

## **Benefits and risks of colorectal cancer screening in elderly patients.**

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### **Background**

In patients with limited life expectancy (LE), the risks of colorectal cancer (CRC) screening may outweigh the benefits. The aim of this study was to quantify risks and benefits of different CRC screening strategies in elderly patients with varying health status.

### **Methods**

We quantified the potential risks and benefits of screening in patients age 70-94 with varying LE based on underlying health status. We chose 3 screening strategies: annual fecal occult blood tests (FOBT), flexible sigmoidoscopy (FS) every 5 years, or colonoscopy (COLO) every 10 years. We estimated that FOBT, FS, and COLO reduce CRC mortality by 18%, 40%, and 75%, respectively. The risk of a COLO-related complication was set at 0.3%, and the risk of death at 0.01%. We assumed that reduction in CRC-related mortality would not be seen until 5 years after screening was begun. We compared among different strategies the number needed to screen to prevent one CRC-related death (NNS) and the number needed to encounter one screening-related harm (NNH).

### **Results**

For 70-4-year old women with average LE, the NNS varied from 82 (COLO) to 340 (FOBT); the NNH varied from 145 (COLO) to 526 (FOBT). For similar 70-4 year old men, the NNS/NNH varied from 91/256 (COLO) to 380/643 (FOBT). For women 90-4 with good health, the NNS/NNH varied from 279/333 (COLO) to 1163/1993 (FOBT). For similar men, the NNS/NNH varied from 482/333 (COLO) to 2008/3817 (FOBT). Screening was unlikely to benefit the following groups with average LE <5 years: women age 80-9 or men age 75-84 with poor health, and women  $\geq 90$  or men  $\geq 85$  with average or poor health. COLO had the greatest screening benefit, but the highest risk of complications. The potential for a COLO-related complication was higher than the screening benefit for women in poor health age 70-4 with FOBT or FS; women in poor health age 75-9 or women in average health age 85-9 with FS or COLO; women in good health age 90-4 with FS; men in poor health age 70-4 with FS or COLO; men in average

health age 80-4 with FS; and men in good health age 90-4 with FS or COLO. At all ages and life expectancies, the potential CRC mortality reduction from screening outweighed the risk of COLO-related death.

**Conclusion**

The potential benefits and risks of CRC screening vary in elderly patients of different life expectancies. The potential for harm from CRC screening must be weighed against the likelihood of benefit, especially in patients with shorter life expectancy.