

2020 Update

NYC Recommendations to Reduce Morbidity and Mortality From Colorectal Cancer

Consider age 45 to begin screening individuals at average risk of colorectal cancer.

Screen individuals at average risk using the following options:

Colonoscopy every 10 years

— OR —

Stool-based testing at recommended intervals and all positive results must be followed up with a colonoscopy. Options include a fecal immunochemical test (FIT) annually, a high-sensitivity guaiac-based fecal occult blood test (HSgFOBT) annually, or a multi-target stool DNA test (FIT-DNA) every 3 years.

Individuals at familial or other increased risk may need to be screened before age 45. Consult a specialist for screening recommendations.

Recent years have seen increases in screening and advances in treatment for colorectal cancer (CRC), which have contributed to substantial reductions in mortality. However, colorectal cancer remains the second leading cause of cancer deaths in New York City (NYC).¹ When found early, colorectal cancer has a five-year survival rate of 90%. Once it has metastasized to distant organs, five-year survival is only 14%.² Screening rates have improved greatly since New York City's first screening recommendations in 2003, but disparities remain among neighborhoods, age groups, and people with limited access to care.³

Screening for CRC has the potential both to detect cancer early, when it is easier to treat, and to prevent cancer by detecting and removing precancerous polyps. With this new update, the NYC Health Department recommends that health care providers consider offering screening beginning at age 45, earlier than the previous recommended starting

age of 50, for people at average risk of CRC in recognition of increased incidence in younger adults. Recommended screening options for people at average risk include colonoscopy every 10 years or stool-based testing every one or three years, depending on the specific test.

Colonoscopy visualizes the entire colon and rectum and enables detection and removal of precancerous polyps as well as identification of carcinomas during a single examination. It requires bowel preparation and typically involves sedation during the procedure. Colonoscopy is recommended once every 10 years for individuals at average risk of CRC.⁴

Stool-based tests detect potential signs of cancer in the stool. Any patient with a positive stool-based test must be referred promptly for a colonoscopy. **Fecal immunochemical testing (FIT)** tests for blood and is specific to human hemoglobin.⁵ FIT requires one to two samples from a single bowel movement and does not require advance preparation. It must be

repeated annually to be fully effective. FIT is fairly specific to bleeding from the lower gastrointestinal tract, since hemoglobin is degraded as it moves through the digestive system.⁶

A **high-sensitivity guaiac-based fecal occult blood test (HSgFOBT)** detects blood through a peroxidase reaction.⁶ It is not specific to human hemoglobin. HSgFOBT requires samples from three consecutive bowel movements and must be repeated annually. Patients should be advised to avoid ingesting more than 250 milligrams (mg) of vitamin C daily for three days before the test. The manufacturer also recommends avoiding red meat for three days; however, it is not clear whether this influences positivity rates.⁷

A **multi-target stool DNA (FIT-DNA)** test detects both human hemoglobin and certain DNA mutations found in cancers and precancerous lesions. The result is reported as a single positive or negative, incorporating both the FIT and DNA results using an analytic algorithm.⁸ This test requires collecting a single bowel movement and must be repeated once every 3 years.

Other screening options are used less often in NYC. **Computed tomographic colonography (CTC)**, also called virtual colonoscopy, examines the entire colon and rectum through minimally invasive imaging.⁹ Bowel preparation is also required. Colonoscopy is often the next step for abnormal findings; specific recommendations for follow-up based on polyp size and number currently vary.^{10,11} A five-year interval is recommended after a negative CTC.

Flexible sigmoidoscopy is a visual examination of the rectum and distal colon. It is typically recommended every 5 years. Flexible sigmoidoscopy requires less intensive bowel preparation than colonoscopy and can be done without sedation. USPSTF also offers an alternative screening approach of every 10 years along with annual FIT.⁴ Abnormal findings often require a follow-up colonoscopy to remove or biopsy lesions.

FREQUENTLY ASKED QUESTIONS ABOUT CRC SCREENING AND PREVENTION

Are the different screening tests equivalent?

The general consensus among expert guidelines is that the best test is the one the patient will do. Both colonoscopy and stool-based tests can reduce deaths from CRC. Because of differences in study design, current evidence for colonoscopy and stool-based screening programs cannot be directly compared. Randomized controlled trials (RCTs) to directly compare long-term outcomes from colonoscopy and stool-based screening are currently in progress.

Support for **colonoscopy** in CRC screening comes from observational studies of colonoscopy demonstrating reduced CRC incidence and mortality.^{10,12} Colonoscopy effectiveness for screening is indirectly supported by RCTs of flexible sigmoidoscopy, which examines a smaller portion of the colon.¹² Colonoscopy by a skilled operator is highly sensitive for both cancers and precancerous adenomas, and removal of precancerous lesions during the procedure is associated with reduced incidence of CRC later on. However, flat lesions can be harder to detect visually than polypoid ones, and colonoscopy appears to have lower sensitivity for proximal than distal

lesions. Colonoscopy carries a small risk of bleeding or bowel perforation and a potential risk of complications from anesthesia.

The use of **stool-based tests** is supported by RCTs demonstrating reductions in CRC deaths using a version of the guaiac-based fecal occult blood test (gFOBT) that was less sensitive than newer options.¹² Some studies also demonstrated reduced CRC incidence.^{13,14} When one-time tests are compared to colonoscopy, HSgFOBT has sensitivity in the range of 62% to 79% and specificity of 87% to 96%.⁴ FIT has sensitivity for CRC in the range of 73% to 88% and specificity of about 90% to 96%; test parameters vary by manufacturer.¹⁵ However, ongoing screening at recommended intervals enhances these tests' effectiveness.⁶ Stool-based tests are considerably less sensitive for advanced adenomas than for CRC, likely because adenomas are less likely to bleed. Based on one direct comparison to FIT alone, FIT-DNA has higher single-test sensitivity but lower specificity for CRC.^{12,16} It also showed higher single-test sensitivity for advanced adenomas than FIT.

Support for **CTC** comes from studies of the test characteristics, such as detection of CRC and adenomas compared to colonoscopy. CTC is less effective than colonoscopy at identifying polyps less than 1 centimeter (cm) as well as high-risk flat and serrated lesions.^{10,17} CTC may identify incidental extra-colonic findings, which may require additional workup.¹²

Flexible sigmoidoscopy carries a smaller risk of bleeding and perforation than colonoscopy but cannot detect lesions proximal to the splenic flexure.¹²

Will patients accept the recommended test options?

The Health Department recognizes that some

patients may have a strong preference for one type of test over the other. The Health Department recommends that, when resources permit, you offer a choice between colonoscopy and stool-based testing for patients at average risk of CRC. Provide education about the benefits and risks of each type of test, the required screening intervals, and what follow-up is necessary if a test is positive. Use shared decision-making to encourage each person to make a choice that matches their own priorities for screening and that has a screening interval they can realistically follow.

Why is the NYC Health Department recommending that providers consider having patients at average risk of CRC begin screening at age 45?

In recent years, evidence has emerged that CRC has been increasing in people under age 50 in the United States, leading to consideration of an earlier screening age.¹⁸ The increase in incidence includes both early- and late-stage disease, which suggests that this is not simply a result of increased surveillance.¹⁹

Here in NYC, CRC incidence for our overall population under 50 has also increased in recent decades, and separate analyses show increases for both Black and White New Yorkers.^{20,21} Historical data are limited for other racial/ethnic groups. However, CRC, including CRC at ages younger than 50, can occur in New Yorkers of any background.

As a result of incidence trends, in 2018, the American Cancer Society (ACS) updated their screening guidelines to recommend screening begin at age 45.²² This was based in part on computer modeling studies incorporating recent trends in early incidence, which found that starting at age 45 could increase the

number of life-years gained at a reasonable cost of increased screening tests. The ACS designated the new recommendation of screening at age 45 as “qualified,” while the recommendation for screening at age 50 is “strong,” because of differences in the type and level of evidence.

More recently, a study of cancer registry data showed a steep increase in incidence at age 50 compared to age 49, consistent with many people beginning screening at age 50.²³ The study found that 92.9% of cancers were already beyond in situ and 53.6% were regional or distant.

As of early 2020, the United States Preventive Services Task Force is currently reassessing their CRC screening guidelines, including considerations about starting age. In the meantime, the Health Department is calling attention to earlier-onset CRC and encouraging health care providers to discuss earlier screening with their patients, beginning at 45 for those at average risk.

Will insurance cover screening before age 50?

The Affordable Care Act (ACA) requires most insurers to cover colon cancer screening for adults age 50 to 75 (some exceptions are discussed below).²⁴ Insurers can choose to expand this age range, and some insurance plans do cover screening for average-risk patients starting at age 45, although New York Medicaid does not.

Insurers, including Medicaid, will typically cover screening before age 50 for people at elevated risk, which includes many people with a family history of CRC or precancerous polyps, although the ACA rule about cost-sharing does not apply in these cases. Take a careful history for

risk factors and document any information in support of earlier screening. Let patients know that they should check with their insurers to avoid unexpected costs.

For patients ages 45 to 49 who would have to pay out-of-pocket, starting with a stool-based test may be an affordable option. If a follow-up colonoscopy is needed, it can often be covered as a diagnostic test.

Will insurance cover both colonoscopy and stool-based tests?

Both stool-based tests and colonoscopy are generally covered as primary screening tests with the same age ranges as described above, and with no copay or coinsurance. Medicare is an exception: If a colonoscopy finds polyps or cancer, it is treated as “diagnostic” and there may be a copay or coinsurance.²⁵

If a stool-based test is positive, a follow-up colonoscopy will also generally be covered. It may be covered without a copay as a screening test, or it may be treated as diagnostic, which can mean a copay or coinsurance charge. Again, let your patients know that they should check with their insurer (or have someone in your office help them inquire) to avoid unexpected costs.

What is the upper age limit for CRC screening?

Screening is strongly encouraged up to age 75. Screening can be individualized between age 76 and 85, depending on health status, prior screening status, and life expectancy.^{4,10,22} Screening after age 85 is not generally recommended due to an unfavorable risk-benefit balance.^{4,10,22}

Which of my patients will benefit the most from CRC screening?

Both incidence and mortality for CRC increase with age. Although there are differences among demographic subgroups, no group in NYC is risk-free, and all eligible adults should be offered screening. When discussing screening options consider individual and family history, your patient's health, and their own values about the risks, benefits, and burdens of different screening modalities.

Screening at younger ages may be particularly relevant for Black New Yorkers. At ages 50 to 54, incidence for Black New Yorkers is higher than for any other racial or ethnic group and comparable to the overall rates for ages 55 to 59.²¹

Which factors raise a patient's risk of early-onset CRC?

Most cases of CRC are sporadic. However, guidelines identify increased risk in people with a family history of CRC or advanced adenoma, including sessile serrated polyps, in first-degree relatives.^{10,11} A positive family history can impact recommendations for screening age, interval and test choice, with many people needing to start at age 40 or even earlier. Consult relevant guidelines or refer to a specialist for recommendations.

Other major risk factors for early CRC include familial adenomatous polyposis, Lynch syndrome (hereditary nonpolyposis colorectal cancer), other familial cancer syndromes, or a personal history of inflammatory bowel disease.⁴ These individuals may need specialty consultation to determine screening recommendations.

How do I keep track of patients who need screening?

A successful screening program is not a single

test in isolation but includes repeated tests at the recommended intervals with appropriate follow-up for positive findings. Strategies to increase adherence to screening include clinician and patient reminder systems; electronic health record alerts; educational media such as videos, letters, and brochures to encourage regular screening; and taking steps to reduce patient barriers to screening.²⁶

What should I tell my patients about how to reduce their risk of CRC?

First, recommend screening in the appropriate age range and at recommended intervals. Whenever possible, work with each patient to select an option that they feel comfortable with and can continue over many years. You can also help them address risk factors that have been associated with CRC. These include cigarette smoking, obesity, physical inactivity, high alcohol consumption, and diets that are high in processed meats.²⁷

What resources are available to help educate my patients about CRC screening options?

Patient education materials are available at the Health Department website. Visit nyc.gov/health and search for **colon cancer**. Your patients can learn how to get ready for a colonoscopy by reading the graphic novella *Preparing for a Colonoscopy: Sandra's Story*. Sandra prepares for a colonoscopy by following instructions for bowel preparation, consuming a liquid diet and arranging for someone to pick her up after the procedure. The graphic novella is available in English and 14 other languages. Visit nyc.gov/health and search for **Sandra's story**.

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