

Age to Initiate Colorectal Cancer Screening in Average Risk Individuals: Evidence Brief, June 2019

Key Points

- *Colorectal cancer incidence and mortality are increasing in individuals under age 50.*
- *Simulation models suggest there may be benefit to screening average risk patients beginning at age 45, but it is unclear if this benefit outweighs the risks of screening*
- *Patients age 45-49 who express interest in screening should be engaged in shared-decision making to discuss the risks and benefits*
- *It is strongly recommended that all average risk patients 50 years and older should be screened for colon cancer*
- *Extra vigilance for symptoms and risk factors of colon cancer (including family history in people aged 45-49) is advised given increasing colorectal cancer rates in this group.*

Definition of Average Risk

This guidance applies to individuals at *average risk* for colorectal cancer. Patients *not* considered average risk include those with a personal or family history of colorectal cancer or adenomatous polyps, persons with inflammatory bowel disease, and those with symptoms that may be attributable to colorectal.

Background

Recently, the American Cancer Society (ACS) released their updated 2018 Colorectal Cancer (CRC) Screening Guidelines. These guidelines added the **qualified recommendation*** that screening for average risk patients start at 45 years of age regardless of race. Screening all adults aged 50 years and older, which was recommended by the 2016 United States Preventive Services Task Force (USPSTF, 2016), is a **strong recommendation**** in the new ACS guideline (Wolf 2018).

Recent data indicate that colorectal cancer rates are increasing in patients younger than 50 years of age.

- Colorectal cancer incidence rates in adults aged <50 years rose annually by 1.6% from 2000 to 2013 for an overall increase of 22%, driven primarily by an increase in tumors of the distal colon and rectum (Siegel 2017).
- The incidence of rectal cancer in individuals aged 20 to 49 years doubled between 1991 and 2014 (Wolf 2018)
- Colorectal cancer death rates decreased by 34% in individuals aged ≥ 50 years from 2000-2014 but increased by 13% in those aged <50 years (Siegel 2017).
- Of all colorectal cancer deaths from 2010-2014, 5.1% of patients were diagnosed at ages 45-49 compared to 7.6% for ages 50-54 (Wolf 2018).

**Qualified recommendation: There is clear evidence of benefit (or harm) but less certainty about the balance of benefit and harms or about patients' values and preferences which would lead to individual decisions*

***Strong recommendation: Benefits of intervention outweigh the undesirable effects and most patients would choose the intervention*

Evidence Summary

There have been randomized clinical trials demonstrating a mortality reduction associated with detection of colorectal cancer by guaiac-based stool testing (gFOBT) and flexible sigmoidoscopy, which included patients with age ranges from 45 to 80 years and 50 to 74 years, respectively (USPSTF, 2018). Evidence for other forms of screening, most notably colonoscopy, is limited to performance data and observational studies. However, declining incidence rates of colorectal cancer in screened populations have been primarily attributed to the efficacy of polypectomy (Pan, 2016).

Modeling studies have been used to compare different screening strategies. These modeling studies look at the balance of benefits (measured as life years gained, (LYGs)) and harms (measured as the number of colonoscopies required for a given screening strategy). Despite their usefulness, these models have limitations based on the assumptions they make and data they rely on.

Modeling done for the USPSTF 2016 recommendation found screening initiation at age 45 years rather than 50 years was estimated to yield 15 to 28 additional LYG per 1000 persons and require an additional 827 to 856 colonoscopies per 1000 persons. There were some discrepant findings among the three models (Knudson 2016). **In 2016, the USPSTF determined that the benefits did not outweigh the risks to begin general screening at age 45 (an updated review of this recommendation is in progress).**

ACS started with the models and systematic review done for the 2016 USPSTF recommendations. ACS then extended on this work by reviewing new studies, incorporating recent Surveillance, Epidemiology, and End Results (SEER) incidence data, and extending previous analyses and literature reviews to include outcomes by race and ethnic groups (Wolf 2018).

With this modeling, ACS found that colonoscopy screening every 10 years from age 45-75 years versus colonoscopy screening every 10 years from ages 50 to 75 years had 25 (6.2%) more LYGs and 810 (17%) more colonoscopies per 1000 adults. Additional gender and race-specific modeling supporting starting screening at age 45. For screening starting at age 40, the small increase in LYGs was thought to be outweighed by the burden of the additional colonoscopies needed (Wolf 2018).

Overall, the ACS guideline development group concluded that the potential benefit in life years gained, despite the potential harm from increased colonoscopies, warranted screening consideration for everyone 45-49 years of age (Wolf 2018).

Medical Community Response

Organization	Response
United States Preventive Services Task Force (January 2019)	Issued a final research plan for reviewing its recommendations. Research will include adults ≥ 40 years to determine the effectiveness of screening in adults younger than 50 years (USPSTF, 2019)
The U.S. Multisociety Task Force on Colorectal Cancer (American Gastroenterological Association, American College of Gastroenterology, and the American Society for Gastrointestinal Endoscopy) (June 2018)	Acknowledged that earlier screening may improve early detection and prevention but at this time the evidence is still very limited
American Academy of Family Physicians (June 2018)	Recommends population screening at age 50 but will review the evidence further
American Gastroenterological Association (June 2018)	Recommends to consider beginning routine screening at age 45 and encourages patients who are ≥ 45 years to have a shared-decision making conversation with their doctor
American Society of Colon and Rectal Surgeons (June 2018)	Recognizes the benefit of asymptomatic patients considering earlier screening

Having the Conversation with Your Patients

Below are some suggestions of ways to discuss this controversy with patients.

When to Screen

In recent years, the recommended screening age for average risk patient has been 50. The American Cancer Society now recommends that screening start at age 45. These recommendations are based on computer models and rising rates of colon cancer in persons under the age of 50. At this time, there is not widespread agreement on whether the age for screening should be lowered to 45; better studies would help us make a firm recommendation. I am here to answer your questions with the information we do know and discuss the benefits and risks.

Benefits

The benefit of screening at any age is that it can save your life through early detection and removal of cancer or polyps. Polyps are fleshy growths that sometimes turn into to cancer. The earlier you start screening, the more potential to catch these lesions.

Risks

Screening through colonoscopy has risks. The major risks of colonoscopy include major bleeding from sites where polyps are removed (~8 per 10,000 colonoscopies) and perforation (~4 per 10,000 colonoscopies) (Wolf 2018). If you start screening earlier with colonoscopy, you will have more colonoscopies over your lifetime, which will put you at increased risk of a complication. There are no complications with stool testing. However, if a stool test is positive (and there can be false positives), you will need a colonoscopy.

Cost

Some health insurance plans may not cover the cost of screening for colorectal cancer for patients under 50 years of age who are at average risk. You should check with your medical insurance company to determine what screening will cost you.

Reducing Your Risk

Colorectal cancer is increasingly linked to lifestyle factors. While screening is important, it is just as critical that we work together to address these factors so we can reduce your risk colorectal cancer. Lifestyle risk factors for colorectal cancer include cigarette smoking; excess body weight; physical inactivity, and poor dietary choices (including too much alcohol, red and processed meat, and not enough fruits and vegetables, fiber, and calcium).

Awareness

Given the data that colorectal cancer is increasing in younger individuals we must be more vigilant for signs and symptoms that could indicate a problem. I want to know if you develop blood in your stools, anemia, abdominal pain, or changes in bowel habits. However, it is also important to realize that early colon cancers and precancerous polyps do not commonly cause symptoms.

References

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American Gastroenterological Association Statement: https://gastro.org/press-release/american-gastroenterological-association-supports-new-recommendations-for-earlier-colorectal-cancer-screening?utm_source=twitter

American Society of Colon and Rectal Surgeons Statement: <https://www.fascrs.org/ascrs-response-american-cancer-societys-colonoscopy-guideline>

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<https://www.gastro.org/press-release/statement-from-the-u-s-multisociety-task-force-on-colorectal-cancer>

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