

## AGA Standards for Gastroenterologists for Performing and Interpreting Diagnostic Computed Tomography Colonography: 2011 Update

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### Executive Summary

Although multiple medical professional societies, governmental agencies, and third-party payers recommend colorectal cancer (CRC) screening for adults at average or increased risk for CRC, screening rates for these populations continue to lag behind those of other malignancies. There are multiple reasons why population-wide CRC screening compliance remains “low” (near 50%–55%), and chief among them is the inconvenient, invasive, and/or uncomfortable nature of commonly used screening tests such as fecal occult blood testing, flexible sigmoidoscopy, and colonoscopy. In response, CRC screening technologies are constantly being developed and evaluated.

One of the newer tests, computed tomographic (CT) colonography, is an attractive option for CRC screening because of its ability to visualize the colon in a noninvasive way and because it is also relatively simple for patients to undergo. Over the past decade, experience and clinical information surrounding CRC screening and adenoma detection with CT colonography have increased dramatically. Although CT colonography was largely developed and typically performed by radiology professionals, it can also be used by gastroenterologists. As the technology surrounding CT colonography evolves, it is important that gastroenterologists not only understand the multiple issues surrounding CT colonography, but also that those who wish to perform it be able to interpret it accurately.

To facilitate diffusion of knowledge pertaining to CT colonography, the American Gastroenterological Association (AGA) Institute’s Governing Board convened the CT Colonography Task Force to develop training standards for gastroenterologists for CT colonography. These standards, first published in 2007, were intended to outline the basic requirements that board-certified gastroenterologists should meet to be involved in and/or perform CT colonography.<sup>1</sup> All statements were based on the literature available at that time. Since the publication of the original standards, additional literature and regulatory decisions regarding multiple aspects of CT colonography, with implications for the performance of this diagnostic modality by gastroenterologists, have been published. This document is an update based on that new information.

### Indications/Contraindications

As the range of sensitivities that have been reported for CT colonography in the medical literature has become more uniform, the use of CT colonography in clinical practice has become less controversial. In a number of published studies that have evaluated the use of CT colonography, the sensitivity for detecting non-diminutive ( $\geq 6$  mm) lesions with CT colonography has approached that of colonoscopy. In the past several years, several multidisciplinary groups involved in CRC screening guideline development, including the AGA, have endorsed CT colonography for CRC screening.<sup>2</sup> According to these guidelines, CT colonography is an acceptable approach for CRC screening in average-risk, asymptomatic adults, in patients unwilling to undergo colonoscopy as a primary screening modality, and/or in adults with failed colonoscopy in whom evaluation of the colon is deemed necessary. CT colonography is also indicated for the evaluation of the colon proximal to an obstructing lesion.

CT colonography should not be performed in children or in patients in whom perforation is a risk, and it should probably not be performed immediately after failed colonoscopy in patients who had polyps removed or large biopsy specimens taken because of the risk of perforation from associated colonic insufflation. Specific clinical circumstances may also exist in which endoscopic examination is preferred to CT colonography (such as patients with known inflammatory bowel disease, high-risk symptoms, and others).

### Performance

Radiologic technologists certified by the American Registry of Radiologic Technologists should perform CT

**Abbreviations used in this paper:** ACBE, air contrast barium enema; ACR, American College of Radiology; ACS, American Cancer Society; AGA, American Gastroenterological Association; CI, confidence interval; CMS, Centers for Medicare & Medicaid Services; C-RADS, CT Colonography Reporting and Data System; CRC, colorectal cancer; CT, computed tomographic; 2D, 2-dimensional; 3D, 3-dimensional; MRI, magnetic resonance imaging; PET, positron emission tomography; USPSTF, US Preventive Services Task Force.

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0016-5085/\$36.00

doi:10.1053/j.gastro.2011.09.043

scanning. The extent of training necessary for clinicians and, in particular, gastroenterologists to read CT colonography has not been fully defined. Current evidence suggests that the response to training is unpredictable, and the “learning curve” for CT colonography interpretation will vary widely among observers. Available literature suggests that review of at least 75 endoscopically confirmed cases is appropriate as a minimal requirement for competence in detecting and characterizing colorectal neoplasia detected by CT colonography. Within 6 months of initial training, the gastroenterologist aiming to be competent to read CT colonography should participate in a preceptorship, occurring over 6 months, that includes review of at least 50 live cases, 50 cases from a case library, and manipulation of 50 cases from a continuing medical education-quality CD with an expert reviewing CT colonography cases.

CT colonography, as currently performed, requires a purgative bowel preparation; most bowel preparation regimens use a cathartic agent, the selection of which will depend on availability and safety, patient factors, and physician preferences. Fecal and fluid tagging as part of the CT colonography preparation may permit identification of submerged polyps and reduce false-positive examinations. CT colonography performed without a bowel purge is an area of promise, but cannot currently be recommended because no large clinical studies have verified its performance in a large cohort. Colonic insufflation with automated insufflators and carbon dioxide results in improved colonic distention and patient comfort compared with manual insufflation with room air. Intravenous contrast may be useful in specific circumstances, but is not generally recommended for routine screening CT colonography.

As part of a CT colonography examination, high-resolution CT is performed in the supine and prone positions following review of an initial CT scout. Evaluation of CT colonography involves the following 2 steps: (1) a primary search for suspicious colonic lesions and (2) lesion characterization. The primary search can be achieved using either a primary 2-dimensional (2D) search or a primary 3-dimensional (3D) search; optimal performance likely involves both search methods. Lesion characterization includes the determination of lesion density and lesion mobility.

### **Reading**

All intracolonic findings should be examined, and any segment not adequately evaluated should be documented. All large masses and lesions that compromise luminal caliber should be communicated. The size and location of colorectal lesions should be reported. Extracolonic findings are common, but the majority are not clinically significant and do not require follow-up. Characterizing extracolonic lesions requires expertise in recognizing abnormalities of the lungs, the solid organs, the retroperitoneum, and the extracolonic gastrointestinal

tract. A radiologist should review the extracolonic portion of the CT colonography study.

### **Reporting**

A standardized CT colonography report should encompass elements of preprocedure documentation, patient demographics, indications, technical description, findings, clinical assessment, and recommendations (plan) for follow-up. Report thresholds based on polyp size are controversial. General agreement exists that all polyps  $\geq 10$  mm should be reported. However, full consensus relating to the reporting or management of subcentimeter polyps discovered at CT colonography has not been reached. The referral of patients to endoscopy for diminutive lesions ( $\leq 5$  mm, where CT colonography specificity is low) could lead to inappropriate referrals to colonoscopy, and current CT colonography acquisition parameters are tailored to the detection of polyps  $\geq 6$  mm in diameter. Based on these considerations, the task force recommends that all polyps  $\geq 6$  mm seen on CT colonography should be reported. Information regarding the cancerous potential of diminutive colonic polyps ( $\leq 5$  mm) is not known, so a conservative approach is warranted until additional data is available. When only 1 to 2 polyps  $\leq 5$  mm are seen on CT colonography, such findings should be reported when diagnostic confidence is high. Extracolonic findings should also be reported in accordance with the CT Colonography Reporting and Data System (C-RADS) CT colonography reporting scheme.

For institutions that perform CT colonography, a comprehensive technical and professional quality control program is required. Technical quality should encompass both the CT scanner and the CT colonography workstation. Professional quality assessment monitors outcomes within a practice for internal quality assessment purposes. Such measures will alert physicians that changes may need to be made in patient educational materials, patient preparation regimens, or interpretation techniques. Retrospective, sporadic review of CT colonography parameters and reports can also ensure that appropriate technique and practice patterns are being followed. Standardized practices followed by all physicians and allied health personnel within a practice can also improve patient safety.

### **Regulatory Issues**

Federal anti-kickback laws and Stark statutes influence who can perform CT colonography and have addressed the subject of split interpretation (a situation in which one physician interprets intracolonic images and another interprets the extracolonic images). Because primary screening CT colonography is not currently a covered Medicare benefit, it does not constitute a “designated health service” and is not currently subject to Stark statutory requirements regarding referrals and billing for split interpretation. Compensation arrangements in which there is dual interpretation are potentially complicated but should not exclude any group from reading CT colonography. A personal services and management agree-

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