



City Health Information

April 2009

The New York City Department of Health and Mental Hygiene

Vol. 28(suppl 2):1-4

REVISED

PREVENTING COLORECTAL CANCER: COLONOSCOPY SCREENING EVERY 10 YEARS

- Men and women 50 years of age and older should undergo colonoscopy every 10 years.
- Annual high-sensitivity fecal occult blood testing (FOBT) is an alternative for those unwilling or unable to undergo colonoscopy.
- People at increased risk for colorectal cancer should begin screening with colonoscopy at age 40 or earlier.

Colorectal cancer causes more cancer deaths among nonsmokers than any other form of cancer. It is estimated that over 5% of New Yorkers age 50 and over have precancerous adenomatous colon polyps and have not had colon cancer screening.^{1,2} Without early detection and treatment, an estimated 13,000 to 19,000 of these New Yorkers will develop colorectal cancer in the next 20 years.³⁻⁵ Screening methods able to detect early colorectal cancer include colonoscopy, fecal occult blood testing (FOBT), fecal immunochemical testing (FIT), fecal DNA testing, computed tomographic colonography (CTC, or virtual colonoscopy), flexible sigmoidoscopy, and double-contrast barium enema (DCBE).⁶

The New York City Health Department recommends colonoscopy every 10 years for men and women age 50 years and over. Annual high-sensitivity FOBT with 3 consecutive stool samples is an alternative for patients who are unable or unwilling to undergo colonoscopy.⁶ People at increased risk for colorectal cancer should begin screening with colonoscopy at age 40 or earlier. Most importantly, any appropriately administered screening test is better than no screening at all.

Colonoscopy is the most sensitive and specific of these screening methods; it visualizes the entire colon and rectum, and enables the physician to detect and remove precancerous polyps and identify early carcinomas during a single examination. Although colonoscopy is relatively expensive, it remains cost-effective^{7,8} because it is highly sensitive and may be performed as infrequently as every 10 years.

Fecal occult blood testing (FOBT) also screens the entire colon and rectum. Screening with high-sensitivity FOBT is an alternative for patients at average risk (no personal or family history of colon cancer), or for those unwilling or unable to undergo colonoscopy. This test must be performed annually using consecutive stool samples. Patients should be instructed to avoid taking more than 250 mg of vitamin C or eating red meat for 3 days before testing.⁶ Any patient with a positive FOBT must be referred for a colonoscopy. Annual **fecal immunochemical testing (FIT)** can be another screening option for average-risk adults aged 50 and older.⁶ FIT detects only human hemoglobin; dietary restrictions are therefore not necessary. The optimal number of stool samples for FIT has not been established, but 2 samples may be superior to 1.⁶ **Fecal DNA** is a new stool test that can detect precancers and cancer DNA mutations. Fecal DNA testing is costly, is not covered by all insurance carriers, and the optimum interval between tests has not been determined. Patients with a positive FIT or fecal DNA test must also be referred for colonoscopy.⁶

Computed tomographic colonography (CTC), also referred to as virtual colonoscopy, examines the entire colon and rectum, detecting both polyps and colorectal cancers through minimally invasive imaging. While no sedation is required for CTC, gaseous distention and colonic preparation are necessary, as they would be for colonoscopy.⁶ Optimal referral guidelines are being evaluated, but evidence suggests that a polyp size of ≥ 6 mm may be used as the threshold for automatic referral for colonoscopy.⁶ If the colonoscopy can be performed the same day as the CTC, there is no need to repeat the bowel preparation.⁶ Although the optimal interval is being studied for CTC screening, a repeat exam every 5 years may be reasonable for patients with a previous clear CTC or with polyps smaller than 6 mm.⁶ Other issues requiring further study include exposure to radiation and the potential for identifying noncolonic cancers. Additionally, because CTC is a comparatively new procedure, insurance coverage is uneven.

Flexible sigmoidoscopy can examine the rectum and distal colon but is unable to examine the proximal colon. Patients who undergo this procedure often require a second procedure to remove or biopsy lesions. Flexible sigmoidoscopy can identify 70% of patients with advanced neoplasia, assuming that all patients with an adenoma in the distal colon subsequently undergo complete colonoscopy.⁹

Double-contrast barium enema (DCBE) evaluates the entire colon. It requires colonic preparation and diet restriction similar to that of colonoscopy. Patients with positive findings must be referred for a colonoscopy. DCBE is less sensitive in detecting lesions than colonoscopy.⁶

Clinician recommendation remains one of the most powerful determinants of whether a patient undergoes colorectal cancer screening. Since 2003, screening has increased 48%, and 62% of New Yorkers age 50 and over are now getting screened.² However, approximately 1,400 New Yorkers still die each year from colorectal cancer.¹⁰ Physicians can prevent most of these deaths.⁵

Questions Frequently Asked About Colorectal Cancer Screening and Prevention

Does colorectal cancer screening reduce cancer mortality?

YES. In addition to the role colorectal cancer screening plays in detecting early-stage cancer, studies show that the removal of premalignant polyps reduces both cancer

incidence and mortality. Moreover, colorectal cancer screening is as cost-effective as most other widely used cancer screening tests.¹¹ Widespread use of the New York City (NYC) Health Department guidelines could prevent more than 80% of colorectal cancer cases in NYC,⁵ or more than 1,000 deaths each year.

Why is the NYC Health Department recommending colonoscopy as the preferred colorectal cancer screening exam?

Approximately 25% of men and 15% of women age 50 and over will have adenomatous polyps detected by colonoscopy; a proportion of these polyps have the potential to become cancerous.^{11,12} Colonoscopy is not only the best endoscopic procedure for detecting polyps, it also allows for immediate biopsy and removal of such lesions. For people at average risk of colorectal cancer, a normal colonoscopy only needs to be repeated every 10 years.¹³

Colonoscopy, while relatively expensive, is cost-effective.⁷ It carries a small risk of bleeding, infection, or perforation (risk of perforation is approximately 1 in 1,000).¹⁴ When complications do occur, they are usually managed without the need for surgery. In contrast to the small risk of complications from colonoscopy, the cumulative lifetime risk of colorectal cancer is approximately 6%.⁷

Colonoscopy can cause mild discomfort. In nearly all cases, however, this is prevented with adequate sedation.⁶

Won't most of my patients be too embarrassed or afraid to undergo colorectal cancer screening?

NO. The majority of your patients will undergo colorectal cancer screening if you recommend it.¹⁵ Educate your patients about the benefits and risks of screening. Older patients may need only 1 or 2 complete colorectal exams in their lifetime. Moreover, clinicians need to undergo colorectal cancer screening themselves, if indicated, and should communicate their own decision to be screened to their patients.

Which of my patients will benefit the most from colorectal cancer screening?

At present, the standard of care is for men and women 50 years of age and older to undergo colorectal cancer screening.¹³ Higher colorectal cancer rates exist in people 65 years of age and older, males, and African

Call 311 to order patient education materials and forms for direct referral for colonoscopy from the NYC Health Department.

Americans, but there is no group in NYC that is free of risk.⁵ Factors such as family history, patient demand, the clinical condition of a patient, and available resources may influence a physician's decision on how to screen a patient for colorectal cancer. There is no consensus regarding the age at which colorectal cancer screening should be discontinued. However, clinicians should consider discontinuing screening in patients who have life-limiting comorbidities.⁶

What factors raise a patient's risk of early-onset colorectal cancer?

Patients at increased risk include those with a personal or family history of familial adenomatous polyposis, hereditary nonpolyposis colorectal cancer, or another hereditary cancer syndrome, as well as those with a history of inflammatory bowel disease, colon polyps, or prior colorectal cancer.⁷ However, only 20% of colorectal cancer patients report a family history of the disease or prior colorectal cancer.¹⁶

An expert task force recommends that patients with a family history of colorectal cancer or polyps should begin screening either at age 40 or 10 years before the age that their first-degree relative was diagnosed with colorectal cancer.⁶ African American males have higher rates of death from colorectal cancer; some physicians recommend that screening begin at age 45.¹⁷ In some cases, colon polyps and early cancers can cause symptoms. Patients with fatigue, anemia, gastrointestinal symptoms, rectal bleeding, or changes in weight or bowel habits need to undergo a diagnostic evaluation.

Is it sufficient to screen for colorectal cancer by only performing an in-office FOBT during a physical examination?

NO. To date, evidence indicates that in-office FOBT performed during a physical examination is not very sensitive. Multiple-slide, take-home, high-sensitivity FOBT testing is a better alternative screening method.⁶

How do I keep track of patients who need screening?

Simple office tools can help remind you to discuss colon cancer screening with your eligible patients. File stickers and an adult preventive care flow sheet are available on the Health Department Web site. A Health Department publication explaining colon screening tests for patients (Health Bulletin, see **Resources**) is available in multiple languages. You or your office

nurse/administrator can use this publication to help explain what a colonoscopy procedure is, and possible alternative tests. You can obtain a form to help you identify patients appropriate for direct referral for a colonoscopy procedure by calling 311. Patients meeting the criteria on this direct referral form will not need a preliminary evaluation by a gastroenterologist, saving them an additional doctor visit.

Physicians referring directly for colonoscopy should prescribe colon preparation medication, and they, or someone else in their office, should explain the bowel preparation procedure. The direct referral form briefly discusses bowel prep medication options. In addition, the Primary Care Information Project provides electronic health records software that can tell you if patients are up to date with recommended preventive services. Visit www.nyc.gov/pcip to find out how to enroll.

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

Modifiable risk factors with the strongest associations to colorectal cancer are obesity, physical inactivity, and tobacco use.¹⁸ A typical Western diet (refined sugar and flour, high fat from red meat, and low fiber) and high alcohol consumption may also increase colorectal cancer risk.⁷

It could be argued that the most powerful risk factor for colorectal cancer death in NYC is to be under the care of a physician who does not recommend colon cancer screening.

What actions are being taken by the Health Department to inform the public about the advantages of undergoing colorectal cancer screening?

The Health Department is working with a broad coalition of organizations to promote colorectal cancer screening. A 2003 Health Department study found sufficient capacity to accommodate increased demand for screening colonoscopy.¹⁹

In addition to community education and outreach, the Health Department has successfully implemented hospital-based programs using patient navigation to facilitate colonoscopy and help ensure that those referred are successfully screened. Patients can also call 311 for referrals to the NYC Health and Hospitals Corporation for colonoscopy even if they are uninsured. ♦

References

1. Tomeo CA, Colditz GA, Willett WC, et al. Harvard report on cancer prevention. Volume 3: Prevention of colon cancer in the United States. *Cancer Causes Control*. 1999;10(3):167-180.
2. New York City Department of Health and Mental Hygiene (DOHMH). *Community Health Survey 2007*. Unpublished data.
3. Winawer SJ, Zauber AG, Ho MN, et al. Prevention of colorectal cancer by colonoscopic polypectomy. The National Polyp Study Workgroup. *N Engl J Med*. 1993;329(27):1977-1981.
4. Stryker SJ, Wolff BG, Culp CE, et al. Natural history of untreated colonic polyps. *Gastroenterology*. 1987;93(5):1009-1013.
5. Ries LAG, Melbert D, Krapcho M, et al, eds. SEER Cancer Statistics Review, 1975-2005. [SEER Web site]. 2008. http://seer.cancer.gov/csr/1975_2005/. Accessed January 22, 2009. Figures estimated from NYC DOHMH Community Health Survey Data, 2006.
6. Levin B, Lieberman D, McFarland B, et al. Screening and surveillance for the early detection of colorectal cancer and adenomatous polyps, 2008: a joint guideline from the American Cancer Society, the US Multi-Society Task Force on Colorectal Cancer, and the American College of Radiology. *CA Cancer J Clin*. 2008;58(3):130-160.
7. Levin B, Smith RA, Feldman GE, et al. Promoting early detection tests for colorectal carcinoma and adenomatous polyps – a framework for action: the strategic plan of the National Colorectal Cancer Roundtable. *Cancer*. 2002;95(8):1618-1628. Erratum in: *Cancer*. 2002;95(12):2580.
8. Sonnenberg A, Delco F, Inadomi JM. Cost-effectiveness of colonoscopy in screening for colorectal cancer. *Ann Intern Med*. 2000;133(8):573-584.
9. Lieberman DA, Weiss DG. One-time screening for colorectal cancer with combined fecal-occult blood testing and examination of the distal colon. *N Engl J Med*. 2001;345(8):555-560.
10. New York City Department of Health and Mental Hygiene. Bureau of Vital Statistics. *Summary of Vital Statistics 2007 - The City of New York*. www.nyc.gov/html/doh/downloads/pdf/vs/2007sum.pdf. Accessed January 22, 2009.
11. Frazier AL, Colditz GA, Fuchs CS, Kuntz KM. Cost-effectiveness of screening for colorectal cancer in the general population. *JAMA*. 2000;284(15):1954-1961.
12. Rex DK, Johnson DA, Anderson JC, Schoenfeld PS, Burke CA, Inadomi JM and the American College of Gastroenterology. American College of Gastroenterology guidelines for colorectal cancer screening 2008. *Am J Gastroenterol*. 2009;104(3):739-750.
13. US Preventive Services Task Force. Screening for colorectal cancer: recommendations and rationale. *Ann Intern Med*. 2002;137(2):129-137.
14. Tran DQ, Rosen L, Kim R, Riether RD, Stasik JJ, Khubchandani IT. Actual colonoscopy: what are the risks of perforation? *Am Surg*. 2001;67(9):845-847.
15. Leard LE, Savides TJ, Ganiats TG. Patient preferences for colorectal cancer screening. *J Fam Pract*. 1997;45(3):211-218.
16. Nelson RL, Persky V, Turyk M. Determination of factors responsible for the declining incidence of colorectal cancer. *Dis Colon Rectum*. 1999;42(6):741-752.
17. Agrawal S, Bhupinderjit A, Bhutani MS, and the Committee of Minority Affairs and Cultural Diversity, American College of Gastroenterology. Colorectal cancer in African Americans. *Am J Gastroenterol*. 2005;100(3):515-523. Erratum in: *Am J Gastroenterol*. 2005;100(6):1432.
18. Le Marchand L, Wilkens L, Kolonel L, Hankin J, Lyu L. Associations of sedentary lifestyle, obesity, smoking, alcohol use, and diabetes with the risk of colorectal cancer. *Cancer Res*. 1997;57(21):4787-4794.
19. Leng JCF, Thorpe LE, Feldman GE, Thomas PA, Frieden TR. The volume and capacity of colonoscopy procedures performed at New York City hospitals in 2002. *Prev Chronic Dis*. 2005;2(1):1-7.

RESOURCES

National Cancer Institute 1-800-4CANCER www.cancer.gov

American Cancer Society 1-800-ACS-2345 www.cancer.org

National Colorectal Cancer Research Alliance

1-800-872-3000 www.nccra.org

New York City Department of Health and Mental Hygiene

NYC DOHMH Health Bulletin #60, Get Checked! Available at:

www.nyc.gov/html/doh/downloads/pdf/public/dohmhnews7-05.pdf or call 311 and ask for Colonoscopy.

RECEIVE CHI BY E-MAIL Each time **City Health Information** is published, you will receive a link to the issue in PDF format. To subscribe, visit www.nyc.gov/html/doh/html/chi/chi.shtml.

DOHMH JOB OPENINGS: We seek doctors, nurses, administrators, social workers, and other public health professionals. Visit www.nyc.gov/health/careers to view openings.



City Health Information

NYC
Health

April 2009 The New York City Department of Health and Mental Hygiene Vol. 28(suppl 2):1-4

PRST STD
U.S. POSTAGE
PAID
NEW YORK, N.Y.
PERMIT NO. 6174