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Colorectal Cancer - Risk Factors and Prevention [1]

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ON THIS PAGE: You will find out more about the factors that increase the chance of developing this type of cancer. To see other pages, use the menu on the side of your screen.

A risk factor is anything that increases a person?s chance of developing cancer. Although risk factors often influence the development of cancer, most do not directly cause cancer. Some people with several risk factors never develop cancer, while others with no known risk factors do. However, knowing your risk factors and talking about them with your doctor may help you make more informed lifestyle and health care choices.

A person with an average risk of colorectal cancer has about a 5% chance of developing colorectal cancer overall. Generally, most colorectal cancers (about 95%) are considered sporadic, meaning the genetic changes develop by chance after a person is born, so there is no risk of passing these genetic changes on to one?s children. Inherited colorectal cancers are less common (about 5%) and occur when gene mutations, or changes, are passed within a family from one generation to the next (see below). Often, the cause of colorectal cancer is not known. However, the following factors may raise a person?s risk of developing colorectal cancer:

Age. The risk of colorectal cancer increases as people get older. Colorectal cancer can occur in young adults and teenagers, but more than 90% of colorectal cancers occur in people older than 50. The average age of diagnosis in the United States is 72.

Gender. Men have a slightly higher risk of developing colorectal cancer than women.

Family history of cancer. Colorectal cancer may run in the family if first-degree relatives (parents, brothers, sisters, children) or many other family members (grandparents, aunts, uncles, nieces, nephews, grandchildren, cousins) have had colorectal cancer. This is especially true when family members are diagnosed with colorectal cancer before age 60. If a person has a family history of colorectal cancer, his or her risk of developing the disease is nearly double the average risk of colorectal cancer. The risk further increases if other close relatives have also developed colorectal cancer.

It is important to talk to your family members about your family?s history of colorectal cancer. If you think you may have a family history of colorectal cancer, talk with a genetic counselor [3] first before you have any genetic testing. Only genetic testing [4] can determine if you have a genetic

mutation, and genetic counselors are trained to explain the risks and benefits of genetic testing.

Rare inherited conditions. Members of families with certain uncommon inherited conditions also have a significantly increased risk of colorectal cancer, as well as other types of cancer; these include familial adenomatous polyposis (FAP [5]), attenuated familial adenomatous polyposis (AFAP) [6], Gardner syndrome [7], Lynch syndrome [8], Juvenile Polyposis syndrome (JPS) [9], Muir-Torre syndrome [10], MYH-associated polyposis (MAP) [11], Peutz-Jeghers syndrome (PJS) [12], and Turcot syndrome [13]. Relatives of women with uterine cancer [14] may also be at higher risk.

Inflammatory bowel disease (IBD). People with IBD, such as ulcerative colitis or Crohn?s disease, may develop chronic inflammation of the large intestine, which increases the risk of colon cancer. IBD is not the same as irritable bowel syndrome.

Adenomatous polyps (adenomas). Polyps are not cancer, but some types of polyps called adenomas are likely to develop into colorectal cancer. Polyps can often be completely removed using a tool during a colonoscopy, a test in which a doctor looks into the colon using a lighted tube after the patient has been sedated. Polyp removal can prevent colon cancer. People who have had adenomas have a greater risk of additional polyps and of colon cancer, and they should have follow-up screening tests regularly (see below).

Personal history of certain types of cancer. People with a personal history of colon cancer and women who have had ovarian cancer [15] or uterine cancer [14] are more likely to develop colon cancer.

Race. Black people have the highest rates of sporadic, or non-hereditary, colorectal cancer in the United States, and colon cancer is a leading cause of cancer-related deaths among black people. Black women are more likely to die from colorectal cancer than women from any other racial group, and black men are even more likely to die from colorectal cancer than black women. The reasons for these differences are unclear. Noting that black people are more likely to be diagnosed with colon cancer at a younger age, the American College of Gastroenterology suggests that black people begin screening with colonoscopies at age 45 (see below). Earlier screening may find changes in the colon at a more treatable stage.

Physical inactivity and obesity [16]. People who lead an inactive lifestyle, meaning no regular exercise and a lot of sitting, and people who are overweight may have an increased risk of colorectal cancer.

Smoking [17]. Recent studies have shown that smokers are more likely to die from colorectal cancer than nonsmokers.

Prevention

Research continues to look into what factors cause colorectal cancer and what people can do to lower their personal risk. There is no proven way to completely prevent this disease, but there may be steps you can take to lower your risk. Talk with your doctor if you have concerns about your personal risk of developing colorectal cancer. The following may lower a person?s risk of colorectal cancer:

Nonsteroidal anti-inflammatory drugs (NSAIDs). Some studies suggest that aspirin and other NSAIDs may reduce the development of polyps in people with a history of colorectal cancer or polyps. However, regular use of NSAIDs may cause major side effects, including bleeding of the stomach lining and blood clots leading to stroke or heart attack. Taking aspirin or other NSAIDs cannot be substituted for regular colorectal cancer screening. People should talk with their doctor about the risks and benefits of taking aspirin on a regular basis.

Diet and supplements. A diet rich in fruits and vegetables and low in red meat may help reduce the risk of colon cancer. Some studies have also found that people who take calcium and vitamin D supplements have a lower risk of colorectal cancer.

Screening

Colorectal cancer can often be prevented through regular screening, which can find precancerous polyps. Talk with your doctor about when screening should begin based on your age and family history of the disease. Although some people should be screened earlier, people of average risk should begin screening at age 50. Black people should start receiving at age 45 because they are more commonly diagnosed at a younger age. Because colorectal cancer usually does not cause symptoms until the disease is advanced, it is important for people to talk with their doctor about the pros and cons of each screening test and how often each test should be given. Under these guidelines, people should begin colorectal cancer screening earlier and/or undergo screening more often if they have any of the following colorectal cancer risk factors:

- A personal history of colorectal cancer or adenomatous polyps
- A strong family history of colorectal cancer or polyps (cancer or polyps in a first-degree relative younger than 60 or in two first-degree relatives of any age). A first-degree relative is defined as a parent, sibling, or child
- A personal history of chronic inflammatory bowel disease
- A family history of any hereditary colorectal cancer syndrome (FAP [5], HNPCC [8], or other syndromes; see above)

The tests used to screen for colorectal cancer are described below:

Colonoscopy [18]. This test allows the doctor to look inside the entire rectum and colon while a patient is sedated. A flexible, lighted tube called a colonoscope is inserted into the rectum and the entire colon to look for polyps or cancer. During this procedure, a doctor can remove polyps or other tissue for examination (see biopsy in the Diagnosis [19] section). This is the only screening test that allows the removal of polyps, which can also prevent colorectal cancer.

Computed tomography (CT or CAT) colonography [20]. CT colonography, sometimes called virtual colonoscopy, is a screening method being studied in some centers. It requires

interpretation by a skilled radiologist, a doctor who specializes in obtaining and interpreting medical images, to be used to the best advantage. However, it may be an alternative for people who cannot have a standard colonoscopy due to the risk of anesthesia, which is medication to block the awareness of pain, or if a person has a blockage in the colon that prevents a full examination.

Sigmoidoscopy [21]. A sigmoidoscope is a flexible, lighted tube, and it is inserted into the rectum and lower colon to check for polyps, cancer, and other abnormalities. During this procedure, a doctor can remove polyps or other tissue for later examination. The doctor cannot check the upper part of the colon, the ascending and transverse colon, with this test. If polyps or cancer is found using this test, a colonoscopy to view the entire colon is recommended.

Fecal occult blood test (FOBT) [22]. This is a test used to find blood in the feces, or stool, which can be a sign of polyps or cancer. A positive FOBT test, meaning that blood is found in the feces, can be from causes other than a colon polyp or cancer, including bleeding in the stomach or upper GI tract and even ingestion of rare meat or other foods. There are two types of tests: guaiac and immunochemical. Polyps and cancers do not bleed continually, so the FOBT must be done on several stool samples each year and should be repeated yearly. Even then, the reduction in deaths from colorectal cancer is fairly small at around 30% if done yearly and 18% if done every other year.

Double contrast barium enema (DCBE) [23]. For patients who cannot have a colonoscopy, an enema containing barium is given, which helps the outline of the colon and rectum stand out on x-rays. A series of x-rays is then taken of the colon and rectum. In general practice, most doctors would recommend other screening tests because a barium enema is less likely to detect precancerous polyps than a colonoscopy, sigmoidoscopy, or CT colonography.

Stool DNA tests. This test analyzes the DNA from a person?s stool sample to look for cancer. It uses changes in the DNA that occur in polyps and cancers to determine whether a colonoscopy should be done.

Screening Recommendations

Different organizations have made different recommendations for colorectal cancer screening. Two sets of recommendations are described below. Talk with your doctor about the best test and time between tests based on your health history and personal cancer risk.

The American Gastroenterological Association, the American College of Gastroenterology, the American Society for Gastrointestinal Endoscopy, the American Cancer Society, and the American College of Radiology have developed consensus guidelines for screening for colorectal cancer, with the goal of cancer prevention. Beginning at age 50, both men and women of average risk should follow one of these testing schedules.

The following tests detect both polyps and cancer:

- Flexible sigmoidoscopy, every five years
- Colonoscopy, every 10 years
- DCBE, every five years

- CT colonography, every five years

These tests primarily detect cancer:

- Guaiac-based FOBT, every year
- Fecal immunochemical test, every year
- Stool DNA test, as often as your doctor recommends

The U.S. Preventive Health Services Task Force (USPSTF) also has guidelines for colon cancer screening, which differ somewhat from those mentioned above. The USPSTF recommends one of the following testing methods:

- A high-sensitivity FOBT, every year
- Sigmoidoscopy, every five years, with FOBT testing between tests
- Colonoscopy, every 10 years

In addition, this task force did not think there was enough evidence of benefit or harm to recommend virtual colonography and fecal DNA testing.

According to the USPSTF, adults between ages 76 and 85 should not have routine screening, because the risks outweigh the benefits, and adults older than 85 can avoid colorectal cancer screening. However, people who have a history of polyps or colorectal cancer have a higher risk of the disease, and screening may still be recommended at an older age.

It is important to note that, regardless of the screening test and schedule, any test that indicates an abnormality should be followed up with a colonoscopy.

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