

## ***Prevention and Early Detection of Colorectal Cancer (CRC)***

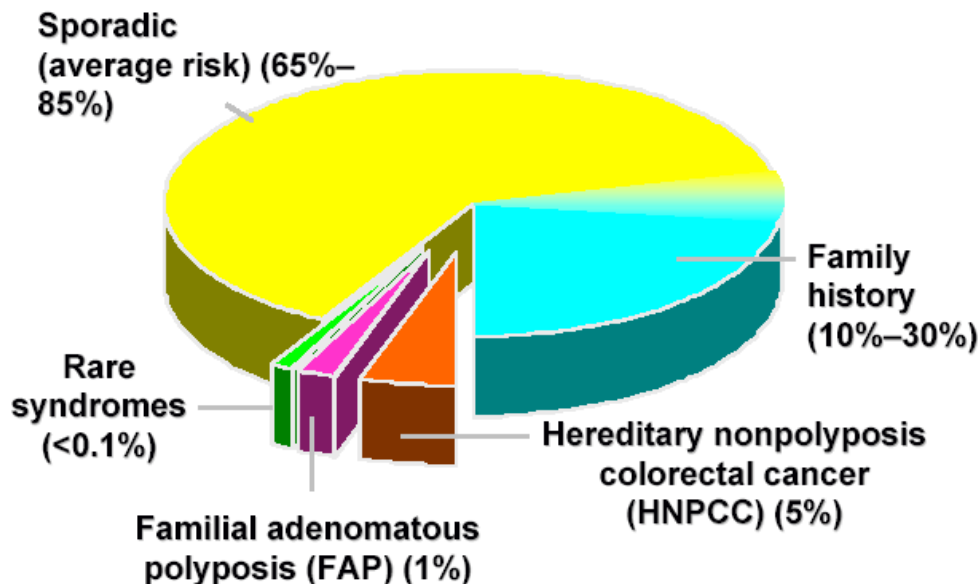
*The following information is to inform our patients on what colon cancer is, evaluate their personal risk factor and present the different screening methods available. The information was developed by the Centers for Disease Control and Prevention and providers at Dartmouth-Hitchcock Gastroenterology.*

### **What is Colon Cancer?**

Colorectal cancer is the second leading cause of cancer-related death in men and women in the United States following lung cancer. The American Cancer Society estimates that in 2002, about 148,000 American men and women will be diagnosed with colorectal cancer, and almost 57,000 will die of the disease. Incidence and mortality rates are high for both men and women. Many women think of colorectal cancer as a man's disease, but it affects both men and women. Incidence and mortality rates are high for people of all races.

### **Your Risk Factor:**

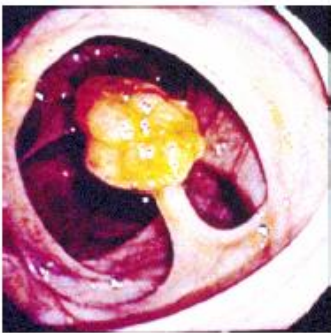
The health community is rapidly gaining knowledge about who develops colorectal cancer. The majority of colorectal cancers (65% to 85%) occur in people with no known cause. 10% to 30% of cases of colorectal cancer occur in people who have a family member who has had a polyp or colorectal cancer. A small percentage of colorectal cancers occur as part of an inherited syndrome. Approximately 5% are associated with hereditary nonpolyposis colorectal cancers (HNPCC) and 1% are associated with familial adenomatous polyposis (FAP). Less than 0.1% are rare colorectal cancer syndromes.



## ***Patients with a high risk of developing Colorectal Cancer include:***

- If a person has a *personal history* of colorectal cancer or polyps, he or she is at risk for having another polyp and should be treated differently than average-risk persons.
- Individuals with a *first degree* (parent, sibling, and child) family history of colorectal cancer or polyps should be considered high risk. This is especially true if their family member was younger than 50 when he or she was diagnosed.
- Individuals with two *second degree* relatives (blood relatives i.e.: aunts, uncles and grandparents), who have a family history of colorectal cancer or polyps should also be considered high risk.
- Individuals with inflammatory bowel disease or ulcerative colitis are also high risk.
- Certain inherited cancer syndromes, such as hereditary nonpolyposis colorectal cancer (HNPCC) or familial adenomatous polyposis (FAP), are also much more likely to get colorectal cancer.
- Screening guidelines are only appropriate for **asymptomatic** patients. If patients have symptoms, they should not be screened—what they need is a diagnosis.

***\*All persons with average risks aged 50 years and older should begin regular screening.***



## ***Polyps***

It has been proven that most colorectal cancers begin as polyps; however, not all polyps progress to cancer.

There are several tissue types of polyps. Some types of polyps, hyperplastic polyps, probably have no malignant (or cancer) potential. When referring to polyps that may be found during screening procedures, we mean adenomatous polyps, which may progress to cancer in the lifetime of the patient.

It is estimated that 25% of adults have adenomatous polyps at age 50 and over a period of 10 years, about 5% of polyps would become cancers if left in the colon. Larger polyps are more likely to progress to cancer.

Currently, the definition of a large polyp is under debate. Adenomatous polyps larger than 1 cm are more likely to progress to cancer. Polyps larger than 1 cm are found in 5% of adults aged 50 to 60 and in 15% of adults at age 75. There is also a debate about what to do with polyps that are smaller than 1 cm. The question is whether they will progress to cancer in the lifetime of that individual.

Polyps progress very slowly into cancers: The average time from progression of a polyp to cancer is 10 to 15 years. This long lead time presents an excellent window of opportunity for screening and intervention. These are averages—some cancers may be much faster (or slower) growing.

## ***Screenings for Colorectal Cancer***

Screening for colorectal cancer works through both prevention and early detection. Many people don't know that through the detection and removal of polyps, we can actually **prevent** the development of colorectal cancer, thereby decreasing incidence. If through the early detection of colorectal cancer is detected early, we can more effectively treat the disease, thereby decreasing mortality.

The listed options are accepted screening strategies. One or a combination of these strategies is advised by the national guidelines.

### ***Virtual Colonoscopy***

Virtual Colonoscopy is a new type of screening method that is currently still in study and is not widely available. The test requires full prep and air insertion without medication and uses a specialized multi slice CT scanner. The procedure is not currently covered by any insurance at this time.

### ***Fecal Occult Blood Test (FOBT) and Flexible Sigmoidoscopy***

#### **Procedure**

Patients are instructed to take samples of their stool and place them on cards to send to the lab. The test will then look for no-visible occult blood that may indicate bleeding in the intestines or colon which can be caused by a variety of conditions. The test is almost always done in conjunction with a flexible sigmoidoscopy.

#### **Preparation**

The collection of the sample and placement on cards can be done at home and sent to your provider for testing. You will be required to maintain a specialized diet for two days prior to the sample collection.

### **Cost**

The estimated cost of procedure is \$2000 for lab testing and a flexible sigmoidoscopy.

### **Pros**

Some of pros of a FOBT include convenience, it is non surgical, there is no physical risk and it is relatively inexpensive. Medicare coverage includes an annual FOBT.

### **Cons**

The test can be nonspecific meaning the blood that is detected may from other sources. Some chemicals in certain foods or medications may cause the test to be positive. The test may not detect blood when it is present, such as if you ingested vitamin C supplements. Some cancers and most polyps don't bleed — or may bleed intermittently — and therefore this test may or may not detect them since it only detects blood. There are some dietary and Medication instructions that will need to be followed by the patient.

### **Time frame**

FOBT should be done annually.

## ***Double Contrast Barium Enema***

### **Procedure**

With a Double Contrast Barium Enema, the patient has an enema of barium, followed by an insufflation of air. This presses the barium against the walls of the colon and provides a silhouette outline of the bowel. An X-ray is then taken in the Radiology Department of the hospital. The test is almost always done in conjunction with a flexible sigmoidoscopy.

### **Preparation**

Full Bowel Prep is needed.

### **Cost**

The estimated cost for both a double contrast barium enema and a flexible sigmoidoscopy is \$2500.

### **Pros**

With a Barium Enema no sedation is needed. **When this method is combined with a flexible sigmoidoscopy, it screens the entire colon.** Complications, such as perforation of the colorectal wall, are slight. The procedure is less expensive than a colonoscopy. Medicare covers a barium enema every 4 years.

### **Cons**

This screening may miss small polyps or sometimes even small cancers, as they are difficult to be viewed by x-ray. Biopsy and polyp removal cannot be done during testing, which means the patient may need to follow up with a colonoscopy. Some patients find that preparing for the procedure (emptying the colon) and the procedure itself can be unpleasant.

## ***Flexible Sigmoidoscopy***

### **Procedure**

The flexible sigmoidoscopy is performed with a shorter scope than a colonoscopy and views the lower 1/3 of the large colon. This procedure may be performed in the office or hospital setting.

### **Preparation**

The usual preparation for flexible sigmoidoscopy is a laxative the night before and two enemas at home on the morning of the exam.

### **Pros**

Some of pros of flexible sigmoidoscopy include that it rarely requires sedation and requires less preparation than other methods. It is sensitive in detecting abnormalities in the left colon (as far as it can go). It is less invasive and less expensive than a colonoscopy. Tissue samples (or biopsies) can be taken during the test. Medicare covers sigmoidoscopy exam every 4 years.

### **Cons**

Flexible sigmoidoscopy can't detect cancer, polyps or other abnormalities in the upper portion of the colon, where 40 percent or more of colon cancers and polyps occur. If there is a positive result, patient will be required to do a follow-up test, which is usually a colonoscopy.

### **Timeframe**

A flexible sigmoidoscopy should be preformed every 5 years.

## ***Colonoscopy***

Colonoscopy allows for the direct observation of the entire large colon, and is therefore the most accurate (96%) test for detecting polyps and colorectal cancer. It provides a one-step screening and treatment procedure if needed. Polyps can be removed painlessly at the time of the initial test.

### **Procedure**

The test is done as an outpatient procedure in the Endoscopy unit at the hospital. The anesthesia used is called Propofol and is administered through an IV. As the scope is entered into the colon through the rectum there is an insertion of air. The scope is roughly 4-6 feet long and has a camera on the end which views the entire colon for polyps.

If a polyp is found it can be removed with a snare and the area cauterized. The polyp will then be sent to pathology for evaluation.

The entire procedure involves one hour of pre procedural preparation (at the hospital). Most screening colonoscopies can take up to 20 to 60 minutes if polyps need to be removed. Expected time in recovery is 60 minutes.

### **Cost**

Screening colonoscopies *start at \$4500.*

### **Preparation**

Preparation for a colonoscopy is relatively extensive. A powerful laxative is used which will cause multiple bowel movements. People frequently find the preparation worse than the test. The test itself is generally well tolerated.

### **Pros**

Colonoscopy screens the entire colon and is the most sensitive test for detecting precancerous polyps and cancer. Biopsy and removal of polyps or abnormal tissue often can be done during the procedure itself.

### **Cons**

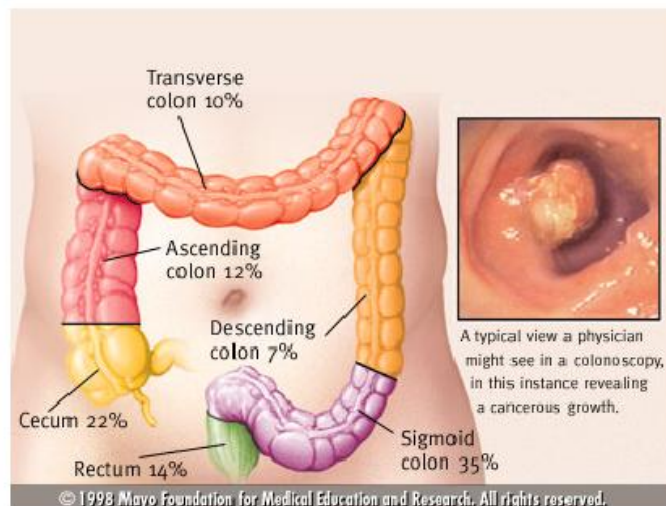
General anesthesia is administered for the colonoscopy and you will be asleep prior to insertion of the scope. It is more expensive than other tests and is not always covered by insurance.

Some patients feel bloated or have mild discomfort after the procedure. Expelling this gas may make you more comfortable. Minor bleeding may occur for up to two weeks after a colonoscopy if polyps were removed.

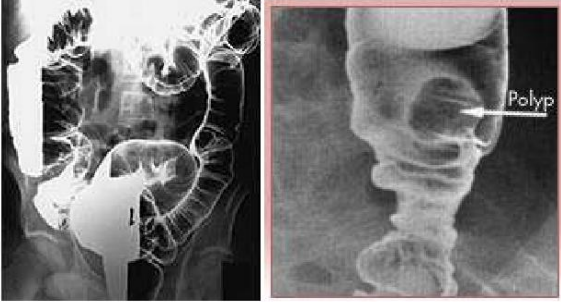
There are some risks associated with the procedure including infection, bleeding and perforation. 1:3 patients out of 1,000 may have a perforation into the colon wall from a screening colonoscopy. 2:10 patients out of 1,000 cases will experience perforation when a polyp is being removed, or a biopsy is performed particularly if the polyp is large or if more than one is being removed. A perforation may not be noticed right away. Perforations require surgical repair, which includes hospitalization.

### **Time frame**

Colonoscopies should be performed every 10 years, or as your medical history indicates.

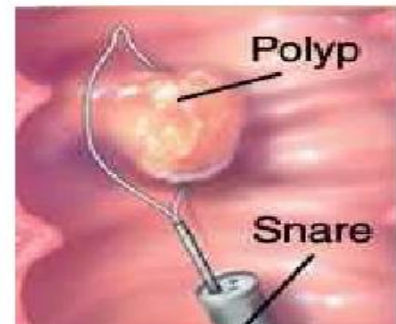


*The above diagram illustrates where the percent of incidence of colon cancer is found in patients. A flexible sigmoidoscopy can detect only the rectum and sigmoid colon, while a colonoscopy detects the entire colon.*



*This is a picture of a barium enema. Note the polyp on the right picture. This polyp cannot be removed at this time, as a barium enema is an x-ray. A colonoscopy would be needed to remove this polyp.*

*Polyps for the most part are removed by using a snare. The polyp is cauterized and collected through a suction trap. All polyps are removed and sent to Pathology for examination. Some minor bleeding after a polyp removal is considered normal, and may last for a couple of weeks. Copious bleeding or severe pain is not normal and one should call the office or go to the nearest Emergency Room.*



***Remember, Colon cancer can be prevented by removing polyps...***

**For more information on colonoscopy procedures you can visit  
The following websites:**

[WWW.COLONOSCOPY.INFO](http://WWW.COLONOSCOPY.INFO)

[WWW.AMERICAN CANCER SOCIETY](http://WWW.AMERICAN CANCER SOCIETY)