Introduction

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Colonoscopy remains the primary method for investigating symptoms and pathologies of the colon (and rectum) and terminal ileum. Computed tomography (CT) colonography also has a role under certain circumstances, but other modalities such as magnetic resonance colonography and capsule colonography are not yet in routine use and are not covered in this section. Accepted indications for colonoscopy include a positive faecal occult blood test, new and persistent lower gastrointestinal symptoms (particularly bleeding or change in bowel habit), or significant family history of bowel cancer. However, like any test, colonoscopy and CT colonography have limitations in terms of accuracy and risk that must be considered before an individual is subjected to them.

As with other diagnostic tests, colonoscopy has a false negative rate for detection of colorectal cancer and adenomas. This needs to be taken into consideration when decisions are made about the choice and timing of surveillance procedures. While the overall sensitivity for colorectal cancer is 95%,[1] the available literature suggests that cancer miss rates are higher for the proximal colon than elsewhere in the large bowel.[2] In a systematic review of polyp miss rates as determined by tandem colonoscopy, Van Rijn et al (2006)[3] identified studies in which patients had undergone two same-day colonoscopies with polypectomy. The research yielded six studies, involving a total of 465 patients. The pooled miss rate for polyps of any size was 22%. Adenoma miss rate by size was 2.1% for adenomas 10mm, 13% for adenomas 5–10mm, and 26% for adenomas 1–5mm, respectively. Analysis of the data suggests that, in expert hands, colonoscopy rarely misses polyps 10mm, but the miss rate increases significantly with smaller sized polyps.

In a large multicentre study, Heresbach et al (2008)[4] examined adenoma miss rate by performing a large multicentre study, with same-day back-to-back video colonoscopy performed by two different colonoscopists in randomised order and blinded to results of the other examination. The miss rates for all polyps, all adenomas, polyps 5mm, adenomas 5mm, and advanced adenomas were 28%, 20%, 12%, 9% and 11%, respectively, which are not trivial. Greater diameter (1mm increments) and number of polyps (3) were independently associated with a lower polyp miss rate, whereas sessile or flat shape was significantly associated with a higher miss rate.[4]

The miss rate of colonoscopy, however, is operator-dependent, with rates of polyp and cancer detection varying between colonoscopists. This translates into variable colorectal cancer protection following colonoscopy such that, unlike other screening tests, the performance characteristics of colonoscopy are not fixed, and vary with operator, patient, technical, and system factors.[5] Improvements in colonoscopy have therefore focused on these factors to reduce the variation in performance.

No systematic review was performed for this section. The guidance is based on current international guidelines and consensus statements considered to be relevant to Australian practice.

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Chapter subsections

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- Bowel preparation
- Advances in technique
- Technological advances
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- Quality of colonoscopy
- CT colonography
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