

# Colorectal Cancer Burden, Screening and Awareness

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DOI: <https://doi.org/10.3329/jafmc.v17i2.58357>

Globally, colorectal cancer (CRC) is one of the leading causes of cancer death and third most common cancer in recent years<sup>1</sup>. CRC is an etiologically heterogeneous disease<sup>2</sup> and can be inherited with 30-40% heritability<sup>3</sup>. Approximately 60–65% of CRC is sporadic cases which are caused by somatic genetic and epigenetic aberrations largely attributable to potentially modifiable risk factors<sup>2</sup>. Approximately 25% of CRC patient have positive family history of colorectal cancer<sup>2</sup>.

In regards to the type, nearly all colorectal cancers (>90%) are adenocarcinoma. Other rare types are squamous cell carcinoma, adenosquamous carcinoma, spindle cell carcinoma and undifferentiated carcinoma<sup>1</sup>. CRC is primarily prevalent in developed countries, but recently due to changes in diet and lifestyle the incidence of CRC also increases in developing countries<sup>4</sup>. Moreover, existing screening programs as well as available medical treatment are currently insufficient in less affluent countries<sup>1</sup>.

Globally the increase of prevalence of CRC is alarming in recent years. CRC accounts for 9.4% of cancer deaths and 10% of global cancer incidence in 2020 and it is just lower than lung cancer (18%). In 2020, the worldwide estimated new cases and death caused by CRC were 1.93 million and 0.94 million respectively. Based on the projection of age, population growth, and human development, the global number of new CRC cases is predicted to reach 3.2 million in 2040<sup>5</sup>.

According to GLOBOCAN 2020, new cases of colon cancer are 1.15 million, rectal cancers 0.7 million, and anal cancer 50,000 in 2020 globally. The projection values in 2040 of these numbers are predicted to rise to 1.92 million, 1.16 million, and 78,000 respectively<sup>6</sup>. Incidences of CRC vary by countries. In 2020, the highest age-standardized incidence rates were 45.3, 43.9, and 41.9 cases per 100,000 persons in Hungary, Slovakia and Norway respectively. The lowest age-standardized incidence rates in 2020 were 3.3, 3.7, and 3.8 cases per 100,000 persons, observed in Guinea, Gambia, and Bangladesh<sup>6,7</sup>. Colorectal cancer is most frequently occurring between the ages of 65 to 74 years. The rising incidence of young-onset CRC (before age 50 years) is an emerging trend of unknown reason. The incidence of young-onset CRC account for 10.5% of new colorectal cancer cases. Incidence of colorectal cancer (specifically adenocarcinoma) increased by almost 15% from 2000-2002 to 2014-2016 among the 40 to 49 years age group<sup>8</sup>.

Most of the CRC patients are already in the advanced stage when they present with symptoms such as rectal bleeding, anemia or abdominal pain. Diagnosis at the different clinical stages of CRC is one of the determinants of the survival rate. Thus, population-based screening programs have been proposed to prevent CRC development by eliminating precancerous lesions, increasing early detection and improving therapy outcomes. Two commonly used screening in clinical practice are stool-based tests to detect molecular markers and blood, and direct visualization of colon and rectum. Stool-based tests are non-invasive screening options and does not require any special preparation<sup>5</sup>.

### Stool-based tests includes<sup>9</sup>:

1. The high-sensitivity guaiac fecal occult blood test (gFOBT), is based on chemical detection of blood.
2. Fecal immunochemical test (FIT), uses antibodies to detect blood.
3. Stool DNA test, detect DNA biomarkers for cancer cells shed from the lining of the colon and rectum into stool.

If the test is positive, invasive endoscopic methods, such as colonoscopy will be performed to further confirm the abnormal results. Direct visualization tests to screen for colorectal cancer include colonoscopy, CT colonography and flexible sigmoidoscopy. A camera is used to visualize the inside of the colon in colonoscopy and flexible sigmoidoscopy, while x-ray images are used in CT colonography. A follow-up with colonoscopy is required for further evaluation, when abnormal results are found on flexible sigmoidoscopy or CT colonography<sup>8</sup>. American cancer society recommends regular screening for people aged 45 years and older. Regular screening should starts earlier among the people with high risk of CRC or having positive family history of CRC<sup>5</sup>. Recommended screening test and test intervals are as below<sup>8</sup>:

Screening tests	Recommended intervals
High-sensitivity gFOBT or FIT	Every year
sDNA-FIT	Every 1 to 3 years
CT colonography	Every 5 years
Flexible sigmoidoscopy	Every 5 years
Colonoscopy	Every 10 years

March is the month of Colorectal Cancer Awareness. National Colon Cancer Awareness Month (or National Colorectal Cancer

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Awareness Month) in the United States was first established via Presidential Proclamation, signed by William Jefferson Clinton on February 29, 2000. Colorectal Cancer Awareness month is celebrated around the world to raise awareness of the importance of colorectal cancer screening, as well as supporting patients with colorectal cancer, those recovered from it, and their families. We can reduce the risk of developing colorectal cancer by adopting healthier lifestyle habits. Recognized risk factors for colorectal cancer include obesity, low levels of physical activity, a poor diet, and tobacco smoking.

Regular physical activity, a healthy diet of fresh fruit and vegetables, with sufficient calcium, vitamins, and fiber, limiting alcohol consumption, smoking cessation are considered as primary prevention of CRC<sup>5</sup>. The true CRC burdens in our country to this date remain an enigma, owing to lack of awareness, notification and accountability of established cases. Till date we have yet to adopt an effective screening program for early detection of CRC. We also are lagging behind in disseminating CRC awareness in the society.

We can prevent CRC provided the pre-cancerous polyps are detected and removed before they become malignant through screening program. It is possible to initiate screening program within Bangladesh Army with existing facilities. Initially we can start at small scale with a view to expand the facility to the society at large. At the same time, we must also make some efforts to spread awareness countrywide; this can be done through several means, namely;

1. Inviting our health care providers, patients and their family member to take part in various educational campaigns conducted in awareness month of March.

2. Encouraging members of the campaign to share their participation through social media which will help to amplify the message.

3. We can consider distributing a press release to local media outlets highlighting our efforts.

By understanding all of the aforementioned measures together we can prevent colorectal cancer and thus innumerable lives.

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