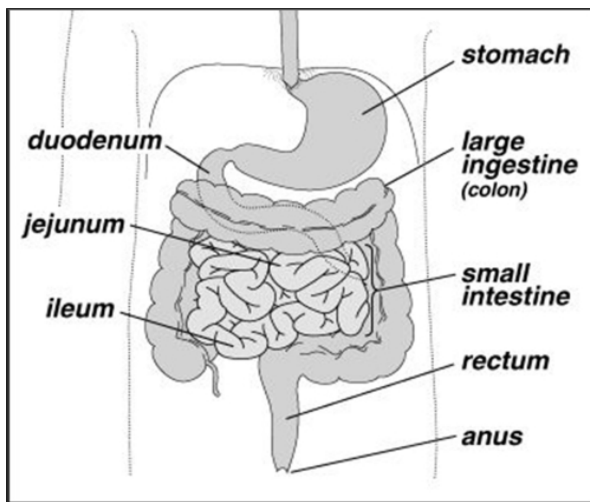


Small Intestine Cancer

What is the small intestine?

The **small intestine**, also called the small bowel, is part of the body's gastrointestinal tract (GI) or digestive system. Its jobs are to:

- Break down food.
- Absorb the nutrients in food.
- Move the extra waste to the large intestine or colon to pass out of the body by the rectum.



The small intestine is about 22 feet long. It folds and loops around many times so that it can fit in the belly.

The small intestine has 3 parts:

- **Duodendum**
- **Jejunum**
- **Ileum**

The **duodendum** is the first and shortest section of the small intestine. It is about 8 inches long. The stomach passes food into the duodenum. The pancreatic and bile ducts attach to the duodenum. They release enzymes to break down nutrients so they can be absorbed.

Most nutrients in food are absorbed into the bloodstream in the **jejunum**.

The **ileum** is slightly longer than the jejunum. Vitamin B12 and bile salts are absorbed at the end of the ileum. Water and lipids (fats) are absorbed throughout the small intestine. The appendix is found near the section where the ileum meets the large intestine.

What is small intestinal cancer?

There are 5 main types:

1. Carcinoid tumors
2. Gastrointestinal stromal tumors (GIST)
3. Sarcomas
4. Lymphomas
5. Adenocarcinomas

Cancers of the small intestine are rare. The first four make up 60-70% of all cancers of the small intestine.

What are the risk factors?

- A high-fat diet
- Crohn's disease
- Celiac disease
- Smoking
- Alcohol use

You are also at increased risk if you have:

- Familial adenomatous polyposis (FAP)
- Hereditary nonpolyposis colorectal cancer (HNPCC/Lynch Syndrome)
- Peutz-Jeghers syndrome (PJS)
- MUTYH-associated polyposis
- Cystic fibrosis

What are the symptoms?

The early symptoms of a small bowel tumor can be hard to notice. Symptoms include:

- Pain in the mid-abdomen (belly) that may get worse with eating
- Weight loss
- Nausea
- Bloating
- A lump in the abdomen
- Blood in the stool/black stools
- Feeling tired due to anemia

As the tumor grows it may cause a blockage of the small bowel. This could cause severe pain, nausea and vomiting.

How is it diagnosed?

- **History and physical exam** will review your symptoms, health habits, past illnesses and treatments.
- **Blood tests** check the white blood cells, platelets, and hemoglobin and hematocrit. Blood tests also help us look for signs that the cancer is hurting other organs.
- **Barium swallow** test x-rays the upper GI tract after you swallow barium (contrast liquid).
- **Endoscopy** looks at the upper GI tract through a long, lighted tube while you are sedated. The doctor may take pictures and biopsies.
- **CT scan** is series of pictures of the inside of the body taken after oral or IV contrast.
- **MRI** uses a magnet, radio waves and a computer to take pictures of the inside of the body.
- **Colonoscopy** may help find tumors in the lower part of the small intestine.
- **Laparoscopy** is a surgery done with a scope that lets the surgeon check the belly for signs of cancer.

- **Biopsy** checks tissue under a microscope to learn if it is cancer and where it came from. Biopsies may be done during surgery, during an upper endoscopy or colonoscopy. We can also do biopsies through the wall of the abdomen using a CT scan or ultrasound.

These tests will also help us figure out the stage, or extent of the cancer which will help us make a treatment plan.

To stage your cancer, a doctor looks at tissue under the microscope to learn:

- The extent of the tumor
- Whether the tumor has metastasized (spread) to nearby lymph nodes
- Whether the tumor has spread to distant organs

Stage I

The cancer has grown through the first few layers of the small intestine wall. It has not spread to the lymph nodes.

Stage II

There are 2 parts of stage II:

- **Stage IIA**
The cancer has grown through most of the layers of the intestine. It has not spread to the lymph nodes.
- **Stage IIB**
The cancer has grown through the small intestine wall or into nearby tissues or organs. It has not spread to nearby lymph nodes or distant organs.

Stage III

There are three parts of stage III:

- **Stage IIIA**
The cancer has grown through the first few layers of the small intestine wall and has spread to 1-3 close lymph nodes.

- **Stage IIIB**
The cancer has grown through most of the layers of the small intestine and has spread to 1-3 lymph nodes. Or, it has grown through the intestine wall, spread to other parts of the small intestine, and spread to 1-3 lymph nodes.
- **Stage IIIC**
The cancer has grown through at least one layer of the intestine wall, may have spread to other parts of the intestine, and has spread to more than 4 lymph nodes.

Stage IV

The cancer has spread to other organs such as the liver, lungs, **peritoneum** (the lining of the abdomen), or ovaries.

What is the prognosis?

The **prognosis** (chance of recovery) depends upon many factors:

- The type of tumor
- The size of the tumor and how deep it has grown into the lining of the small intestine
- If it all the tumor can be removed
- If it has spread to other parts of the body
- If it is a new diagnosis

How is it treated?

Surgery is the most common treatment. A surgeon may take out part or all of an organ that has cancer. Lymph nodes in the area are taken out and checked to see if the cancer has spread. Sometimes the tumor cannot be taken out, but you may still need surgery to treat a blockage.

Radiation therapy is a treatment that uses high energy x-rays or other types of radiation to kill cancer cells, or slow their growth. It treats a very specific area. This is called **regional** treatment. Chemotherapy (chemo) and radiation are sometimes both used. This makes the radiation work better.

Chemo uses drugs to kill cancer cells or to stop them from growing. When chemo is given through an IV or taken in pill form it enters the blood stream and can reach cancer cells throughout the body. This is called **systemic** treatment.

Clinical Trials

You may have the chance to take part in a clinical trial. Clinical trials are controlled research studies done to find out if new cancer treatments work and are safe, or are better than the standard treatments.

Follow-Up Tests

During your treatments you will need blood tests and scans to see how well the treatment is working. These tests help make choices to keep going, stop, or change treatments. This is called **restaging**.

Blood tests and scans will be done from time to time after you have finished your treatments. They can show if your cancer has come back.