



Colon Cancer: An Overview

Colon cancer is a term used to refer to cancer that develops in the colon or the rectum. The colon and rectum are parts of the digestive system, which is also called the gastrointestinal, or GI, system. The digestive system processes food for energy and rids the body of solid waste matter (fecal matter or stool).

How the digestive system works

After food is chewed and swallowed, it travels through the esophagus to the stomach. There it is partially broken down and then sent to the small intestine, which is also known as the small bowel. The word "small" refers to the diameter of the small intestine. It is narrower than the large intestine, but is actually 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 intestine joins the large intestine, or large bowel, in the right lower abdomen. The large intestine, most often referred to as the colon, is a muscular tube about 5 feet long. The colon continues to absorb water and mineral nutrients from the food matter and serves as a storage place for waste matter. The waste matter that is left after the absorption process is feces and goes into the rectum, the final 6 inches of the digestive system. From there it passes out of the body through the anus.

How colon cancer forms

The walls of the colon and rectum have several layers of tissue. Colon cancer starts in the glandular cells that line the innermost layer of tissue and it can grow through some or all of the other layers.

In most people, colon cancers develop slowly over a period of several years. Before a cancer develops, a growth usually begins as a non-cancerous polyp, which may eventually change into cancer. A polyp develops on the lining of the colon or rectum. There are a number of different types of polyps, but the type that has the greatest potential to become cancerous is called an adenomatous polyp or adenoma. More than 95 percent of colon cancers are adenocarcinomas.

Once 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. After they spread into blood or lymph vessels, the cancer cells can travel to distant parts of the body. This process of spread is called metastasis. And this is what early detection and treatment seek to avoid.

Colon cancer screening

Serious though colon cancer is, it is also slow growing, as mentioned above. That's important because it means that with timely screening, pre-cancerous polyps can be caught and removed, preventing the development of cancer altogether. What's more, growths that do show signs of cancer can be removed early when the cancer is highly curable.

There are a number of different types of tests used to screen for colon cancer. A doctor will help the patient determine which

ones are appropriate.

New American Cancer Society guidelines for colon cancer screening divide the available tests into two groups, those that can find both cancer and polyps, and those that mainly find cancer. Because preventing cancer from ever starting is the focus of these new guidelines, the tests that can find both cancer and polyps are preferred if they are available and you're willing to have them.

Beginning at age 50, both men and women at average risk for developing colon cancer should use one of the screening tests below:

Tests that find polyps and cancer

- flexible sigmoidoscopy every 5 years*
- colonoscopy every 10 years
- double contrast barium enema every 5 years*
- CT colonography (virtual colonoscopy) every 5 years*

Tests that mainly find cancer

- fecal occult blood test (FOBT) every year*,**
- fecal immunochemical test (FIT) every year*,**
- stool DNA test (sDNA), interval uncertain*

*Colonoscopy should be done if test results are positive.

**For FOBT or FIT used as a screening test, the take-home multiple sample method should be used. A FOBT or FIT done during a digital rectal exam in the doctor's office is inadequate for screening.

Screening is saving lives

Colon cancer is the second leading cause of cancer-related deaths in the United States; however, the number of deaths from colon cancer has been dropping for the past 15 years. There are a number of likely reasons for this, but one of the most probable is that polyps are being found through screening and removed before they can develop into cancers. Screening is also allowing more colon cancers to be found earlier when the disease is easier to cure.

The 5-year relative survival rate for people whose colon cancer is treated in this early stage, before it has spread, is about 90 percent. About 4 out of 10 colon cancers are found at this early stage. That's why all of us must take responsibility for getting our cancer screening tests and also do tell others about the importance of being tested. Just to give you an idea, nearly 50,000 Americans will die this year from colon cancer, but it's believed that number could be cut in half if everyone over age 50 got screened for the disease.

What Are Some Risk Factors for Colon Cancer?

We do know of certain factors that contribute to colon cancer such as age, a personal or family history of colon cancer, and a personal or family history of certain types of polyps. Modifiable risk factors are: obesity, physical inactivity, smoking, heavy alcohol consumption, a diet high in red or processed meat, and inadequate intake of fruits and vegetables. There is, however, a great deal of research into this disease. Here are a couple of examples:

- Screening: Research is going on to look at just how well current colon cancer screening methods are working. Meanwhile, new screening methods are also being developed. And since fewer than half of all Americans over 50 are having any colon cancer testing at all, research, such as that being done by Thomas Denberg, M.D., Ph.D. at the University of Colorado, is also exploring new and better ways to increase screening rates for colon cancer.
- Role of vitamin A: Recent research by American Cancer Society grantee, Michelle Lane, Ph.D., has focused on exactly how a form of vitamin A seems to slow or stop the growth of cancer cells. At the University of Texas in Austin, Dr. Lane and her colleagues demonstrated that an animal form of vitamin A, called retinol, can decrease the activity of a particular key enzyme – one that regulates cancer cell growth and invasiveness, and is known to be more active in colon cancer cells specifically. When the retinol was introduced into colon cancer cells that were previously resistant to other vitamin A therapies, the retinol tended to shut down the activity of the key enzyme in as little as 30 minutes after treatment.

For information on additional research that is underway, [click here](#).

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