

# Review: Hemocult screening reduces death from colorectal cancer in average-risk patients > 50 years of age

McLeod RS and members of the Canadian Task Force on Preventive Health Care. Screening strategies for colorectal cancer: a systematic review of the evidence. *Can J Gastroenterol*. 2001 Oct;15:647-60.

## QUESTION

In asymptomatic patients at normal or above-average risk, how effective are specific screening techniques for colorectal cancer?

## DATA SOURCES

Studies were identified by searching MEDLINE (1966 to January 2001), reviewing the references of reviews published before January 2001, and surveying content experts.

## STUDY SELECTION

English-language studies were selected if they evaluated Hemocult testing, flexible sigmoidoscopy, or genetic testing as the first step in a multiphase secondary prevention strategy or colonoscopy as a single-phase secondary prevention strategy in both asymptomatic and high-risk patients. Studies that screened with digital rectal examination and double-contrast barium enema were excluded.

## DATA EXTRACTION

Data were extracted on patient characteristics, duration of follow-up, and main outcome measures.

## MAIN RESULTS

For patients at average risk, evidence existed to support the use of annual or biennial fecal occult blood testing (FOBT) (from randomized controlled trials [RCTs]) for asymptomatic patients > 50 years of age. 4 RCTs assessed the value of screening with the Hemocult test in average-risk patients and found that the risk for death from colorectal cancer was reduced with Hemocult screening in patients > 50 years of age (relative risk reduction 16%, 95% CI 7 to 23, approximately 1 death from colorectal cancer would be averted for every 1000 screened over a 10-y period). Evidence for the effectiveness of flexible sigmoidoscopy in average-risk patients with an outcome of death was only available from case-control studies. 3 RCTs suggested that flexible sigmoidoscopy might be superior to FOBT in detecting adenomas and possible cancer. However, these trials were small. The evidence for whether 1 or both of FOBT and sigmoidoscopy should be done was unclear, as was the evidence

about the use of colonoscopy as an initial screening test. For patients at above-average risk, low-quality evidence (retrospective cohort studies and case series) supported either genetic testing or flexible sigmoidoscopy of patients at risk in familial adenomatous polyposis kindreds and screening with colonoscopy of patients in kindreds with hereditary nonpolyposis colon cancer. The evidence regarding use of colonoscopy for persons who have a family history of colorectal polyps or cancer was unclear.

## CONCLUSION

In patients > 50 years of age at average risk, Hemocult screening reduces the risk for death from colorectal cancer.

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## COMMENTARY

Colorectal cancer is preventable. Each of 4 RCTs have shown beyond chance that FOBT screening reduces mortality from colorectal cancer. The main question is which kinds of FOBT or other screening tests, singly and in combination, are best, given the magnitude of benefit, complication rates, inconvenience, up-front costs, and long-term cost-effectiveness associated with each test. The review of McLeod and colleagues is confined to analyzing just one of these issues: effectiveness. What is "best" also depends on the preference of individual patients and local resources (1).

The authors have identified the strong studies of screening effectiveness and summarized their important features. However, pooling results from the FOBT trials, which yield a summary effect size of 16%, is misleading. The trials address different questions: the respective effects of annual and biennial screening, with and without rehydration (which increases sensitivity and the false-positive rate). The effects of these different interventions need to be sorted out, not pooled. In fact, the trial results suggest that biennial screening for > 10 years reduces relative risk

by 18% to 21% regardless of whether the stool sample is rehydrated. The relative risk reduction with annual FOBT screening and rehydration is apparently larger—33%.

The effectiveness of sigmoidoscopy and colonoscopy is not established by RCT-level evidence but is supported by strong cohort and case-control studies reporting large effects and by biological plausibility. FOBT, only a screening test, could not save lives if we did not have colonoscopy to evaluate positive test results and treatment. We should not be so locked into evidence from RCTs that we turn our backs on other screening options that, from the evidence, appear to be more effective than FOBT, which happens to be the most rigorously studied.

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## Reference

1. Winawer SJ, Fletcher RH, Miller L, et al. Colorectal cancer screening: clinical guidelines and rationale. *Gastroenterology*. 1997;112:594-642.