cancer cells into the abdomen when the gallbladder is removed. The use of the open procedure depends on the size of the cancer and whether surgery can remove it all.

## Biopsy

During a biopsy, the doctor removes a tissue sample to be looked at with a microscope to see if cancer (or some other disease) is present. If gallbladder cancer is suspected, a biopsy is usually not done before surgery to remove the gallbladder. This is because doctors are often concerned that sticking a needle into the tumor or otherwise disturbing it without completely removing it might allow cancer cells to spread.

If imaging tests show a tumor in the gallbladder and there are no clear signs that it has spread, the doctor might decide to proceed directly to surgery to remove the suspected gallbladder tumor. (See [Surgery for Gallbladder Cancer](#)<sup>8</sup>.) In this case, the gallbladder is checked for cancer after it's been removed.

In other cases, a doctor may feel that a biopsy of a suspicious area is the best way to know for sure if it's cancer. For example, imaging tests may show that a tumor has spread or grown too large to be removed completely by surgery. Many gallbladder cancers are not removable by the time they're first found.

**Needle biopsy:** If the cancer is too big or has spread too much to be removed with surgery, a needle biopsy may be done to confirm the diagnosis and help guide treatment. For this test, the skin is numbed with a local anesthetic, and a thin, hollow needle is put in through the skin and into the tumor without making a cut in the skin. 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 information on biopsies and how samples are tested, see [Biopsy and Cytology Tests](#)<sup>9</sup>.

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## Gallbladder Cancer Stages

After a person is diagnosed with gallbladder 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](#) <sup>1</sup>[it](#)<sup>2</sup>. Doctors also use a cancer's stage when talking about survival statistics.

- [How is the stage determined?](#)
- [Other prognostic factors](#)

The earliest stage gallbladder cancers (called **carcinoma in situ**) are **stage 0**. 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.

Nearly all gallbladder cancers start in the epithelium (the inside wall of the gallbladder). Over time they grow through the various layers toward the outside of the gallbladder. They may also grow to fill up some or all the space inside the gallbladder at the same

time.

## How is the stage determined?

The staging system most often used for gallbladder 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 **tumor (T)**: How far has the cancer grown into the wall of the gallbladder? Has the cancer grown through the gallbladder wall into nearby organs such as the liver? The gallbladder wall has several layers. From the inside out, these are: The **epithelium**, a thin sheet of cells that line the inside wall of the gallbladderThe **lamina propria**, a thin layer of loose connective tissue (the epithelium plus the lamina propria form the **mucosa**)The **muscularis**, a layer of muscular tissue that helps the gallbladder contract, squirting its bile into the bile ductThe **perimuscular** (around the muscle) fibrous tissue, another layer of connective tissueThe **serosa**, the outer covering of the gallbladder that comes from the peritoneum, which is the lining of the abdominal cavity

- The spread to nearby lymph **nodes (N)**: Has the cancer spread to nearby lymph nodes and if so, how many?
- The spread (**metastasis**) to distant sites (**M**): Has the cancer spread to distant organs such as the liver, the peritoneum (the lining of the abdominal cavity), or the lungs?

The system described below is the most recent AJCC system, effective January 2018. This system is used to stage cancers of the gallbladder as well as cancers that start in the cystic duct (the tube that carries bile away from the gallbladder).

The gallbladder staging system uses the **pathologic stage** (also called the **surgical stage**) which is determined by examining the tissue removed during [an operation](#)<sup>3</sup>. Sometimes, if surgery can't be done right away or at all, the cancer will be given a **clinical stage** instead. This is based on the results of a [physical exam, biopsy, and imaging tests](#). The clinical stage will be used to help plan treatment. Sometimes, though, the cancer has spread further than the clinical stage estimates, and may not predict the patient's outlook as accurately as a pathologic stage.

Numbers or letters after T, N, and M provide more details about each of these factors.



		(M0).
<b>IIIB</b>	<b>T1-3</b> <b>N1</b> <b>M0</b>	The cancer may or may not have grown outside of the gallbladder into the liver and/or one other nearby structure, but it has not grown into the main blood vessels leading into the liver (portal vein or hepatic artery) (T1 to T3). It has spread to no more than 3 nearby lymph nodes (N1).  It has not spread to distant sites (M0).
<b>IVA</b>	<b>T4</b> <b>N0 or N1</b> <b>M0</b>	The tumor has grown into one of the main blood vessels leading into the liver (portal vein or hepatic artery) or it has grown into 2 or more structures outside of the liver (T4). It may or may not have spread to no more than 3 nearby lymph nodes (N0 or N1).  It has not spread to distant sites (M0).
<b>IVB</b>	<b>Any T</b> <b>N2</b> <b>M0</b>	The primary tumor may or may not have grown outside the gallbladder. The cancer has spread to 4 or more nearby lymph nodes (N2).  It has not spread to distant sites (M0).
	<b>OR</b>	
	<b>Any T</b> <b>Any N</b> <b>M1</b>	The primary tumor may or may not have grown outside the gallbladder. The cancer may or may not have spread to nearby lymph nodes.  It has spread to distant sites such as the liver, peritoneum (the lining of the abdomen [belly]), or the lungs (M1).

\* The following additional categories are not listed on the table above:

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

## Other prognostic factors

Besides your stage, there are other factors that can affect your prognosis (outlook).

## Grade

The grade describes how closely the cancer cells look like normal gallbladder cells when seen with a microscope.

The scale used for grading gallbladder cancer is from 1 to 3.

- **Grade 1 (G1)** means the cancer cells look a lot like normal gallbladder cells.
- **Grade 3 (G3)** means the cancer cells looks very abnormal.
- **Grade 2 (G2)** falls somewhere in between.

Low-grade cancers (G1) tend to grow and spread more slowly than high-grade (G3) cancers. Most of the time, the outlook is better for Grade 1 and Grade 2 cancers than it is for Grade 3 cancers of the same stage for gallbladder cancer.

## Subtype

The specific [type of gallbladder cancer](#)<sup>5</sup> you have can influence your outlook. Rare cancer types such as squamous and adenosquamous carcinomas of the gallbladder tend to have a worse prognosis (outlook) than adenocarcinomas (the most common type) and papillary carcinomas.

## Lymphovascular Invasion

If cancer cells are seen in small blood vessels (vascular) or lymph vessels (lymphatics) under the microscope, it's called **lymphovascular invasion**. When cancer is growing in these vessels, there's a greater chance that it has spread outside the gallbladder. Gallbladder cancers with lymphovascular invasion tend to have a poor prognosis.

## Extent of Resection

If the entire gallbladder tumor can be removed with surgery, it can impact the overall outlook. Cancers that can be removed completely by surgery tend to have a better outlook than those that cannot.

- **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.

Only a small percentage of gallbladder cancers are resectable when they're first found.

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# Survival Rates for Gallbladder 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 [gallbladder](#)<sup>1</sup>?
- What's 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](#)<sup>2</sup>?
- What are my [treatment options](#)<sup>3</sup>?
- Can my cancer be removed with [surgery](#)<sup>4</sup>?
- 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](#)<sup>5</sup> might I need after treatment?
- Where can I get more information and support?

Along with these, be sure to write down some questions 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](#)<sup>6</sup>.

Keep in mind that doctors are not the only ones who can provide you with information. Other [health care professionals](#)<sup>7</sup>, 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](#)<sup>8</sup>.

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