Small Intestine 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 Small Intestine Adenocarcinoma Be Found Early?
- Signs and Symptoms of Small Intestine Adenocarcinoma
- How Is Small Intestine Adenocarcinoma 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.

- How Is Small Intestine Adenocarcinoma Staged?
- Survival Rates of Small Intestine Adenocarcinoma, by Stage

Questions to Ask About Small Intestine Cancer

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

- What Should You Ask Your Doctor About Small Intestine Adenocarcinoma?

Can Small Intestine Adenocarcinoma Be Found Early?
If a person is predisposed genetically to develop small intestine adenocarcinoma, tests such as endoscopy can be done to find it early. These tests are discussed in detail in the next section. If someone with a genetic predisposition has symptoms of small intestinal adenocarcinoma, they should be tested immediately.

- References
See all references for Small Intestine Cancer

Last Medical Review: April 30, 2014 Last Revised: February 9, 2016

---

American Cancer Society medical information is copyrighted material. For reprint requests, please see our Content Usage Policy.

**Signs and Symptoms of Small Intestine Adenocarcinoma**

The symptoms of small bowel tumors are often vague. In one study, it took more than 6 months from the time of the first symptom until the diagnosis was made. The most common symptoms are:

- Pain in the belly (abdomen)
- Weight loss (without trying)
- Weakness and fatigue
- Low red blood cell counts (anemia)

Often, the first symptom is pain in the stomach area. This pain may start or get worse after you eat. As the tumor gets larger, it can start to block the passage of digested food. This can lead to increased pain – it may be more intense and last longer. The tumor can cause a condition called *obstruction*. When this happens, the intestine is completely blocked and nothing can move through. This leads to pain with severe nausea and vomiting.

Rarely, a cancer will cause a hole to form in the wall of the intestine (*perforation*). This hole lets the contents of the intestine spill into the abdominal cavity. Symptoms of perforation include sudden severe pain, nausea, and vomiting.

Sometimes a tumor will start bleeding into the intestine. If the bleeding is slow, it could lead to a low red blood cell count (anemia) over time. Symptoms of anemia include
weakness and fatigue. If the bleeding is rapid, the stool can become black and tarry from digested blood and the patient may feel lightheaded or even pass out.

These problems are more often caused by things other than cancer. Still, you should have them checked by your doctor to find the cause.

- References
  See all references for Small Intestine Cancer

Last Medical Review: April 30, 2014 Last Revised: February 9, 2016

How Is Small Intestine Adenocarcinoma Diagnosed?

If there is a reason to suspect you have a small intestinal cancer, the doctor will use one or more methods to find out if the disease is really present.

Medical history and physical exam

When a doctor takes your medical history, you will be asked questions about your symptoms and risk factors. The doctor will specifically ask about symptoms that could be caused by a mass in the intestines and examine you, concentrating on your abdomen looking for any swelling or sounds of the bowel trying to overcome a blockage.

Blood tests

If your doctor suspects an intestine cancer, he or she will likely order some blood tests, such as:

- A complete blood count (CBC), which measures red blood cells, white blood cells, and platelets. Small intestine cancer often causes a low red blood cell count
Blood chemistry tests to look for signs that a cancer has spread to the liver

**Imaging tests**

**Barium x-rays**

For these studies, a liquid containing barium (also called a *contrast liquid*) is swallowed to coat the lining of an area in the intestines or stomach, and then x-rays are taken. The barium helps outline abnormalities in the esophagus, stomach, and intestines, making them more visible. These x-rays are most often used to look at the upper or lower parts of the digestive system, and can help find tumors there. They are least helpful in finding small intestine tumors. Barium studies were used more often before endoscopy was available.

- **Upper GI series:** This test is a way to look at the upper part of the digestive tract. The patient drinks a white, chalky solution containing barium and then x-rays are taken. The barium coats the surface of the esophagus, stomach, and first part of the small intestine so that abnormalities show up on x-ray. To look for problems in the rest of the small intestine, more x-rays can be taken over the next few hours as the barium passes through the intestines. This is called a *small bowel follow-through*. This test often gives good pictures of the first part of the small intestine (the duodenum), but the rest of the small intestine may be hard to see in detail.

- **Enteroclysis:** This procedure gives more detailed pictures of the small intestine than the upper GI with small bowel follow-through. A tube is passed from the nose or mouth through the stomach and into the small intestine. Then, barium is sent through the tube directly into the small intestine. X-rays are taken as the contrast moves through the small intestine.

- **Barium enema:** This is a way to look at the large intestine. Before this test, the bowel needs to be cleaned out. This is done by using strong laxatives and enemas the night before and the morning of the exam. For this test, the barium solution is given into the large intestine through the anus (like an enema). For better pictures, air can be injected into the intestine through a tube. This is called *air contrast*. This procedure is meant to be used to look at the large intestine, but sometimes the last part of the small intestine can be seen as well.

**Computed tomography**
A computed tomography (CT or CAT) scan is an x-ray procedure that makes detailed cross-sectional images of your body. Instead of taking one picture, like a conventional x-ray, a CT scanner takes many pictures as it rotates around you. A computer then combines these pictures into an image of a slice of your body. The machine takes pictures of multiple slices of the part of your body that is being studied.

A CT scanner has been described as a large donut, with a narrow table in the middle opening. You will need to lie still on the table while the scan is being done. CT scans take longer than regular x-rays, and you might feel a bit confined by the ring while the pictures are being taken.

CT scans are often used in people with abdominal pain to try to find the source of the problem. Although small intestine tumors may not be seen well by CT, these scans are good at showing some of the problems that these tumors can cause (like obstruction or perforation). CT scans can also help find areas of cancer spread.

Before the test, you may be asked to drink 1 or 2 pints of a contrast liquid. This helps outline the intestine so that certain areas will not be mistaken for tumors. You may also get an IV (intravenous) line through which a different kind of contrast dye is injected. This helps better outline structures in your body.

The injection can cause some flushing (redness and warm feeling that may last hours to days). A few people are allergic to the dye and get hives. Rarely, more serious reactions like trouble breathing and low blood pressure can occur. Medicine can be given to prevent and treat allergic reactions. Be sure to tell the doctor if you are allergic to shellfish or have ever reacted to any contrast material used for x-rays.

CT scans can also be used to guide a biopsy needle precisely into an abnormal area that could be cancer spread. For this procedure, called a CT-guided needle biopsy, the patient remains on the CT scanning table, while a radiologist moves a biopsy needle toward the location of the mass/tumor. CT scans are repeated until the doctors are confident that the needle is within the mass. A fine-needle biopsy sample (tiny fragment of tissue) or a core-needle biopsy sample (a thin cylinder of tissue about ½-inch long and less than 1/8-inch in diameter) is removed and looked at under a microscope.

**Endoscopy**

**Upper endoscopy**

Upper endoscopy (also called esophagastroduodenoscopy or EGD) is used to look at the esophagus, stomach and duodenum (the first part of the small intestine). This test
uses an endoscope a flexible lighted tube with a video camera on the end. The endoscope goes in through the mouth, and then passes through the throat and the esophagus into the stomach and then into the first part of the small intestine. This allows the doctor to see clearly any masses in the lining of the digestive organs. If abnormalities are found, small pieces of tissue can be removed through the endoscope (biopsy) and looked at under a microscope to see if cancer is present.

Most patients having this test are given medicine to make them sleepy. If this is the case, they will need someone to take them home (not just a cab).

This test is helpful in looking at the first part of the small intestine. Other tests, such as capsule endoscopy and double-balloon enteroscopy, are needed to look at the rest of the small intestine.

**Capsule endoscopy**

This procedure does not actually use an endoscope. Instead, the patient swallows a capsule (about the size of a large vitamin pill) that has a light and a very small camera. Like any other pill, the capsule goes through the stomach and into the small intestine. As it travels through the small intestine (usually over a period of about 8 hours), it takes thousands of pictures. The camera sends the images to a device the person wears around the waist while going on with normal daily activities. The pictures can then be downloaded onto a computer, where the doctor can look at them as a video. The capsule passes out of the body during a normal bowel movement and is flushed away.

**Double-balloon enteroscopy (endoscopy)**

Regular upper endoscopy cannot look very far into the small intestine because it is too long (20 feet) and has too many curves. This method gets around these problems by using a special endoscope that is made up of 2 tubes, one inside the other. The procedure can start like a regular upper endoscopy, with the endoscope going in through the mouth, down the throat and esophagus, and through the stomach into the small intestine. Then the inner tube, which is an endoscope, goes forward a small distance, and then a balloon at its end is inflated to anchor it. Then the outer tube goes forward to near the end of the inner tube and it is then anchored in place with a balloon. This process is repeated over and over, letting the doctor see the intestine a foot at a time. An advantage of this over capsule endoscopy is that the doctor will be able to biopsy anything abnormal.

Another way of doing this is to go through the colon to get to the small intestine, so that it starts out like a regular colonoscopy. If that is done, the patient has to clean out the
colon the night before the procedure. This is most often done by drinking a large amount (2 to 4 quarts) of a liquid laxative solution, which results in spending much of the evening in the bathroom.

Using either approach, this procedure is done after the patient is given drugs to make him or her sleepy (sedation) or even asleep (general anesthesia), so he or she will need someone to take them home (not just a cab).

**Biopsy**

Procedures such as endoscopy and imaging tests can find areas that look like cancer, but the only way to know for certain is to do a biopsy. In a biopsy, a piece of the abnormal area is removed and examined under a microscope.

There are several ways to take a sample of an intestinal tumor. One way is through the endoscope. When a tumor is found, the doctor can use biopsy forceps (pincers or tongs) through the tube to take a small sample of the tumor. The specimen the doctor takes will be very small, but doctors can usually make an accurate diagnosis. Bleeding after a biopsy is a rare but potentially serious problem. If bleeding becomes a problem, doctors can sometimes inject drugs that constrict blood vessels through the endoscope into the tumor to stop the bleeding.

In some patients, surgery is needed to biopsy a tumor in the intestines. This may be done if the tumor cannot be reached with an endoscope.

Sometimes CT scans or other imaging tests are used to guide a needle to biopsy tumors in other organs (like the liver) to see if they are cancer.

**References**

See all references for Small Intestine Cancer

Last Medical Review: April 30, 2014 Last Revised: February 9, 2016
**Staged?**

Staging is a process that tells the doctor how widespread your cancer may be when you are first diagnosed. It will show if the cancer has spread and how far. The treatment and outlook for small intestine cancer depends, to a large extent, on its stage. For early stage cancer, surgery may be all that is needed. For more advanced cancer, other treatments, such as chemotherapy or radiation therapy, may be required. Please be sure to ask your doctor to explain your cancer’s stage so you can make the best choice about your treatment.

The staging system used is that of the American Joint Committee on Cancer (AJCC). It is also called the TNM system. Stages are described using the number 0 (zero) and the Roman numerals I through IV.

This staging system describes the spread of the cancer in relation to the layers of the wall of the small intestine. Because for most patients, this stage is unknown until after surgery, most doctors wait until then to decide on the cancer’s stage. The stages described below are called *pathologic stages*. The pathologic stage is determined by the findings of the pathologist from looking at the cancer and other actual tissue that has been removed.

The AJCC/TNM System describes the extent of the primary tumor (T), the absence or presence of metastasis to nearby lymph nodes (N), and the absence or presence of distant metastasis (M).

**T categories for small intestine adenocarcinoma**

**T** categories of small intestine cancer describe the extent of spread through the layers that form its wall.
These layers, from the inner to the outer, include the lining (mucosa), the fibrous tissue beneath this muscle layer (submucosa), a thick layer of muscle that contracts to force the contents of the intestines along (muscularis propria), and the thin outermost layers of connective tissue (subserosa and serosa) that cover the small intestine. The serosa is also known as the visceral peritoneum.

**Tx:** No description of the tumor’s spread is possible because of incomplete information.

**Tis:** The cancer is only in the epithelium (the top layer of cells of the mucosa) it has not grown into the deeper tissue layers. This is the earliest stage and is also known as carcinoma in situ (CIS).

**T1:** Is split into 2 groups

- **T1a:** The cancer has grown from the top layer of cells of the mucosa and into the layer of connective tissue below (the lamina propria).
- **T1b:** The cancer has grown through the mucosa and into the submucosa

**T2:** The cancer has grown through the mucosa and submucosa into the muscularis propria.

**T3:** The cancer has grown through the inner layers of the intestine wall (mucosa, submucosa, and muscularis propria) into the subserosa. It has not started to grow into any nearby organs or tissues.

**T4:** The cancer has grown through the entire wall of the small intestine (including the serosa). It may be growing into nearby tissues or organs.
N categories for small intestine adenocarcinoma

N categories indicate whether or not the cancer has spread to nearby lymph nodes.

N\text{\textsubscript{x}}: No information about lymph node involvement is available (often because no lymph nodes have been removed).

N\text{\textsubscript{0}}: Lymph nodes near the tumor were checked and do not contain cancer.

N\text{\textsubscript{1}}: Cancer cells found in 1 to 3 nearby lymph nodes.

N\text{\textsubscript{2}}: Cancer cells are found in 4 or more nearby lymph nodes

M categories for small intestine adenocarcinoma

M categories indicate whether or not the cancer has spread to distant organs, such as the liver, lungs, or distant lymph nodes.

M\text{\textsubscript{0}}: No cancer has been found in other organs or tissues.

M\text{\textsubscript{1}}: Cancer has been found in other organs or tissues.

Stage grouping

The T, N, and M categories are combined (in a process called stage grouping) to determine the stage. The stage is expressed in Roman numerals from stage I (the least advanced stage) to stage IV (the most advanced stage). The following guide illustrates how TNM categories are grouped together into stages:

Stage \textbf{0}: T\textsubscript{i}s, N\textsubscript{0}, M\textsubscript{0}

The cancer is in the earliest stage. It has not grown beyond the top layer of cells of the mucosa of the small intestine. This stage is also known as carcinoma \textit{in situ}.

Stage \textbf{I}: T\textsubscript{1} or T\textsubscript{2}, N\textsubscript{0}, M\textsubscript{0}

The cancer has grown from the top layer of cells of the mucosa and into deeper layers such as the lamina propria (T\textsubscript{1a}), the submucosa (T\textsubscript{1b}), or the muscularis propria (T\textsubscript{2}).
It has not spread into nearby lymph nodes (N0) or distant sites (M0).

**Stage IIA: T3 or T4, N0, M0**

The cancer has grown through most of the wall of the small intestine and into the subserosa (T3 or T4). It has not yet spread to nearby lymph nodes (N0) or to distant sites (M0).

**Stage IIB: T4, N0, M0**

The cancer has grown through the wall of the intestine and into the serosa or into nearby tissues or organs (T4). It has not yet spread to nearby lymph nodes (N0) or to distant sites (M0).

**Stage IIIA: Any T, N1, M0**

The cancer has spread to 1 to 3 nearby lymph nodes (N1) but not to distant sites (M0).

**Stage IIIB: Any T, N2, M0**

The cancer has spread to 4 or more nearby lymph nodes (N2) but not to distant sites (M0).

**Stage IV: Any T, Any N, M1**

The cancer has spread to distant sites such as the liver, lung, peritoneum (the membrane lining the abdominal cavity), or ovary.

- [References](#)
  [See all references for Small Intestine Cancer](#)

Last Medical Review: April 30, 2014 Last Revised: February 9, 2016

American Cancer Society medical information is copyrighted material. For reprint requests, please see our [Content Usage Policy](#).
Survival Rates of Small Intestine Adenocarcinoma, by Stage

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

The 5-year survival rate is the percentage of patients who live at least 5 years after their cancer is diagnosed. Of course, many people live much longer than 5 years (and many are cured). Also, people with small intestine cancer can die of other things. The numbers below, known as observed survival, don’t take that into account.

In order 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 more favorable outlook for people being diagnosed with small intestine cancer now.

Survival rates are often based on previous outcomes of large numbers of people who had the disease, but they cannot predict what will happen in any particular person’s case. Many other factors may affect a person’s outlook, such as their age, general health, the grade of the cancer, and how well the cancer responds to treatment. Your doctor can tell you how the numbers below may apply to your particular situation.

The numbers below were published in 2010 in the 7th edition of the AJCC Staging Manual. They come from the National Cancer Data Base, and are based on people diagnosed with small intestine adenocarcinoma between 1998 and 2002.

<table>
<thead>
<tr>
<th>Stage</th>
<th>5-year observed survival</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage I</td>
<td>55%</td>
</tr>
<tr>
<td>Stage IIA</td>
<td>49%</td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>35%</td>
</tr>
<tr>
<td>Stage IIIA</td>
<td>31%</td>
</tr>
<tr>
<td>Stage IIIB</td>
<td>18%</td>
</tr>
<tr>
<td>Stage IV</td>
<td>5%</td>
</tr>
</tbody>
</table>

• References
See all references for Small Intestine Cancer
What Should You Ask Your Doctor About Small Intestine Adenocarcinoma?

It's important to have honest, open discussions with your cancer care team. They want to answer all of your questions, no matter how trivial you might think they are. For instance, consider these questions:

- What is the stage of my cancer and what does that mean for me?
- Will I need other tests before we consider treatment options?
- How much experience do you have treating this type of cancer?
- What are my treatment choices?
- What do you recommend and why?
- What is the goal of the treatment?
- Based on what you’ve learned about my cancer, what is my prognosis?
- What risks or side effects are there to the treatments you suggest?
- How will treatment affect my daily activities?
- What are the chances my cancer will come back with these treatment plans?
- What should I do to be ready for treatment?
- What type of follow-up might I need after treatment?

Along with these sample questions, you might write down some of your own. For instance, you might want more information about recovery time so you can plan your work schedule. Or you might want to ask about second opinions or clinical trials.

- References
  See all references for Small Intestine Cancer