



What Is Colorectal Cancer?

Colorectal cancer is a term that is used to refer to cancer that develops in the colon or the rectum. These cancers are sometimes referred to separately as colon cancer or rectal cancer, depending on where they start. Colon cancer and rectal cancer have many features in common. They are discussed together in this document except for the section about treatment, where they are discussed separately.

The Normal Digestive System

The colon and rectum are parts of the digestive system, which is also called the gastrointestinal, or GI, system (see picture below). The first part of digestive system processes food for energy while the last part (the colon and rectum) removes solid waste (fecal matter or stool) from the body. In order to understand colorectal cancer, it helps to have some basic knowledge about the normal structure and function of the digestive system.

After food is chewed and swallowed, it travels through the esophagus to the stomach. There it is partly broken down and then sent to the small intestine, also known as the small bowel. The word "small" refers to the diameter of the small intestine, which is narrower than that of the large bowel (colon and rectum). Actually the small intestine is the longest segment of the digestive system -- about 20 feet. The small intestine continues breaking down the food and absorbs most of the nutrients.

The small bowel joins the colon in the right lower abdomen. The colon (also called the large bowel or large intestine) is a muscular tube about 5 feet long. The colon absorbs water and salt from the food matter and serves as a storage place for waste matter.

The colon has 4 sections:

1. The first section is called the ascending colon. It starts with a small pouch (the cecum) where the small bowel attaches to the colon and extends upward on the right side of the abdomen. The cecum is also where the appendix attaches to the colon.
2. The second section is called the transverse colon since it goes across the body from the right to the left side in the upper abdomen.
3. The third section, the descending colon, continues downward on the left side.
4. The fourth and last section is known as the sigmoid colon because of its "S" or "sigmoid" shape. The waste matter that is left after going through the colon is known as feces or stool. It goes into the rectum, the final 6 inches of the digestive system. From there it passes out of the body through the anus.



The wall of the colon and rectum is made up of several layers of tissue. Colorectal cancer starts in the innermost layer and can grow through some or all of the other layers. Knowing a little about these layers is important, because the stage (extent of spread) of a colorectal cancer depends to a great degree on how deeply it invades into these layers. For more information, please refer to the section, "How is colorectal cancer staged?"

- Adenomatous polyps (adenomas) are polyps that have the potential to change into cancer. Because of this, adenomas are called a pre-cancerous condition.
- Hyperplastic polyps and inflammatory polyps, in general, are not pre-cancerous. But some doctors think that some hyperplastic polyps can become pre-cancerous or might be a sign of having a greater risk of developing adenomas and cancer, particularly when these polyps grow in the ascending colon.

Another kind of pre-cancerous condition is called dysplasia. Dysplasia is an area in the lining of the colon or rectum where the cells look abnormal (but not like true cancer cells) when viewed under a microscope. These cells have the potential to change into cancer over time. This is usually seen in people who have had diseases such as ulcerative colitis or Crohns disease for many years. Both ulcerative colitis and Crohns disease cause chronic inflammation of the colon.

Start and Spread of Colorectal Cancer

If cancer forms within a polyp, it can eventually begin to grow into the wall of the colon or rectum. When cancer cells are in the wall, they can then grow into blood vessels or lymph vessels. Lymph vessels are thin, tiny channels that carry away waste and fluid. They first drain into nearby lymph nodes, which are bean-shaped structures that help fight against infections. Once cancer cells spread into blood or lymph vessels, they can travel to distant parts of the body, such as the liver. This process of spread is called metastasis.

Types of Cancer in the Colon and Rectum

Adenocarcinomas: More than 95% of colorectal cancers are a type of cancer known as adenocarcinomas. These are cancers that start in cells that form glands that make mucus to lubricate the inside of the colon and rectum. When doctors speak of colorectal cancer, this is almost always what they are referring to.



Other, less common types of tumors may also develop in the colon and rectum. These include:

Carcinoid tumors: These tumors develop from specialized hormone-producing cells of the intestine. They are discussed in the separate American Cancer Society document, *Gastrointestinal Carcinoid Tumors*.

Gastrointestinal stromal tumors (GISTs): These tumors develop from specialized cells in the wall of the colon called the "interstitial cells of Cajal." Some are benign (non-cancerous); others are malignant (cancerous). Although these tumors can be found anywhere in the digestive tract, they are unusual in the colon. They are discussed in the separate American Cancer Society document, *Gastrointestinal Stromal Tumors*.

Lymphomas: These are cancers of immune system cells that typically develop in lymph nodes, but they may also start in the colon and rectum or other organs. Information on lymphomas of the digestive system is included in the separate American Cancer Society document, *Non-Hodgkin Lymphoma*.