

# COLON CANCER

Colon cancer is a disease in which malignant (cancer) cells form in the tissues of the colon.

The colon is part of the body's digestive system. The digestive system processes nutrients (vitamins, minerals, carbohydrates, fats, proteins, and water) from foods and helps pass waste material out of the body. The digestive system is made up of the esophagus, stomach, and the small and large intestines. The first 6 feet of the large intestine are called the large bowel or colon. The last 6 inches are the rectum. The rectum ends at the anus.

## RISK FACTORS FOR COLON CANCER

- Age 50 or older.
- A family history of cancer of the colon or rectum.
- A personal history of cancer of the colon, rectum, ovary, endometrium, or breast.
- A history of polyps (small noncancerous growths) in the colon.
- A history of ulcerative colitis (ulcers in the lining of the large intestine).
- Certain hereditary conditions, such as familial adenomatous polyposis and hereditary nonpolyposis colon cancer (HNPCC; Lynch Syndrome).

## SIGNS AND SYMPTOMS OF COLON CANCER

These and other symptoms may be caused by colon cancer or by other conditions. A doctor should be consulted if any of the following problems occur:

- A change in bowel habits.
- Blood (either bright red or very dark) in the stool.
- Diarrhea, constipation, or feeling that the bowel does not empty completely.
- Stools that are narrower than usual.
- General abdominal discomfort (frequent gas pains, bloating, fullness, or cramps).
- Weight loss with no known reason.
- Constant tiredness.
- Vomiting.

## SCREENING FOR COLON CANCER

**Fecal Occult Blood Test** - Special cards are coated with a stool sample and returned to the physician or lab. This test examines a patient's solid waste (stool) for occult (hidden) blood. Studies show that a fecal occult blood test performed every 1 or 2 years in people between the ages of 50-80 years decreases the number of deaths due to colorectal cancer.

**Sigmoidoscopy** - Sigmoidoscopy is an examination in which a doctor uses a thin, flexible tube with a light to look inside the rectum and colon for polyps, tumors, or abnormal areas. Studies suggest that fewer people may die of colorectal cancer if they have regular screening by sigmoidoscopy after the age of 50 years.

Digital Rectal Examination - A digital rectal examination is performed during an office visit or prior to sigmoidoscopy or colonoscopy. For this examination, the doctor or nurse inserts a lubricated gloved finger into the rectum and feels for lumps or abnormal areas. The evidence available does not suggest that digital rectal examination is effective in decreasing mortality from colorectal cancer.

Barium Enema - Barium enema is a procedure in which a liquid containing barium is put into the rectum and colon by way of the anus. Barium is a silver-white metallic compound that helps to show the image of the lower gastrointestinal tract on an x-ray. Barium enema may be effective in detecting large polyps.

Colonoscopy - Colonoscopy is an examination of the inside of the colon and rectum using a thin, lighted tube (called a colonoscope) inserted into the rectum. If the doctor sees polyps or other abnormal tissue during the procedure, they can be removed and further examined under a microscope. Studies suggest that colonoscopy is a more effective screening method than barium enema.

## **DIAGNOSIS (TESTS TO HELP DIAGNOSE (FIND) COLON CANCER)**

These tests include:

- Fecal occult blood test: A small stool sample is placed on a special card and returned to the doctor or lab. This test examines the stool for occult (hidden) blood.
- Digital rectal examination: The doctor or nurse inserts a lubricated gloved finger into the rectum and feels for lumps or abnormal areas and tests any stool for blood.
- Barium enema: A procedure in which a liquid containing barium is put into the rectum by way of the anus. Barium is a silver-white metallic compound that helps to show the image of the lower gastrointestinal tract on an x-ray.
- Sigmoidoscopy: An examination in which a doctor uses a sigmoidoscope (a thin, lighted instrument) to view the inside of the lower colon and rectum for polyps, tumors, or abnormal areas. If the doctor sees a polyp or other abnormal tissue during the procedure, it can be removed and further examined under a microscope.
- Colonoscopy: An examination of the inside of the entire colon and rectum using a colonoscope (a thin, lighted instrument) inserted into the rectum. If the doctor sees a polyp or other abnormal tissue during the procedure, it can be removed and further examined under a microscope.
- Biopsy: The removal of cells or tissues for examination under a microscope.

**After colon cancer has been diagnosed (found), tests are done to find out if cancer cells have spread within the colon or to other parts of the body.**

The process used to find out if cancer has spread within the colon or to other parts of the body is called staging. It is important to know the stage of the disease in order to plan the best treatment.

## **STAGES OF COLON CANCER:**

## Stage 0 (Carcinoma in Situ)

In stage 0, the cancer is found in the innermost lining of the colon only. Stage 0 cancer is also called carcinoma in situ.

## Stage I

In stage I, the cancer has spread beyond the innermost lining of the colon to the second and third layers and involves the inside wall of the colon, but it has not spread to the outer wall of the colon or outside the colon. Stage I colon cancer is sometimes called Dukes' A colon cancer.

## Stage II

In stage II, cancer has spread outside the colon to nearby tissue, but it has not gone into the lymph nodes. (Lymph nodes are small, bean-shaped structures that are found throughout the body. They filter substances in a fluid called lymph and help fight infection and disease.) Stage II colon cancer is sometimes called Dukes' B colon cancer.

## Stage III

In stage III, cancer has spread to nearby lymph nodes, but it has not spread to other parts of the body. (Lymph nodes are small, bean-shaped structures that are found throughout the body. They filter substances in a fluid called lymph and help fight infection and disease.) Stage III colon cancer is sometimes called Dukes' C colon cancer.

## Stage IV

In stage IV, cancer has spread to other parts of the body, such as the liver or lungs. Stage IV colon cancer is sometimes called Dukes' D colon cancer.

## Recurrent Colon Cancer

Recurrent colon cancer is cancer that has recurred (come back) after it has been treated. Recurrent colon cancer may recur in the colon or in other parts of the body, such as the liver, lungs, or both.

## TREATMENT OF COLON CANCER

### Surgery

Surgery (removing the cancer in an operation) is the most common treatment for all stages of colon cancer. A doctor may remove the cancer using one of the following types of surgery:

- **Local excision:** If the cancer is found at a very early stage, the doctor may remove it without cutting through the abdominal wall. Instead, the doctor may put a tube through the rectum into the colon and cut the cancer out. This is called a local excision. If the cancer is found in a polyp (a small bulging piece of tissue), the operation is called a polypectomy.
- **Resection:** If the cancer is larger, the doctor will perform a colectomy (removing the cancer and a small amount of healthy tissue around it). The doctor may then perform an anastomosis (sewing the healthy parts of the colon together). The doctor will also

usually remove lymph nodes near the colon and examine them under a microscope to see whether they contain cancer.

- Resection and colostomy: If the doctor is not able to sew the 2 ends of the colon back together, a stoma (an opening) is made on the outside of the body for waste to pass through. This procedure is called a colostomy. Sometimes the colostomy is needed only until the lower colon has healed, and then it can be reversed. If the doctor needs to remove the entire lower colon, however, the colostomy may be permanent.

Even if the doctor removes all the cancer that can be seen at the time of the operation, some patients may be offered chemotherapy after surgery to kill any cancer cells that are left. Treatment given after the surgery, to increase the chances of a cure, is called adjuvant therapy.

## Chemotherapy

Chemotherapy is the use of drugs to kill cancer cells. Chemotherapy may be taken by mouth, or it may be put into the body by inserting a needle into a vein or muscle. Either type of chemotherapy is called systemic treatment because the drugs enter the bloodstream, travel through the body, and can kill cancer cells throughout the body.

## Radiation therapy

Radiation therapy is the use of x-rays or other types of radiation to kill cancer cells and shrink tumors. Radiation therapy may use external radiation (using a machine outside the body) or internal radiation. Internal radiation involves putting radioisotopes (materials that produce radiation) through thin plastic tubes into the area where cancer cells are found. Colon cancer may be treated with external radiation.

After treatment, a blood test to measure carcinoembryonic antigen (CEA; a substance in the blood that may be increased when colon cancer is present) may be done along with other tests to see if the cancer has come back.

## COLO-RECTALCANCER PREVENTION

Cancer of the colon or rectum is often called colorectal cancer. The colon and the rectum are part of the large intestine, which is part of the digestive system.

Colorectal cancer is the second leading cause of cancer deaths in the United States. The number of new cases of colorectal cancer in the United States has been decreasing slightly, and the number of deaths due to colorectal cancer has been decreasing. The risk of colorectal cancer tends to increase after the age of 40.

Colorectal cancer can sometimes be associated with known risk factors for the disease. Many risk factors are modifiable though not all can be avoided.

### Diet and Lifestyle

Diet appears to be associated with colorectal cancer risk. Among populations that consume a diet high in fat, protein, calories, alcohol, and meat (both red and white) and low in calcium and folate, colorectal cancer is more likely to develop than among populations that consume a low-fat, high-fiber diet. One study has found that a diet low in fat and high in fiber, fruits, and vegetables does not reduce the risk of colorectal cancer recurrence during a 3- to 4-year period.

A diet high in saturated fat combined with a sedentary lifestyle may increase the risk of colorectal cancer. There is also evidence that smoking cigarettes may be associated with an increased risk of colorectal cancer.

#### Nonsteroidal Anti-Inflammatory Drugs

Some studies have shown that the use of nonsteroidal anti-inflammatory drugs (NSAIDs) may be associated with a reduced risk of colorectal cancer

#### Polyp Removal

The removal of polyps in the colon may be associated with a reduced risk of colorectal cancer.

#### Female Hormone Use

Postmenopausal female hormone use is associated with a decreased risk of colon cancer but not rectal cancer.