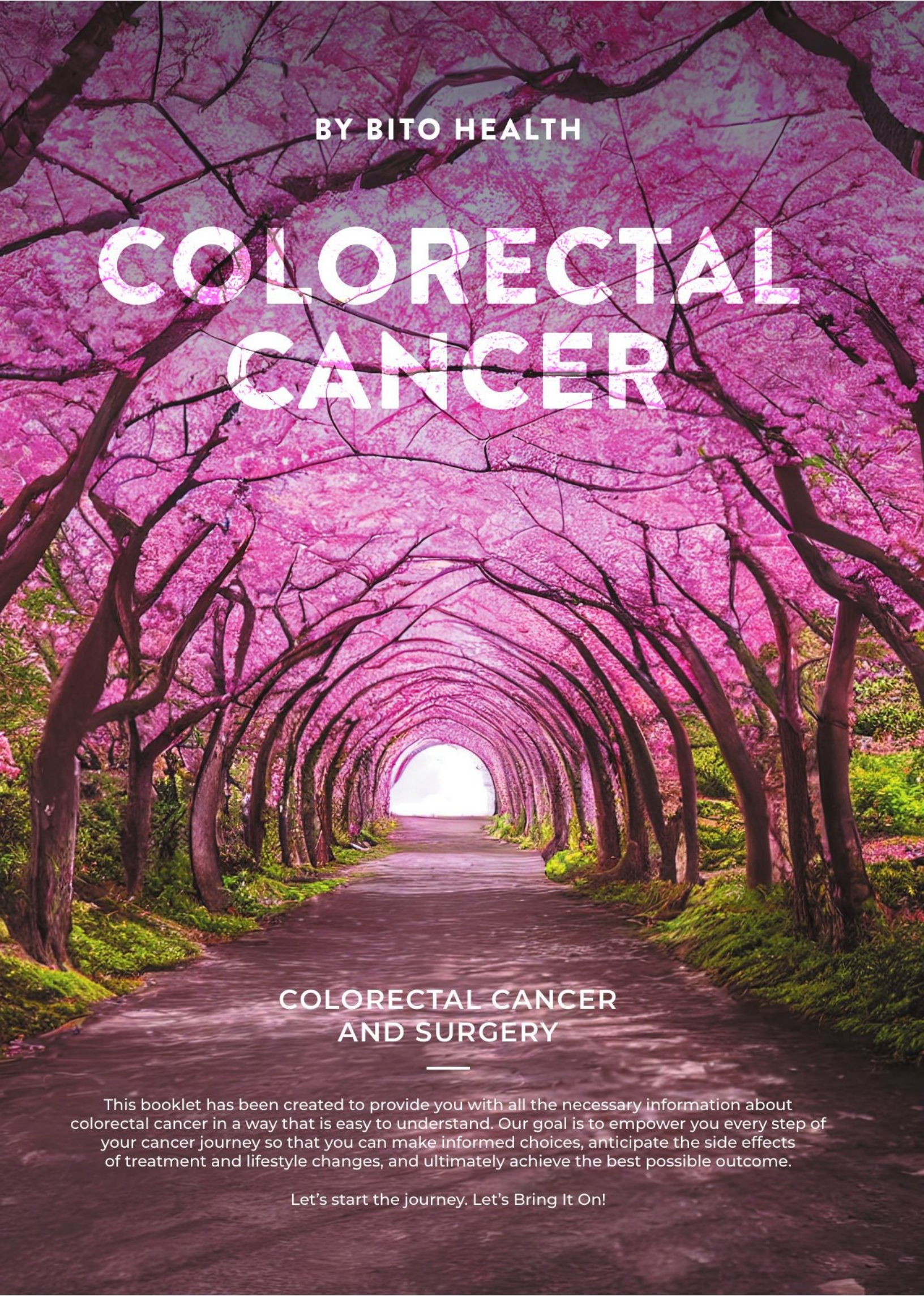




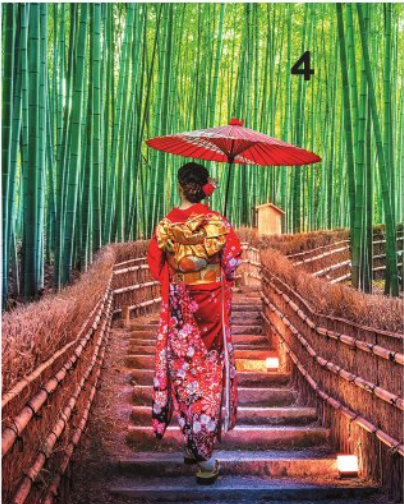
BY BITO HEALTH

COLORECTAL CANCER

COLORECTAL CANCER AND SURGERY

This booklet has been created to provide you with all the necessary information about colorectal cancer in a way that is easy to understand. Our goal is to empower you every step of your cancer journey so that you can make informed choices, anticipate the side effects of treatment and lifestyle changes, and ultimately achieve the best possible outcome.

Let's start the journey. Let's Bring It On!



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INTRODUCTION AND RISK FACTORS

Colorectal cancer is the 4th common cancer in the USA. It represents 7.8% of all new cancer cases in the U.S., with an incidence rate of 36 per 100,000 standard population, slightly more common in males than females. The risk factors for this cancer are age 50 or older, obesity, alcohol use, smoking, diabetes mellitus, and a family history of colon and rectum cancer. A personal history of cancer of the colon, rectum, ovary, endometrium, and breast, adenomatous colonic polyps, inflammatory bowel disease (ulcerative colitis, Crohn's disease), abdomen pelvic radiation, and hereditary colon cancer syndromes such as Familial Adenomatous Polyposis (FAP), Lynch and Hereditary Nonpolyposis Colorectal Cancer (HNPCC) syndromes.

“ It is during our darkest moments that we must focus to see the light.

Aristotle Onassis

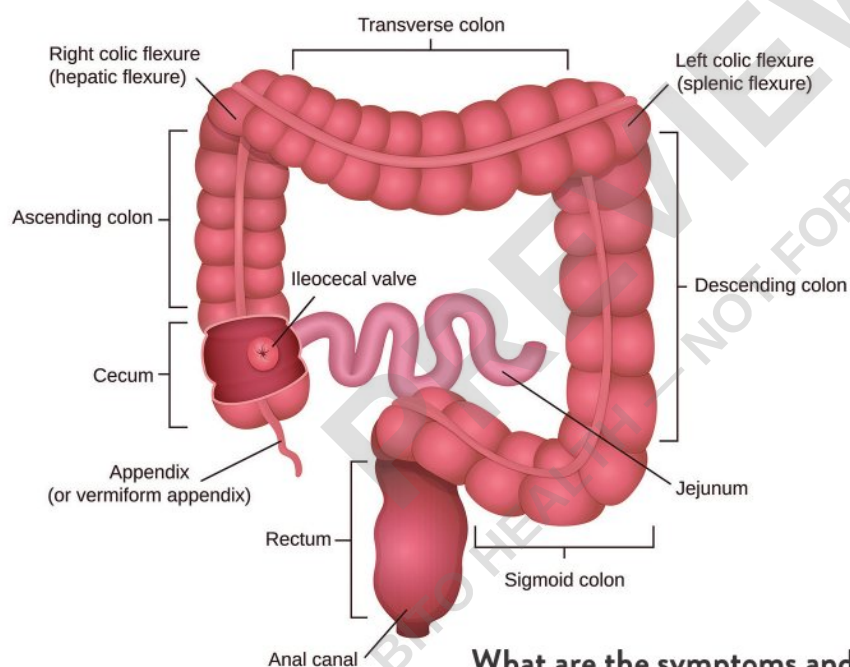


WHERE, WHAT, SYMPTOMS, AND DIAGNOSIS

Where is the colon?

The colon, or large intestine, is part of the body's digestive system. The digestive system comprises the esophagus, stomach, small and large intestines. The digestive system processes and absorb nutrients from foods and helps pass waste material out of the body. The first 6 feet of the large intestine are called the colon. The last 6 inches are the rectum and the anal canal. The anal canal ends at the anus.

Structure of digestive organs



What are the symptoms and signs of colon cancer?

It is essential to know that the symptoms of colorectal cancer can vary, and some people with cancer may not have any symptoms. Others may have persistent changes in bowel habits, including diarrhea or constipation, changes in the caliber of the stool (more pencil-like), rectal bleeding or blood in the stool, and persistent abdominal discomforts such as cramps and others.

What is colorectal cancer?

Colon cancer is a type of cancer that begins in the large intestine. It usually starts as small, noncancerous (benign) clumps of cells called polyps that form on the colon's inner lining (mucosa). Over time some of these polyps undergo cancerous changes.

How is colorectal cancer diagnosed?

Blood tests:

No blood tests can tell whether you have colorectal cancer.

Fecal occult blood tests (FOBT)

are noninvasive tests to check your stool for microscopic (occult) blood. This test is used as a screening tool for colorectal cancer, as the blood in the stool can be an early sign of the disease. There are two types of FOBT: Guaiac FOBT and fecal immunochemical test (FIT). Both tests detect tiny amounts of blood in the stool that may not be visible to the naked eye. Upper and lower endoscopy is the next step if the tests are positive. Of note, the FOBT is not always accurate. There is a possibility of false-negative and false-positive.

Screening colonoscopy:

If colorectal cancer is suspected in a patient, a lower endoscopy (sigmoidoscopy or colonoscopy) may be necessary for diagnosis. During this procedure, the patient is sedated, and a lighted endoscope is inserted through the anus to examine the lining of the colon and rectum. The gastroenterologist or colorectal surgeon will locate the lesion's site and biopsy any areas that appear suspicious. The pathologist will then examine these samples under a microscope to make a diagnosis.

Pathological Diagnosis of Colorectal Cancer:

Typically, the pathology report will include information about the type and grade of the cancer.

THE AMERICAN CANCER SOCIETY RECOMMENDS THAT PEOPLE AT AVERAGE RISK FOR COLORECTAL CANCER BEGIN REGULAR SCREENING AT AGE 45

STAGING

What other tests do I need after the diagnosis is made?

Once the diagnosis of colorectal cancer is established, the local and distant extent of the disease must be determined to provide a framework for discussing therapy and prognosis. Hence, your doctor may order tests to determine the stage of your cancer. By knowing the stage of your cancer, your healthcare team can plan the best treatment options and predict your chances of survival.

Blood tests:

CEA (carcinoembryonic antigen)
CBC (Complete Blood Count)
Chem 7 (Basic Metabolic Panel)
LFTs (Liver function tests).

Digital rectal examination (DRE) and Rigid Sigmoidoscopy:

In patients with rectal cancer, these tests will provide critical information about the distance of the tumor from the anal verge. DRE is a test performed in the office that examines your lower rectum and anus. The physician will insert a gloved, lubricated finger into your rectum through your anus to check for abnormalities. Rigid sigmoidoscopy is performed by inserting a proctoscope with tiny light at the end into your rectum through your anus.

CT scan (Computer Tomography) or MRI (Magnetic Resonance Imaging):

A radiological study that makes a series of images through the different body areas (chest, abdomen, and pelvic). Contrast may be injected into a vein in your arm or swallowed to help the internal tissue show up more clearly.

PET scan (Positron Emission Tomography):

In selected patients, a PET may provide additional helpful information. A nuclear medicine study to find cancer cells in the body. A small amount of radiolabeled sugar is injected into a vein. The PET scanner shows where sugar is being used in the body. Cancer cells appear

brighter in the picture because they are more active and consume more sugar than normal cells. A PET is useful to help determine the N-stage and M-stage.

EUS (Endoscopic Ultrasound):

A transrectal endoscopic ultrasound will be beneficial in patients with rectal cancer. A probe at the end of the endoscope sends sound waves off internal tissues to make echoes and then form pictures of body tissues. An additional biopsy can be taken from the suspicious area and any suspicious adjacent lymph nodes. EUS can help your doctor determine the tumor's exact location and local extent (T-stage) and see whether surrounding lymph nodes are involved (N-stage).





MULTIDISCIPLINARY TEAM APPROACH

Specialist physicians, you are going to meet

As you undergo treatment for colorectal cancer, you will work with a team of specialized physicians who collaborate to ensure the best possible outcome for you. This care team coordinates multiple treatment approaches and sequences to treat your cancer effectively. Each team member possesses the experience, competence, compassion, communication skills, and passion to provide exceptional care. We strongly suggest bringing a family member or close friend with you to these visits to assess the human qualities of each specialist and ensure you receive the best possible care.

Gastroenterologist:

A specialized physician to evaluate your colon with an endoscopy (colonoscopy) & Transrectal endoscopic ultrasound (EUS).

Medical Oncologist:

A specialized physician treats cancer using chemotherapy, targeted therapy, immunotherapy, and other biological therapy. They also provide supportive care and coordinate your treatment plan provided by other specialists.

Radiation Oncologist:

A specialized physician treats cancer using radiation.

Surgeon: General, Colorectal, or Surgical Oncologist

A specialized physician to provide surgical care to treat your cancer.

Enterostomal Therapists

For certain patients undergoing colorectal surgery, it may be necessary to create a stoma. A colon stoma is a surgical procedure that creates an opening in the abdomen for the end of the large intestine (colon) to pass through. This opening is called a stoma, allowing stool to exit the body without passing through the rectum and anus. A colon stoma may be temporary or permanent, depending on the reason for the surgery.

In such cases, it is highly recommended that patients and their families consult an enterostomal therapist. These professionals offer teaching, education, and support regarding stoma care and can assist with preoperative marking of the stoma site.



Questions that you may want to ask your physician.

To make the most of your time with your doctor, preparing a list of questions before your consultation is helpful. Consider asking some basic questions such as:

1. **Location:** Where exactly is my cancer?
2. **Diagnosis:** Can you explain the pathology diagnosis to me?
3. **Stage:** How advanced is my cancer? What stage is my cancer?
4. **Investigations:** What tests do I need before we decide on the treatment options?
5. **Treatment options:** What are the treatment options for my colorectal surgery? Will I need an ileostomy or a colostomy?
6. **Complications of treatment:** What are the potential side effects of each treatment option?
7. **M.D. recommendation:** What is the best treatment for me?
8. **Second opinion:** Should I see another specialist for a second opinion?
9. **For surgeon:** What is your track record in performing this surgery? How many such surgeries have you performed in the last year? Can you describe a typical course of a successful surgery, hospital stay, and after-surgery recovery? What and when was your recent major complication?"
10. **Other resources:** Can I take any brochures or printed material with me?

COLORECTAL CANCER STAGING SYSTEM

Two staging systems are routinely used in colorectal cancer: TNM and AJCC systems. In both systems, the lower the number, the less cancer has spread.

1. TNM staging system (T stands for Tumor, N stands for Node, M stands for Metastatic)

American Joint Committee on Cancer (AJCC) TNM Staging Classification for Colon Cancer 8th ed., 2017

T – primary Tumor		N – Regional Lymph Nodes	
The “T-stage” refers to how deep the tumor penetrates the colon muscle wall, from the innermost layer to the outermost layer.		The “N-stage” refers to whether cancer has spread to the nearby lymph node.	
TX	Primary tumor cannot be assessed	NX	Regional lymph nodes cannot be assessed
T0	No evidence of primary tumor	N0	No regional lymph node metastasis
T1	Carcinoma in situ: intramucosal carcinoma (involvement of lamina propria with no extension through muscularis mucosae)	N1	One to three regional lymph nodes are positive (tumor in lymph nodes measuring ≥0.2 mm), or any number of tumor deposits are present and all identifiable lymph nodes are negative
T2	Tumor invades the submucosa (through the muscularis mucosabut not into the muscularis propria)	N1a	One regional lymph node is positive
T3	Tumor invades through the muscularis propria into pericorectal tissues	N1b	Two or three regional lymph nodes are positive
T4	Tumor invades* the visceral peritoneum or invades or adheres* to adjacent organ or structure	N1c	No regional lymph nodes are positive, but there are tumor deposits in the subserosa, mesentery, or nonperitonealized pericolic, or perirectal/mesorectal tissues
T4a	Tumor invades* through the visceral peritoneum (including gross perforation of the bowel through tumor and cotinuous invasion of tumor through areas of inflammation to the surface of the visceral peritoneum)	N2	Four or more regional lymph nodes are positive
T4b	Tumor directly invades* or adheres** to adjacent organs or structures	N2a	Four to six regional lymph nodes are positive
		N2b	Seven or more regional lymph nodes are positive

M – Distant Metastasis	
The “M-stage” refers to whether the cancer has metastasized. Cancer has spread from the primary tumor to other body parts.	
M0	No distant metastasis by imaging, etc.; no evidence of tumor in distant sites or organs. (This category is not assigned by pathologists)
M1	Metastasis to one or more distant sites or organs or peritoneal metastasis is identified
M1a	Metastasis to one site or organ is identified without peritoneal metastasis
M1b	Metastasis to two or more sites or organs is identified without peritoneal metastasis
M1c	Metastasis to the peritoneal surface is identified alone or with other site or organ metastases

Table 1. Definitions for T, N, M