

Colonoscopy screening markedly reduces colorectal cancer incidence and death

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A study from researchers in Switzerland found that colonoscopy with polypectomy significantly reduces colorectal cancer incidence and colorectal cancer-related death in the general population. A total of 12 colorectal cancer cases were identified in the screening group of 1,912 patients and 213 cases of colorectal cancer were found in the non-screened group of 20,774 patients. One of the 12 persons of the screened individuals with a colorectal cancer and 51 of the 213 persons of the non-screened individuals with a colorectal cancer died because of their cancers. The study appears in the July issue of *GIE: Gastrointestinal Endoscopy*.

Colorectal cancer (CRC) has a very high incidence in Switzerland as well as in other European countries and is the second most frequent cause of cancer-related deaths in Europe. It is detected in approximately 413,000 people in Europe every year, half of whom die because of the disease. Therefore a need exists for efficient strategies for prevention and early detection of CRC. [Colonoscopy](#) with the possibility of an immediate [polypectomy](#) is a recommended and preferred [screening method](#) because [polyps](#) (growths in the colon) can turn into cancer over the course of years to decades. Removing polyps during a colonoscopy prevents that polyp from becoming cancerous.

"In contrast to earlier CRC [screening](#) studies that used colonoscopy, this population-based closed cohort observational study aimed to obtain complete and comparable data on CRC incidence and CRC-related mortality after a single screening colonoscopy compared with no

screening, while taking into account the potential differences in risk profiles between the screened and non-screened participants," said study lead author Urs A. Marbet, Cantonal Hospital of Uri, Altdorf, Switzerland. "We found that colorectal [cancer screening](#) by colonoscopy markedly reduces not only the incidence of colorectal cancer, but also cancer-related death. We are unaware of any other long-term prospective study assessing the role of colonoscopy screening for the reduction of colorectal [cancer incidence](#) and mortality in a well-defined, population-based setting under real-life conditions."

Methods

The researchers' objective was to compare the incidence of and mortality from CRC among individuals screened by colonoscopy and non-screened individuals. The study involved 1,912 screened patients and 20,774 non-screened control participants. It was a closed cohort study in a population-based setting in a precisely defined area with a low level of population migration (a mainly rural area of Switzerland) from June 1, 2000 to June 1, 2001. Colonoscopies were performed by 11 board-certified gastroenterologists, including three local gastroenterologists who were supported by 10 gastroenterology trainees from the University Hospitals of Basel and Zurich; each of the trainees had performed at least 200 procedures. Study participants were aged 50 to 80 years old.

CRC cases in this closed cohort study were prospectively collected during the screening period of one year and the follow-up period of six years (June 1, 2001 to May 31, 2007). The main outcome measurements included follow-up data that were corrected for negligible migration balance in the area, and included tumor characteristics and risk or protective factors, age and sex, participation in general health screening examinations, history of CRC in a first-degree relative, smoking status, body mass index, frequency of sports activity, eating habits, and patients'

professions. Colorectal cancer and cancer-related death was recorded for all participants. Statistical comparisons were made between the screened and non-screened patient groups.

Results

Polyps were found in 565 of the 1,912 screened individuals (29.6 percent), including 374 persons (19.6 percent) with adenomas (precancerous polyps) by histology. All polyps found during colonoscopy were removed during the procedure, except for very small lesions in the rectum, or later by surgery (surgical polyp removal occurred in seven cases -- 0.36 percent). Overall, 1,279 polyps were removed. Colorectal cancer incidence was significantly reduced by colonoscopy screening. Overall, 225 colorectal cancers were detected.

A total of 12 CRC cases were found in the screened group (0.6 percent of the screened persons), including one which was found during follow-up 60 months after the initial screening (0.05 percent of screened persons). In the non-screened group, there were 213 cases of CRC (1.0 percent). None of the non-screened patients, of whom five presented with synchronous cancers, and none of the persons who had been excluded from screening, had previously undergone a colonoscopy.

A total of 72 percent of the screened-group cancers (66.7 percent including the one detected during follow-up) and 19.7 percent of the cancers in the control group were at Tumor (T) stage one or two. One of the 12 persons of the screened individuals with a colorectal cancer and 51 of the 213 persons of the non-screened individuals with a colorectal cancer died because of their cancers. Colorectal cancer-associated mortality was clearly lower in the screened group. The risk profile in the screened group was comparable to that in the general population. Risk factors such as lifestyle, smoking, and body mass index, as well as family history, were similar in both groups. "Blue-collar workers" had a higher

incidence of CRC compared with "white-collar workers." The risk factors identified for CRC were a positive family history and smoking. The researchers noted that possible limitations of the study included the relatively low number of participants, confounding factors related to the ethnicity of the subjects, and that it was a non-randomized study.

The researchers found in this closed cohort study a substantial reduction in the incidence of colorectal [cancer](#) and [colorectal cancer](#)–related mortality in a sample of asymptomatic individuals undergoing a single colonoscopy screening compared with non-screened individuals.

Provided by American Society for Gastrointestinal Endoscopy

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