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March is Colorectal Cancer Awareness Month – What Clinicians Need to Know in 2021



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March is National Colorectal Cancer (CRC) Awareness Month. Annually in March, hospital systems, media outlets, and community partners look to gastroenterologists to promote CRC awareness, to advocate for policy change, and to educate the public about the importance of screening, early detection, and prevention. The goal of this article is to provide an update on what's new in the arena of CRC to support your efforts to get the word out about CRC. Specifically, we will review: 1) the recent increase in early onset colorectal cancer, 2) new guidelines to begin screening at age 45 in average risk adults, 3) when to start screening patients who have a first degree relative with CRC or an advanced polyp, 4) dietary and lifestyle changes to decrease CRC risk, and 5) resources with practical information about CRC screening tests to provide to your colleagues, patients, and community.

INTRODUCTION

National Colorectal Cancer Awareness Month was first established in 2000 by a Presidential Proclamation signed by President Bill Clinton.¹ Annually in March, hospital systems, media outlets, and community partners look to gastroenterologists to promote colorectal cancer (CRC) awareness, to advocate for policy change, and to educate the public about the importance of screening, early detection and prevention.

Colorectal cancer is the third most common cancer in the United States and the second leading cause of cancer death in men and women combined. In 2021, the American Cancer Society (ACS) projects there will be 149,500 new CRC cases and

52,980 deaths from the disease.² Lifetime risk of developing CRC is approximately 1 in 23 (4.4%) in men and 1 in 25 (4.1%) in women. CRC incidence is 20% higher in Blacks compared to non-Hispanic whites (NHW) and this disparity is predominantly due to decreased access to healthcare/screening and increased risk factors.³ The cause of CRC is unknown, but certain risk factors are strongly linked to development of the disease (see Table 1).⁴

The majority of CRCs arise from precursor polyps which progress to adenocarcinoma over many years. Molecular carcinogenesis pathways include chromosomal instability, microsatellite instability, and CpG island methylator phenotype. The evolution from polyp to cancer is a slow process, on average requiring over 10 years.^{5,6}

Screening saves lives. CRC is preventable if pre-cancerous polyps can be detected and removed before they become malignant. Survival rates

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approach 90% for those diagnosed with localized disease⁷, highlighting the utility of early detection through screening. Although CRC is the second leading cause of cancer deaths in the United States, mortality rates have declined by 53% from 1970-2016 largely due to consistent increases in screening.³ Between 2003 and 2007, the Centers for Disease Control (CDC) reported nearly 66,000 fewer CRC diagnoses and 32,000 fewer deaths, half of which were attributed to improved screening rates.⁸ Yet despite these gains in screening, there is still work to be done as confirmed by these sobering facts:

- 38 million Americans over age 50 are not getting recommended CRC screening.
- Only two-thirds (67.3%) of age eligible Americans are up to date with CRC screening.
- Although providers encourage on-time health maintenance, adults between age 50-64 are the least likely to be screened.⁹
- Screening rates vary geographically – across the U.S. screening prevalence was lowest in New Mexico (58.5%) and highest in Maine (75.9%).¹⁰
- Rural communities, low income/uninsured and certain racial/ethnic groups including Hispanic, American Indian/Native Alaskan, and Asian/Pacific Islander are those with the greatest disparity.⁹
- There has been an alarming rise in CRC among young adults under the age of 50.¹¹ As a result, the United States Preventive Services Task Force recently submitted a draft recommendation to decrease the screening age to 45 years old for average risk adults.¹²

In an effort to increase screening rates and to save more lives, the ACS, CDC, and the National Colorectal Cancer Roundtable (NCCRT) expanded their “80% by 2018” initiative to the current “80% in Every Community” – a goal to screen 80% of age-eligible adults in every community.¹³ This campaign urges us all to reflect upon how we can promote CRC awareness in all of the “communities” we are connected to.

2020 was a devastating year due to the global COVID-19 pandemic, which led to the deaths of millions of people. COVID-19 also negatively affected CRC screening. Following the declaration of the COVID-19 national emergency, U.S. CRC

Table 1. Colorectal Cancer Risk Factors

Modifiable Risk Factors	<ul style="list-style-type: none"> • Overweight/Obesity • Diet • Lower physical activity • Smoking • Alcohol use
Non-modifiable Risk Factors	<ul style="list-style-type: none"> • Aging • Personal or family history of CRC or advanced polyps • Inherited (genetic) syndrome linked with CRC • Race/ethnic background • Type 2 diabetes • Inflammatory bowel disease • Pelvic radiation therapy

screening rates abruptly dropped 86%.¹⁴ Komodo Health analyzed their nationwide database and found that during spring 2020, colonoscopy procedures declined by 89%, resulting in 32% fewer new CRC diagnoses.¹⁵ COVID-19 also exacerbated disparities. People lost their livelihoods and in turn their health insurance; as a result, they no longer had disposable income to contribute to preventive healthcare. The Epic Health Research Network estimates that between March - June 2020, 95,000 colon cancer screenings were missed, a staggering 64% fewer screenings as compared to prior years.¹⁴ A recent modeling study predicts that this sizable deficit of missed screenings will lead to nearly 4,500 more CRC deaths over the next decade as a result of the pandemic.¹⁶ This March especially, we will need to augment our efforts to increase CRC screening education and awareness in an effort to make up this substantial loss.

The goal of this article is to provide an update on what’s new in the arena of CRC and to provide links to resources to support your efforts in getting the word out about CRC and ultimately help you to save lives. Specifically, we will review:

- The recent increase in early onset colorectal cancer
- New guidelines to begin screening at age 45 in average risk adults

- When to start screening patients who have a first degree relative with CRC or an advanced polyp
- Dietary and lifestyle changes to decrease CRC risk, and
- Resources with practical information about CRC screening tests that you can provide to your colleagues, patients, community.

Increasing Incidence of Colorectal Cancer in Adults Under 50

Even superheroes are vulnerable to colon cancer. Chadwick Boseman was diagnosed with stage 3 colon cancer in 2016 at age 39, the year he made his debut as Black Panther in *Captain America: Civil War*.¹⁷ He privately fought the disease for four years and tragically lost his battle in August 2020 at the age of 43.¹⁸

Nearly 18,000 young people under the age of 50 will be diagnosed with early onset colorectal cancer (EOCRC) this year. Tragically, 49 young people will be diagnosed with EOCRC every day and 10 young people per day will die from the disease.³ Over the last five decades, CRC incidence and mortality have declined in older adults in large part due to an increased uptake of screening, most notably colonoscopy and polypectomy. Recently, the overall incidence has plateaued or even slightly risen due to an alarming increase in the number of young adults under the age of 50 who are diagnosed with the disease. The incidence of EOCRC has been rising since the mid-1970s with as much as 3% annual increases in the last five years. Colorectal cancer is the second leading cause of cancer death in young men under age 50.¹¹

EOCRC patients have a significantly higher prevalence of distal tumors in the left colon and rectum and are more likely to present with symptoms such as rectal bleeding. Tumors are more likely to have high microsatellite instability and, unlike tumors in older patients, they are less likely to have BRAF mutations. EOCRC displays more aggressive histopathologic features and patients are more likely to have larger tumors and metastatic disease at presentation.¹⁹ Additionally, EOCRC patients often experience delays in diagnosis. A study of rectal cancer patients found that the median time to diagnosis was four times longer in patients under age 50 as compared to those over age 50 (217 versus 30 days, respectively).²⁰ Both

providers and patients tended to attribute alarm symptoms such as rectal bleeding or constipation to minor problems like hemorrhoids and did not consider or recognize that they could be due to CRC in young patients.

The etiology of the rise in EOCRC is unknown. Although genetic conditions are more common in EOCRC, similar to CRC in older patients, the majority of EOCRC cases are sporadic. Increases in EOCRC have also been documented in Europe, Asia, Australia, New Zealand, and Canada, with the uptrend beginning in the mid-1990s. Younger generations carry the increased CRC risk with them as they age in what is known as the birth cohort effect. This generational increase in disease suggests an environmental etiology.²¹ Recent evidence portends diets rich in red and processed meats, high-fructose corn syrup, and heavy alcohol consumption may be partly responsible for the escalating number of cases perhaps due to enhanced inflammation and effects on the gut microbiome. Environmental toxins such as pesticides and chemicals in air, water, food, and soil are also being studied.²²

Numerous research studies are currently underway to determine the cause of EOCRC. Today, an important way we can all help to combat this deadly disease in young people is by increasing awareness. Spread the word about the early warning signs of colon cancer in young adults – symptoms such as rectal bleeding and constipation. Tell young adults, coaches, religious leaders, and employers that CRC is no longer an “old person’s disease.” With commitment and effort, let’s prevent our own superheroes from developing colon cancer.

Screening Should Begin at Age 45 in Average Risk Adults

In December 1995, the United States Preventive Services Task Force (USPSTF) first recommended that primary care physicians screen adults 50-75 years of age for CRC.²³ The Balanced Budget Act of 1997 provided Medicare coverage for CRC screening beginning January 1, 1998.²⁴ In 2005, the American College of Gastroenterology (ACG) Committee on Minority Affairs and Cultural Diversity published a paper reporting increased CRC incidence in Blacks as compared to NHW. Blacks develop CRC at a younger age, have more

Table 2. 2020 United States Preventive Services Task Force Draft Guideline for Colorectal Cancer Screening

- Recommends CRC screening for all adults age 50-75 years (Grade A evidence)
- Recommends CRC screening in adults age 45-49 years (Grade B evidence)
- Recommended screening strategies include:
 - Annual stool based fecal immunochemical testing (FIT) or high sensitivity guaiac fecal occult blood testing
 - Stool DNA testing every 1 or 3 years
 - Colonoscopy every 10 years
 - CT colonography every 5 years
 - Flexible sigmoidoscopy every 5 years
 - Flexible sigmoidoscopy every 10 years combined with annual FIT

proximal adenomas and cancers, and are less likely to have been screened for CRC. They are often diagnosed at advanced cancer stages resulting in the highest rates of death and the shortest survival. The ACG was the first society to recommend that Blacks begin CRC screening at age 45.²⁵ One year later, the American Society for Gastrointestinal Endoscopy (ASGE) also endorsed the starting age at 45 years.²⁶ From 2006-2015, CRC incidence in Blacks dropped by more than 2.5% and death rates also fell from 2007-2016, with sharper declines as compared to NHW.²⁷

In 2018, the ACS Task Force led by Dr. Andrew Wolf reviewed microsimulation modeling and a systematic analysis of evidence including the recent rise in EOCRC to publish the ACS guideline recommending that all average risk adults begin CRC screening at age 45, regardless of race.²⁸ Further support for this recommendation emerged from the more than 40,000 patient New Hampshire colonoscopy registry confirming that the incidence of advanced polyps and CRC was similar in adults aged 45-49 years old as compared to 50-54-year-old adults.²⁹ Comparing screening strategies in a

validated Markov model in 2019, Ladabaum et al. suggested that CRC screening at age 45 years is likely to be cost effective.³⁰ Given the mounting evidence in favor of earlier age screening, in October 2020 the USPSTF published an updated draft guideline for CRC screening (see Table 2).¹²

Save the Next Generation: Screening for Those with a Family History of CRC or Advanced Adenoma

Individuals who have a first-degree relative (parent, sibling or child) with colorectal cancer or advanced adenomas are at higher risk to develop CRC and should undergo more aggressive screening beginning at a younger age. Advanced adenomas are defined as a polyp ≥ 10 mm in size or having high grade dysplasia or villous histology. Family history in a first-degree relative (FDR) increases CRC risk regardless of age at diagnosis of the affected relative, however risk is highest if the affected relative is under age 60. The United States Multisociety Task Force (USMSTF) currently recommends that these individuals should be screened at an earlier age (see Table 3).³¹

Screening saves lives, but when we treat a colon cancer or remove an advanced polyp, it is imperative that patients inform their FDR, especially their children to begin screening at an earlier age to ensure that we save the next generation.

Dietary/Lifestyle Modifications Can Decrease CRC Risk

When patients discover they have polyps on routine colonoscopy screening, they often ask “what can I do to prevent polyps and to decrease my chances of being diagnosed with colon cancer?” Defining CRC risk factors can help educate patients about approaches to prevent the disease. Aging, family history, and genetics are non-modifiable and beyond the patient’s control. In contrast, dietary and lifestyle modifications can be made and provide a tangible means by which patients can take charge of their health.

A recent review of eighty meta-analyses of studies evaluating CRC prevention found that red/processed meat consumption and frequent alcohol intake were associated with an increased risk of

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CRC. Red meats such as beef, pork, and lamb have long been implicated as potential contributors to CRC development.³² Red and processed meats contain high levels of sulfur which are metabolized by the gut microbiome resulting in the formation of hydrogen sulfide which can cause epithelial DNA damage, promote inflammation, and disrupt the colonic mucus layer.³³ There is a 12-21% increased risk of CRC with meat consumption that is dose dependent with 10-30% higher risk for each increment of 100g/day of total or red meat ingested. No significant effect was reported with animal fat or protein intake. Interestingly, there was a 20% reduction in rectal cancer risk for high versus low consumption of poultry. Alcohol intake was also associated with a significant dose-dependent increased risk of CRC. Even the lowest consumption (25 g/day, 1-2 drinks) increased CRC risk 8-10%, but heavy drinkers (>50 g/day, >4 drinks) had over 50% higher risk. The relative risk was greater for rectal cancer versus colon

cancer. For similar intake, men had an overall greater risk of CRC. The review also demonstrated that aspirin and non-steroidal anti-inflammatory drugs, magnesium, and folate are associated with a decreased incidence of CRC. High consumption of fruit and vegetables, fiber, and dairy products are also protective.³²

Lifestyle modifications can also impact CRC risk. Similar to alcohol intake, tobacco also has a dose dependent increased risk of CRC, with highest risks among long-standing smokers or those with high amounts of tobacco consumption. CRC subtypes in smokers demonstrate increased microsatellite instability and cancers developing via serrated pathways.³⁴ Other factors associated with a higher risk of CRC include obesity, a sedentary lifestyle, and Type 2 diabetes.³ Encouraging patients to limit alcohol intake, quit smoking, increase physical activity, and avoid excess weight gain are all positive steps patients can take towards decreasing their chances of CRC development.

Table 3. USMSTF Screening Recommendations for Patients with a First Degree Relative with CRC or Advanced Adenoma

Criteria	Recommendation
CRC or advanced adenoma in a single first degree relative age < 60 years OR CRC or advanced adenoma in two first degree relatives at any age	Colonoscopy every 5 years beginning age 40 or 10 years prior to age of first degree relative diagnosis, whichever is earlier
CRC or advanced adenoma in single first degree relative diagnosed age ≥60 years	Begin screening at age 40 with any test; tests and intervals per average-risk screening recommendations

Table 4. CRC Screening Resources

- The Colorectal Cancer Alliance Online Patient Navigation Tool is a short survey that patients can complete on their own or with a provider to determine which screening option is best based on personal risk factors. This short, three section quiz inquires about any current symptoms, prior screening tests and results, family history of CRC/hereditary CRC syndrome, sex, and race. When completed, it offers screening option(s) with links describing each test, advantages/disadvantages, insurance coverage, and basic facts.³⁵ Visit the following website for more information: quiz.getscreened.org/
- The ACS Conversation Cards are single page informational sheets covering the most widely used CRC screening tests (FIT, multi-target stool DNA testing, colonoscopy, flexible sigmoidoscopy, and CT colonography) to help patients select the option that is right for them. Each easy to read “card” has helpful graphics with succinct, useful information about how each test is done, how often, how much it will cost, if time off of work is required, and what happens if the chosen test is positive.³⁶ To view these sheets, please visit the following website: www.cancer.org/content/dam/cancer-org/cancer-control/en/booklets-flyers/conversation-cards-colorectal-cancer-screening.pdf

Practical Resources to Assist Patients with Screening Options

Discussions about CRC screening options take time. Navigating patients to the right test based on personal/family history or risks can be complicated. Two useful tools to assist you or your colleagues are the Colorectal Cancer Alliance Online Patient Navigation Tool and the ACS Conversation Cards (see Table 4).

SUMMARY

Colorectal cancer remains one of the leading cancer diagnoses and causes of death in the United States.³ The 80% in Every Community campaign encourages all of us to promote CRC screening in the “communities” we belong to.¹³ Communities are more than our clinic or endoscopy patients. Communities are more than geographic locations such as cities, counties, or states. Especially during March, National Colorectal Cancer Awareness Month, we are challenged to broaden our definition of community to consider family, workplaces, fellowship groups, social clubs, school organizations, and sports leagues within our community umbrella. By sharing information about the benefits of CRC screening, together we can prevent colon cancer, and together we can save lives. ■

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