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PREVENTIVE HEALTH CARE

Colorectal cancer screening

Recommendation statement from the Canadian Task Force on Preventive Health Care

Recommendations

For asymptomatic people with no personal history of ulcerative colitis, polyps or colorectal cancer.

- *People at normal risk:* There is good evidence to include annual or biennial fecal occult blood testing (grade A recommendation) and fair evidence to include flexible sigmoidoscopy (grade B recommendation) in the periodic health examination of asymptomatic people over 50 years of age. There is insufficient evidence to make recommendations about whether only one or both tests should be performed (grade C recommendation). There is insufficient evidence to include or exclude colonoscopy as an initial screening test in the periodic health examination of people in this age group (grade C recommendation).
- *People at above-average risk:* There is fair evidence to include either genetic testing or flexible sigmoidoscopy in the periodic health examination of people in kindreds with familial adenomatous polyposis (grade B recommendation). There is fair evidence to include colonoscopy screening in the periodic health examination of patients in kindreds with hereditary nonpolyposis colon cancer (grade B recommendation). There is insufficient evidence to recommend colonoscopy for people who have a family history of colorectal polyps or cancer but who do not meet the criteria for hereditary nonpolyposis colon cancer (grade C recommendation).

In Canada colorectal cancer is the third most common cancer, accounting for more than 12% of cases of cancer in both sexes. It was estimated that there would be 17 000 new cases and 6500 deaths from colorectal cancer in Canada in 2000.[1] These rates, particularly among men, are among the highest in the world. People in kindreds with familial adenomatous polyposis or hereditary nonpolyposis colon cancer have close to a 50% chance of acquiring colorectal cancer because of the autosomal dominant mode of inheritance of these syndromes. Similarly, people with a family history of colorectal cancer who do not meet the criteria for hereditary nonpolyposis colon cancer or familial adenomatous polyposis may be at increased risk, but that risk is less well defined.

Manoeuvres

People at normal risk

- Multiphasic screening with fecal occult blood test as first phase
- Multiphase screening with sigmoidoscopy
- Uniphase screening with colonoscopy

People at above-average risk

- Flexible sigmoidoscopy or genetic testing for people in kindreds with familial adenomatous polyposis
- Colonoscopy for people in kindreds with hereditary nonpolyposis colon cancer
- Colonoscopy for people with a family history (first-degree relative) of polyps or colorectal cancer

Potential benefits

- Reduction in mortality from colorectal cancer

Evidence and clinical summary

- Although there is good evidence (from randomized controlled trials) to include screening with the fecal occult blood test in the periodic health examination of asymptomatic people over 50 years of age,[5–8] concerns remain about the high rate of false-positive results, feasibility and small clinical benefit of such screening. The number needed to screen for 10 years to avert 1 death from colorectal cancer is 1173.
- There is fair evidence to include screening with sigmoidoscopy,[9–11] but it is unclear whether to perform one or both of fecal occult blood testing and sigmoidoscopy.[12–14]
- There is no direct evidence that colonoscopy is an effective screening manoeuvre in people at normal risk, even though it is the best method for detecting adenomas and carcinomas. It may not be feasible to screen these people because of poor compliance, the expertise and equipment required and the potential costs. However, if colonoscopy were an effective screening strategy when performed less frequently, these issues might be of less concern.[15,16]
- Genetic testing is indicated for people at risk for familial adenomatous polyposis, followed by flexible sigmoidoscopy in those carrying the mutation.[17,18] People from families in which the gene mutation has been identified but who do not carry the mutation themselves require screening similar to that for people at normal risk. For people at risk where the mutation has not been identified in the family, or where genetic testing is unavailable, screening with annual or biannual flexible sigmoidoscopy should start at puberty. In all instances, genetic counselling should be performed before genetic testing.
- For people from families with hereditary nonpolyposis colon cancer, colonoscopy rather than sigmoidoscopy is recommended (level III evidence).[19] Although higher levels of evidence are usually required to give a grade B recommendation, it is unlikely that more rigorous studies could be performed in these patients given the high risk of cancer and relative infrequency of hereditary nonpolyposis colon cancer. The age at which screening should begin and the frequency with which colonoscopy should be performed are unclear.
- People who have only 1 or 2 first-degree relatives with colorectal cancer require screening similar to that for people at normal risk.
- Because most screening options are multiphasic, adequate infrastructure is required to support implementation, and to assure quality control and optimal and timely follow-up of screened individuals.

Potential harms

- Sequelae of false-positive or false-negative results from fecal occult blood tests (e.g., unnecessary investigations and false reassurance)
- Perforation (sigmoidoscopy 1.4 per 10 000 procedures; colonoscopy 10 per 10 000 procedures); bleeding
- Anxiety, poor compliance

Recommendations by others

The Ontario Expert Panel on Colorectal Cancer recommends a multiphasic screening program, beginning with fecal occult blood testing, for people at normal risk between the ages of 50 and 75 years.[2] The US Preventive Services Task Force recommends screening with either annual fecal occult blood testing or sigmoidoscopy (interval unspecified) or both for people over 50 years.[3] A number of groups in the United States, including the American Cancer Society, the American College of Gastroenterology, the Crohn's and Colitis Foundation of America and the Oncology Nursing Society, recommend screening with fecal occult blood testing annually, flexible sigmoidoscopy every 5 years, combined fecal occult blood testing and flexible sigmoidoscopy, double-contrast barium enema every 5–10 years or colonoscopy every 10 years for people aged 50 or older with no other risk factors.[4] These groups also made recommendations for people with additional risk factors: genetic counselling and possible genetic testing for those at risk of familial adenomatous polyposis and,

Identification of people at increased risk of colon cancer

Familial adenomatous polyposis

- Multiple adenomatous polyps progressively develop throughout the colon.
- Polyps first appear after puberty.
- Other benign and malignant lesions, including gastric and duodenal polyps, desmoid tumours, osteomas and retinal lesions, occur with variable frequency.

Hereditary nonpolyposis colon cancer

- This cancer is typified by the presence of multiple family members affected with cancer, including cancers of the colon and rectum as well as the endometrium, stomach, small bowel, pancreas, ovary, ureter and renal pelvis in some families. Amsterdam criteria: 3 family members affected with colorectal cancer, 2 of whom are in successive generations and at least 1 is under the age of 45 years.[20]
- Colorectal cancers tend to be right sided, occur at an early age, have poor prognostic histological features (poorly differentiated, mucinous) and are more advanced at presentation.

Family history

- People who have 2 or more first-degree relatives with colorectal cancer have an increased, age-adjusted relative risk of colorectal cancer.

for people with positive genetic test results, flexible sigmoidoscopy beginning at puberty. For people in kindreds with hereditary nonpolyposis colon cancer, annual colonoscopy beginning between 20 and 30 years of age is recommended. These groups made screening recommendations for people with a family history of polyps or colon cancer similar to those for people at normal risk but beginning at age 40 rather than 50.

The Canadian Task Force on Preventive Health Care is an independent panel funded through a partnership of the federal and provincial/territorial governments of Canada.

This statement is based on the technical report "Preventive health care, 2001 update: screening strategies for colorectal cancer," by Robin S. McLeod, with the Canadian Task Force on Preventive Health Care. The full technical report is available from the task force office (ctf@ctfphc.org).

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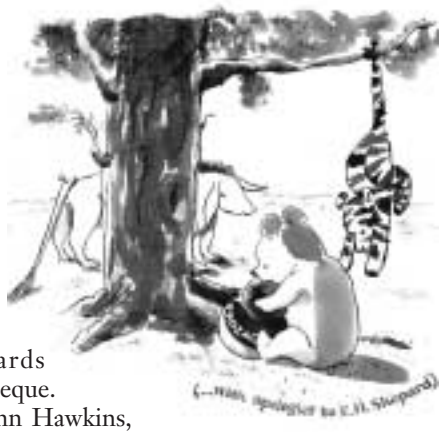
CMAJ strikes gold with Winnie-the-Pooh article



Fred Sebastian

An article from last year's Holiday Review, Pathology in the Hundred Acre Wood: a neurodevelopmental perspective on A.A. Milne (*CMAJ* 2000;163 [12]:1557-9), won a gold prize in the Canadian Business Press' Kenneth R. Wilson Memorial Awards (**www.cbp.ca**). The award is accompanied by a $1000 cheque.

The article, by Drs. Sarah Shea, Kevin Gordon, Ann Hawkins, Janet Kawchuk and Donna Smith of Dalhousie University, made headlines around the globe after its publication last December. It won the award for excellence in the "One-of-a-Kind" article category. The prizes were presented in Toronto June 6, 2001. — *CMAJ*