

## JAMA Clinical Guidelines Synopsis

## Recommendations for Follow-up Colonoscopy After Polypectomy

Cecelia Zhang, MD; Adam S. Cifu, MD; Amit Patel, MD

**GUIDELINE TITLE** Recommendations for Follow-Up After Colonoscopy and Polypectomy: A Consensus Update by the United States Multi-Society Task Force on Colorectal Cancer (USMSTF on CRC)

**DEVELOPER** USMSTF on CRC, representing the American College of Gastroenterology (ACG), American Gastroenterological Association (AGA), and American Society for Gastrointestinal Endoscopy (ASGE)

**RELEASE DATE** March 2020

**PRIOR VERSION** July 2012

**FUNDING SOURCES** National Cancer Institute (NCI), National Institutes of Health (NIH), Department of Veterans Affairs (VA)

**TARGET POPULATION** Average-risk adults undergoing high-quality colonoscopy with or without polypectomy (excluding adults with hereditary CRC syndromes, inflammatory bowel disease, serrated polyposis syndrome, or personal or family history of CRC)

**MAJOR RECOMMENDATIONS**

- Repeat colonoscopy is recommended 7 to 10 years after complete removal of 1 to 2 tubular adenomas smaller than 10 mm (strong recommendation; moderate quality of evidence [QOE]).
- Repeat colonoscopy is recommended 3 to 5 years after complete removal of 3 to 4 tubular adenomas smaller than 10 mm (weak recommendation; very low QOE).
- Repeat colonoscopy is recommended 3 years after complete removal of 5 to 10 tubular adenomas smaller than 10 mm (strong recommendation; moderate QOE).
- Repeat colonoscopy is recommended 3 years after complete removal of 1 or more adenomas 10 mm or larger (strong recommendation; high QOE).
- Repeat colonoscopy is recommended 6 months after piecemeal resection of an adenoma or sessile serrated polyp 20 mm or larger (strong recommendation; moderate QOE).

**Summary of the Clinical Problem**

Screening colonoscopy, through early diagnosis of CRC and removal of polyps, prevents death due to CRC.<sup>1</sup> Increasing participation in CRC screening and improving quality of colonoscopy enhances detection and resection of colorectal polyps. Thus, guidance on appropriate timing of follow-up colonoscopy for postpolypectomy surveillance is warranted.<sup>2</sup>

**Characteristics of the Guideline Source**

The USMSTF on CRC, which represents the gastroenterology professional societies ACG, AGA, and ASGE, developed these recommendations (Table). The authors specifically refer to the document as “recommendations” rather than “guidelines” per the task force charter. The task force comprised gastroenterologists with interest and expertise in CRC. Funding was supported by the NCI, NIH, and VA. The authors disclosed no relative conflicts of interest after 2016. Authors disclosed industry relationships that were not considered conflicts. The authors developed PICO (population, intervention, comparison, outcome) questions to guide comprehensive literature searches. Of 2002 candidate articles identified by searches, 136 articles were fully reviewed, with management recommendations developed and then refined based on consensus discussion by all authors. The QOE and strength of recommendations were rated using GRADE.



[Author Audio Interview](#)

**Evidence Base**

These recommendations extend previously suggested screening intervals after removal of 1 to 2 tubular adenomas smaller than 10 mm from 5 to 10 years to 7 to 10 years. Recent data including 2 meta-analyses suggest that adults with 1 to 2 tubular adenomas smaller than 10 mm are at low absolute risk of metachronous advanced neoplasia (adenoma  $\geq$  10 mm, adenoma with villous or high-grade dysplastic histology, or CRC) at 3- to 5-year follow-up (3.6%-4.9%).<sup>4,5</sup> These absolute risks are low, comparable with those of adults with normal baseline colonoscopy (1.6%-3.3%).<sup>4,5</sup>

Repeat colonoscopy is recommended 3 years after complete removal of 5 to 10 tubular adenomas smaller than 10 mm. This recommendation is supported by retrospective data from a single academic center of more than 1400 adults with follow-up colonoscopy after at least 200 days that found that 5% had metachronous advanced neoplasia (vs 1.8% for 3-4 adenomas <10 mm and 1.4% for 1-2 adenomas <10 mm).<sup>6</sup> For 3 to 4 small adenomas, recommended surveillance interval is 3 to 5 years, but limited data result in a weak recommendation.

**Table. Guideline Rating<sup>3</sup>**

Standard	Rating
Establishing transparency	Good
Management of conflict of interest in the guideline development group	Good
Guideline development group composition	Good
Clinical practice guideline-systematic review intersection	Good
Establishing evidence foundations and rating strength for each of the guideline recommendations	Good
Articulation of recommendations	Good
External review	Fair
Updating	Fair
Implementation issues	Good

New data strengthen the recommendation for repeat colonoscopy at 3 years for adults with at least 1 adenoma 10 mm or larger removed at colonoscopy. Specifically, cohort studies from the US, the Netherlands, and Australia support the high risk of these adenomas, finding them independently associated with increased risk of metachronous advanced neoplasia, including CRC.<sup>2</sup> A US multicenter prospective cohort study found that CRC risk is significantly higher among adults with advanced adenoma at baseline vs those without baseline adenomas (cumulative incidence over 15 years, 2.9% vs 1.2%).<sup>7</sup>

Piecemeal resection of colon polyps at colonoscopy contributes to increased risk of metachronous or recurrent neoplasia. Meta-analysis of 33 studies showed 20% increased risk of local recurrence for piecemeal resection vs 3% for en bloc resection of nonpedunculated polyps; 96% of recurrences were detected at 6 months.<sup>8</sup> These findings, buttressed by other data, prompt a strong recommendation for short-interval repeat colonoscopy in 6 months for adults with piecemeal resection of adenoma or sessile serrated polyp 20 mm or larger.<sup>2</sup>

### Benefits and Harms

The benefits of surveillance after baseline examination are less clear than those of CRC screening. Individuals with certain categories of adenomas (despite resection) appear to have increased risk of CRC compared with the general population.<sup>2</sup> However, colonoscopy procedures, including bowel preparation and sedation, also carry potential risks and costs. Therefore, stratifying risk to best minimize unwarranted procedures and potential allocation of resources away from adults warranting more intensive surveillance is imperative.

### Discussion

These recommendations incorporate new evidence (including data based on risk of incident and fatal CRC) to update and strengthen surveillance guidance for average-risk adults; family history should

be acquired and updated at each colonoscopy. They emphasize high-quality colonoscopy, including attention to adequate bowel preparation, cecal intubation and photodocumentation, colonoscopist performance benchmarks (such as for adenoma detection rate), and complete polypectomy. Major changes from the 2012 recommendations include extended surveillance intervals for 1 to 2 small adenomas (7-10 years vs 5-10 years) and for 3 to 4 small adenomas (3-5 years vs 3 years), as well as more specific recommendations for certain scenarios (such as 1 year vs <3 years for >10 adenomas [as well as considering genetic testing] or after removal of serrated polyps).<sup>2</sup>

### Areas in Need of Future Study or Ongoing Research

Because interval advanced neoplasia or CRC after colonoscopy may result from new growth, incomplete polyp resection, or missed neoplasia, further investigations are warranted to better understand how to stratify and minimize risk while maximizing effectiveness of surveillance. Newly published work proposes stricter criteria (adenoma  $\geq$  20 mm or high-grade dysplasia) to reduce the proportion of adults classified as high risk for CRC who warrant intensive surveillance.<sup>9</sup> Although strong randomized trial data exist for CRC screening, the ongoing European Polyp Surveillance trial has randomized adults to different surveillance intervals based on baseline colonoscopy findings.<sup>10</sup> Increases in CRC diagnosis among younger adults (<50 years) as well as higher procedure-related risks in older adults (>75 years) prompt further assessment of surveillance benefits in these groups, as well as how family history of colorectal neoplasia may affect surveillance recommendations. Future data with higher-quality colonoscopies may afford insights into whether extending 10-year intervals for adults with normal baseline colonoscopy may be appropriate, and whether adults with smaller polyps (eg, <6 mm) may warrant lengthened surveillance intervals. Finally, as with CRC screening, alternative approaches (such as stool-based testing) may represent potential options for surveillance in lower-risk adults.

#### ARTICLE INFORMATION

**Author Affiliations:** Division of Gastroenterology, Duke University School of Medicine, Durham, North Carolina (Zhang, Patel); University of Chicago, Chicago, Illinois (Cifu); Durham Veterans Affairs Medical Center, Durham, North Carolina (Patel).

**Corresponding Author:** Amit Patel, MD, Division of Gastroenterology, Duke University School of Medicine, 10207 Cerny St #210, Raleigh, NC 27617 (amit.patel@duke.edu).

**Section Editor:** Edward H. Livingston, MD, Deputy Editor, *JAMA*.

**Published Online:** November 6, 2020. doi:10.1001/jama.2020.15001

**Conflict of Interest Disclosures:** Dr Patel reported serving on the AGA Clinical Guidelines Committee and the ACG Practice Parameters Committee but did not participate in development of the recommendations evaluated in this article. No other disclosures were reported.

#### REFERENCES

- Zauber AG, Winawer SJ, O'Brien MJ, et al. Colonoscopic polypectomy and long-term prevention of colorectal-cancer deaths. *N Engl J Med*. 2012;366(8):687-696. doi:10.1056/NEJMoal100370
- Gupta S, Lieberman D, Anderson JC, et al. Recommendations for follow-up after colonoscopy and polypectomy. *Gastroenterology*. 2020;158(4):1131-1153. doi:10.1053/j.gastro.2019.10.026
- Cifu AS, Davis AM, Livingston EH. Introducing JAMA Clinical Guidelines Synopsis. *JAMA*. 2014;312:1208. doi:10.1001/jama.2014.12712
- Hassan C, Gimeno-García A, Kalager M, et al. Systematic review with meta-analysis. *Aliment Pharmacol Ther*. 2014;39(9):905-912. doi:10.1111/apt.12682
- Dubé C, Yakubu M, McCurdy BR, et al. Risk of advanced adenoma, colorectal cancer, and colorectal cancer mortality in people with low-risk adenomas at baseline colonoscopy. *Am J Gastroenterol*. 2017;112(12):1790-1801. doi:10.1038/ajg.2017.360
- Vemulapalli KC, Rex DK. Risk of advanced lesions at first follow-up colonoscopy in high-risk groups as

defined by the United Kingdom post-polypectomy surveillance guideline. *Gastrointest Endosc*. 2014;80(2):299-306. doi:10.1016/j.gie.2014.02.1029

7. Click B, Pinsky PF, Hickey T, et al. Association of colonoscopy adenoma findings with long-term colorectal cancer incidence. *JAMA*. 2018;319(19):2021-2031. doi:10.1001/jama.2018.5809

8. Belderbos TD, Leenders M, Moons LM, Siersema PD. Local recurrence after endoscopic mucosal resection of nonpedunculated colorectal lesions. *Endoscopy*. 2014;46(5):388-402. doi:10.1055/s-0034-1364970

9. Wieszczy P, Kaminski MF, Franczyk R, et al. Colorectal cancer incidence and mortality after removal of adenomas during screening colonoscopies. *Gastroenterology*. 2020;158(4):875-883. doi:10.1053/j.gastro.2019.09.011

10. Jover R, Bretthauer M, Dekker E, et al. Rationale and design of the European Polyp Surveillance (EPoS) trials. *Endoscopy*. 2016;48(6):571-578. doi:10.1055/s-0042-104116