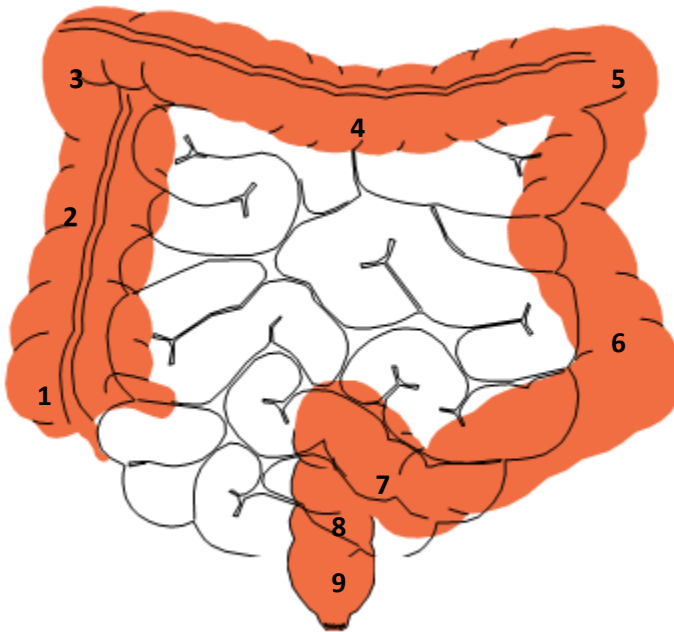


THE COLON

This is the portion of the intestine which lies between the small intestine and the outlet (Anus) .



This part is responsible for formation of stool. The large intestine (colon- coloured orange) does this by absorbing water from the digestive effluent that reaches it from the small intestine.

It is divided into the following parts

1. The Caecum with the Appendix
2. The Ascending Colon (Right side)
3. The Hepatic Flexure(the bend on the right side)
4. The Transverse Colon
5. The Splenic Flexure (the bend on the left side below the spleen)
6. The Descending Colon
7. The Sigmoid Colon
8. The Rectum which ends at the
9. Anal Canal.

COLON CANCER

This part of the intestine is also prone to develop cancers. It is the third most common cancer in men and the second most common cancer in women worldwide. The incidence of this cancer in India while low has shown a trend for increasing.

CAUSES:-

DIET:-

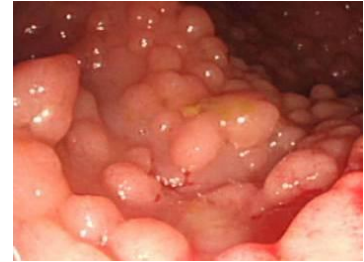
This is in part due to a mobile population prone to more to eating fast-food. People with a diet rich in red meat, animal fat, low in fruits and fibres are at increased risk for developing this cancer. Obesity, sedentary lifestyle, cigarette smoking and alcohol intake also carries an increased risk. Diabetics also carry a higher risk.

A diet rich in fruits, whole grain, cereal fibre and yoghurt seems to protect from the development of Colon Cancer.

HEREDITARY:-

Two distinct lines of hereditary spread of colon cancer are known

- a. Those in whom the colon is studded with small "grape-like" protrusions called polyps. Of affected individuals, all (100%) will develop cancer by the time they are 40 years.
- b. Another group of families who develop cancer without developing polyps called the "Lynch Syndrome". About 40% of these individuals have a risk of developing cancer in their lifetime. They are also prone to develop cancers of the urinary passages, of the uterus and of other rarer tumours.



Both groups of families carry defective genes which can be identified.

INFLAMMATORY DISEASES:-

Two diseases cause intense inflammation of the colon. Both these disease are auto-immune, ie: the body produces antibodies against the colonic tissues leading to recurring inflammation and repair. These are

- a. **Ulcerative Colitis**, which affects the colon only and almost always spreads in a contiguous fashion from the anal canal upwards and
- b. **Crohn's disease**, which can affect any part of the intestine from the mouth to the anal canal and occurs as discrete "skip" lesions.

The incidence increases with the duration of the disease and the extent of involvement.



SYMPTOMS

- Unexplained iron-deficiency anaemia,
- Rectal bleeding which can be bright red but is often darker in colour and foul smelling,
- Abdominal pain which may be colicky or constant,
- Recent change in bowel habits, and
- Intestinal obstruction with complete stoppage of passage of stool and flatus with abdominal distension and colicky pain or

- Perforation where the pain is constant. The perforation can be localised with local symptoms and signs of inflammation or generalised with the patient presenting with severe incapacitating pain and shock.

Right-sided lesions are more likely to bleed and cause anaemia, while left-sided tumours may present as bowel obstruction.

WORK-UP

The reduction in the rate of colon cancer deaths has been attributed to screening for the disease, early diagnosis and treatment.

The American College of Gastroenterology recommend colonoscopy every 10 years beginning at the age of 50 years for asymptomatic persons and at the age of 45 for persons of African descent.

For screening purposes, patients with one first-degree relative diagnosed with colorectal cancer or advanced adenoma at age 60 years or older are considered at average risk. For patients with a single first-degree relative diagnosed with colorectal cancer or advanced adenoma before age 60 years, or those with two first-degree relatives with colorectal cancer or advanced adenomas, the guideline recommends colonoscopy every 5 years, beginning at age 40 years or at 10 years younger than the age at diagnosis of the youngest affected relative.

Tests that detect adenomatous polyps and cancer, and their recommended frequency, include the following (any one):-

Endoscopy

- Flexible sigmoidoscopy every 5 years
- Colonoscopy every 10 years.

Imaging

- Double-contrast barium enema every 5 years
- Computed tomographic (CT) colonography every 5 years

Tests that primarily detect cancer, and their recommended frequency, include the following:-

- Annual guaiac-based faecal occult blood test with high test sensitivity for cancer.
- Annual faecal immunochemical test (FIT) with high test sensitivity for cancer - more sensitive than faecal occult blood tests.
- Stool DNA test with high sensitivity for cancer, interval uncertain.

Colonoscopy findings and recommended scheduling of follow up colonoscopy are as follows:-

- No polyps – 10 years
- Small (< 10 mm) hyperplastic polyps in rectum or sigmoid – 10 years
- 1–2 small (< 10 mm) tubular adenomas – 5- 10 years
- 3–10 tubular adenomas – 3 years
- 10 adenomas – < 3 years
- One or more tubular adenomas \geq 10 mm – 3 years
- One or more villous adenomas – 3 years
- Adenoma with high-grade dysplasia – 3 years

For serrated lesions, recommended surveillance intervals are as follows :-

- Sessile serrated polyp(s) < 10 mm with no dysplasia – 5 years
- Sessile serrated polyp(s) \geq 10 mm with no dysplasia – 3 years
- Sessile serrated polyp with dysplasia – 1 year
- Traditional serrated adenoma – 1 year
- Serrated polyposis syndrome – 1 year

Why screening?

Earlier diagnosis and treatment leads to better and more successful treatment.

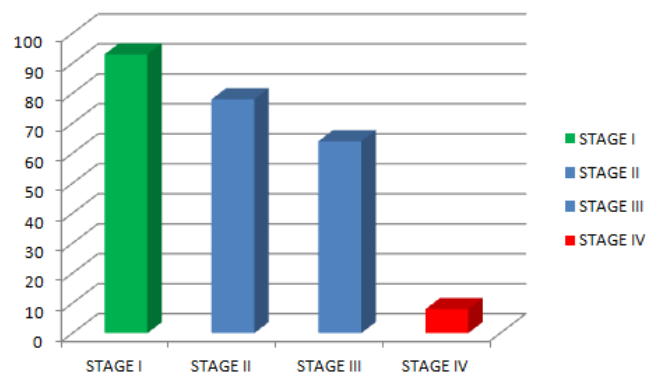
SURVIVAL ACCORDING TO STAGE

The five-year survival rate for stage I colorectal cancer is 93% according to the American Cancer Society.

The five-year survival rate for stage II colon cancer is 78%.

The five-year survival rate for stage III colon cancer is about 64%.

The five-year survival rate for stage IV colon cancer is nearly 8%.



INVESTIGATIONS AFTER DIAGNOSIS

Colonoscopy and biopsy. the doctor would like to confirm the presence of cancer by a biopsy carried out through the colonoscope.

Staging the disease:-

As cancer has a tendency to spread, investigations to check areas where the cancer can spread to are also carried out. These usually include:-

A chest x-ray

An **US Scan** or preferably a **CT Scan** of the **abdomen**.

A **CT Scan of the chest** may also be required.

A blood for a tumour marker called **CEA** is also carried out.

Other tests to assess the fitness for surgery may also be carried out.

Sometimes the doctor may ask for a **PET CT Scan**.

TREATMENT

The mainstay of treatment is Surgery, Removal of the diseased segment of Colon with the Tumour and reconstruction of the continuity of the intestine by joining the cut ends- called an anastomosis. Sometimes, if the tumour is very low, the doctor may prefer to remove the rectum and anal canal and leave the patient with a permanent opening in the abdomen to collect stool - called a **colostomy**.

Sometimes, to protect the anastomosis, the doctor may prefer to create a temporary diversion of stool into a bag fitted on the abdomen called **a loop stoma, ileostomy** - where the small intestine is used, **colostomy** -where the large intestine is used to make this temporary diversion of stool.

To help successful treatment, sometimes the tumour is subjected to pre-operative radiation and chemotherapy. This is called **Neo-adjuvant treatment** in medical terms. Often, treatment by chemotherapy is given after surgery, when it is referred to as **Adjuvant therapy**.

