

Title:	Computed tomography colonography
Agency:	Medical Services Advisory Committee (MSAC) Mail Drop Point 106 Commonwealth Department of Health and Ageing GPO Box 9849 Canberra ACT 2601 Australia http://www.msac.gov.au
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Aim: To assess the safety, effectiveness and cost-effectiveness of computed tomography colonography (CTC) for the diagnosis or exclusion of colorectal neoplasia in i) symptomatic patients or in patients that are asymptomatic but at high risk of colorectal neoplasia due to a personal or family history of colorectal polyps or cancer, versus double contrast barium enema (DCBE) and versus colonoscopy; and ii) symptomatic or high-risk patients who are ineligible for colonoscopy due to patient contraindications or the inability to perform or complete the test, versus DCBE.

Results and conclusions

Safety: CTC is a relatively safe procedure compared to DCBE and as least as safe as, or safer than, diagnostic colonoscopy. Both CTC and DCBE expose patients to ionizing radiation and are associated with a very small risk of colonic perforation.

Effectiveness:

- i) Evidence about CTC accuracy for the detection of cancers and polyps ≥ 10 mm compares favourably with DCBE, but not with colonoscopy. There is some evidence to suggest that patients prefer CTC over DCBE and colonoscopy.
- ii) There is little evidence about accuracy of CTC compared to DCBE accuracy in patients following an incomplete colonoscopy. The potential advantages of CTC over DCBE include:
 - a) ability to successfully visualize the entire colon following an incomplete colonoscopy, and the proximal colon in patients with a distal obstruction;
 - b) ability to be performed immediately after a failed colonoscopy; and
 - c) may be preferred and better tolerated by patients.

Cost-effectiveness: For CTC compared to DCBE, an economic model suggests a base case incremental cost per life year saved (cost/LYS) of \$25,420, ranging from \$4,882/LYS to a situation where CTC is dominated by DCBE (less effective, more costly). For colonoscopy compared to CTC, the base case incremental cost/LYS is \$1,659, ranging from colonoscopy being the dominant test (more effective, less costly) to a cost/LYS of \$13,955.

Recommendation: Evidence in relation to the comparison of CTC with colonoscopy indicates that CTC is less effective. MSAC recommends that public funding for CTC as a substitute investigation for colonoscopy should not be supported. On the basis of the strength of evidence pertaining to the effectiveness and cost-effectiveness, MSAC recommends that public funding for CTC for exclusion of colorectal neoplasia in symptomatic or high risk patients who are either ineligible for colonoscopy due to patient contraindications, or where there is an inability to perform or complete a colonoscopy, should be supported. The Minister for Health and Ageing accepted this recommendation on 24 August 2006.

Methods: MSAC conducted a systematic review of the biomedical literature from January 1994 to June 2005 to assess safety and effectiveness (accuracy, patient preferences/quality of life) of CTC. An economic analysis based on a decision-tree model was undertaken to compare the cost-effectiveness of CTC versus DCBE and versus colonoscopy in the patients of interest.