

ACG Clinical Guideline: Colorectal Cancer Screening

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Abstract

This document is the first update of the American College of Gastroenterology (ACG) colorectal cancer (CRC) screening recommendations since 2000. The CRC screening tests are now grouped into cancer prevention tests and cancer detection tests. Colonoscopy every 10 years, beginning at age 50, remains the preferred CRC screening strategy. It is recognized that colonoscopy is not available in every clinical setting because of economic limitations. It is also realized that not all eligible persons are willing to undergo colonoscopy for screening purposes. In these cases, patients should be offered an alternative CRC prevention test (flexible sigmoidoscopy every 5–10 years, or a computed tomography (CT) colonography every 5 years) or a cancer detection test (fecal immunochemical test for blood, FIT).

Introduction

The members of the writing committee carried out a systematic literature review and developed the updated guideline recommendation document. Only peer-reviewed English language articles were included. The criteria used for evaluation of studies and assessment of the category of evidence and strength of recommendation are shown in **Table 1** (1). These guidelines have also been reviewed and approved by the Practice Parameters Committee of the American College of Gastroenterology (ACG) and by the ACG Board of Trustees.

Grade of recommendation/ description	Benefit vs. risk and burdens	Methodological quality of supporting evidence	Implications
1A/Strong recommendation, high-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs without important limitations or overwhelming evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation

Table 1. Grading recommendations continued			
Grade of recommendation/ description	Benefit vs. risk and burdens	Methodological quality of supporting evidence	Implications
1B/Strong recommendation, moderate quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	RCTs with important limitations (inconsistent results, methodological flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Strong recommendation, can apply to most patients in most circumstances without reservation
1C/Strong recommendation, low-quality or very low-quality evidence	Benefits clearly outweigh risk and burdens, or vice versa	Observational studies or case series	Strong recommendation but may change when higher quality evidence becomes available
2A/Weak recommendation, high-quality evidence	Benefits closely balanced with risks and burden	RCTs without important limitations or overwhelming evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2B/Weak recommendation, moderate-quality evidence	Benefits closely balanced with risks and burden	RCTs with important limitations (inconsistent results, methodological flaws, indirect, or imprecise) or exceptionally strong evidence from observational studies	Weak recommendation, best action may differ depending on circumstances or patients' or societal values
2C/Weak recommendation, low-quality or very low-quality evidence	Uncertainty in the estimates of benefits, risks, and burden; benefits, risk, and burden may be closely balanced	Observational studies or case series	Very weak recommendations; other alternatives may be equally reasonable
RCT, randomized controlled trial. Source: Guyatt <i>et al.</i> (1).			

The ACG is an organization of more than 10,000 clinical gastroenterologists and related health professionals. In 2000, the ACG issued colorectal cancer (CRC) screening recommendations that endorsed colonoscopy every 10 years, beginning at age 50, as the preferred CRC screening strategy (2). The ACG was the first organization to recommend colonoscopy as the preferred strategy for the CRC screening; and the American Society for Gastrointestinal Endoscopy (3) and National Comprehensive Cancer Network (4) subsequently endorsed this recommendation.

Other guidelines for CRC screening often utilize an approach called the “menu of options.” In this approach, multiple options for screening are presented which differ with regard to their effectiveness, risk, and degree of invasiveness (and, therefore, potentially their acceptability to patients). The menu-of-options approach was first formalized by the “GI consortium” in May 1997 (5), endorsed by the American Cancer Society in 1997 (6), revised by the US Multisociety Task Force in 2003 (7) , and revised by a joint committee of the US Multisociety Task Force, the American Cancer Society, and the American College of Radiology in 2008 (8). The ACG participated in and endorsed the menu-of-options approach in 1997, 2003, and 2008. The ACG continues to endorse the menu-of-options approach as appropriate to CRC screening. Publication of this guideline does not rescind the ACG’s endorsement of the joint guideline (8). New recommendations, which differ from the earlier ACG guideline, are highlighted in **Table 2**. The rationale for a separate ACG screening guideline is discussed below.

Table 2. Changes in this guideline from the 2000 ACG recommendations for screening (see reference 2)
1. Screening tests are divided into cancer prevention and cancer detection tests. Cancer prevention tests are preferred over detection tests.
2. Screening is recommended in African Americans beginning at age 45 years.
3. CT colonography every 5 years replaces double contrast barium enema as the radiographic screening alternative, when patients decline colonoscopy.
4. FIT replaces older guaiac-based fecal occult blood testing. FIT is the preferred cancer detection test.
5. Annual Hemoccult Sensa and fecal DNA testing every 3 years are alternative cancer detection tests.
6. A family history of only small tubular adenomas in first-degree relatives is not considered to increase the risk of CRC.
7. Individuals with a single first-degree relative with CRC or advanced adenomas diagnosed at age ≥ 60 years can be screened like average-risk persons.
ACG, American College of Gastroenterology; CRC, colorectal cancer; CT, computed tomography; FIT, fecal immunochemical test.

Table 3. CRC screening recommendations
Preferred CRC screening recommendations
<ul style="list-style-type: none"> • Cancer prevention tests should be offered first. The preferred CRC prevention test is colonoscopy every 10 years, beginning at age 50. (Grade 1 B) Screening should begin at age 45 years in African Americans (Grade 2 C)
<ul style="list-style-type: none"> • Cancer detection test. This test should be offered to patients who decline colonoscopy or another cancer prevention test. The preferred cancer detection test is annual FIT for blood (Grade 1 B)
Alternative CRC prevention tests
<ul style="list-style-type: none"> • Flexible sigmoidoscopy every 5–10 years (Grade 2 B)
<ul style="list-style-type: none"> • CT colonography every 5 years (Grade 1 C)
Alternative cancer detection tests
<ul style="list-style-type: none"> • Annual Hemoccult Sensa (Grade 1 B)
<ul style="list-style-type: none"> • Fecal DNA testing every 3 years (Grade 2 B)
Recommendations for screening when family history is positive but evaluation for HNPCC considered not indicated
<ul style="list-style-type: none"> • Single first-degree relative with CRC or advanced adenoma diagnosed at age ≥ 60 years
Recommended screening: same as average risk (Grade 2 B)
<ul style="list-style-type: none"> • Single first-degree with CRC or advanced adenoma diagnosed at age < 60 years or two first-degree relatives with CRC or advanced adenomas.
Recommended screening: colonoscopy every 5 years beginning at age 40 years or 10 years younger than age at diagnosis of the youngest affected relative (Grade 2 B)
FAP
<ul style="list-style-type: none"> • Patients with classic FAP (> 100 adenomas) should be advised to pursue genetic counseling and genetic testing, if they have siblings or children who could potentially benefit from this testing (Grade 2 B)
<ul style="list-style-type: none"> • Patients with known FAP or who are at risk of FAP based on family history (and genetic testing has not been performed) should undergo annual flexible sigmoidoscopy or colonoscopy, as appropriate, until such time as colectomy is deemed by physician and patient as the best treatment (Grade 2 B)
<ul style="list-style-type: none"> • Patients with retained rectum after subtotal colectomy should undergo flexible sigmoidoscopy every 6–12 months (Grade 2 B)
<ul style="list-style-type: none"> • Patients with classic FAP, in whom genetic testing is negative, should undergo genetic testing for bi-allelic MYH mutations. Patients with 10–100 adenomas can be considered for genetic testing for attenuated FAP and if negative, MYH associated polyposis (Grade 2 C)

Table 3. CRC screening recommendations <i>continued</i>
HNPCC
<ul style="list-style-type: none"> • Patients who meet the Bethesda criteria should undergo microsatellite instability testing of their tumor or a family member’s tumor and/or tumor immunohistochemical staining for mismatch repair proteins (Grade 2 B)
<ul style="list-style-type: none"> • Patients with positive tests can be offered genetic testing. Those with positive genetic testing, or those at risk when genetic testing is unsuccessful in an affected proband, should undergo colonoscopy every 2 years beginning at age 20–25 years, until age 40 years, then annually thereafter (Grade 2 B)
CRC, colorectal cancer; CT, computed tomography, FAP, familial adenomatous polyposis; FIT, fecal immunochemical test; HNPCC, hereditary non-polyposis colorectal cancer.

Table 4. Key measures for improving the quality and cost-effectiveness of colonoscopy as a CRC screening test
<ul style="list-style-type: none"> • Bowel preparation should be given in split doses (half of the dose is given on the day of procedure).
<ul style="list-style-type: none"> • Cecal intubation should be documented by description of landmarks and photography.
<ul style="list-style-type: none"> • All colonoscopists should document adenoma detection rates.
<ul style="list-style-type: none"> • Withdrawal times should average at least 6 min in intact colons, in which no biopsies or polypectomies are performed; this has greatest relevance to colonoscopists with low adenoma detection rates.
<ul style="list-style-type: none"> • Polyps should be removed by effective techniques, including snaring (rather than forceps methods) for all polyps >5 mm in size.
<ul style="list-style-type: none"> • Piecemeal resection of large sessile lesions requires close follow-up.
<ul style="list-style-type: none"> • In patients with complete examinations and adequate preparation, recommended screening and surveillance intervals should be followed.
CRC, colorectal cancer.

Summary of Current Guideline Updates

Owing to its potential for a high level of effectiveness in CRC prevention and extensive study of outcomes associated with its use, quality colonoscopy every 10 years beginning at age 50 remains the preferred CRC screening strategy. Patients who decline colonoscopy, or for whom colonoscopy is unavailable, or not feasible should be offered one of the alternative CRC prevention tests (flexible sigmoidoscopy every 5–10 years or computed tomography, CT, colonography every 5 years) or the preferred CRC detection test (FIT). The CRC screening in average-risk persons should begin at age 50, except that in African Americans, screening should begin at age 45 years. A family history of polyps need not invoke earlier onset of screening or other adjustment in screening, unless there is convincing evidence that the polyps were advanced adenomas.