



The Effectiveness of the National Colorectal Cancer Screening Program in Korea

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QUESTION: A 50-year-old male visited the gastroenterology outpatient clinic for colorectal cancer screening and diagnostic testing for colon polyps. He had a sedentary lifestyle, primarily consumed a meat-based diet, and was obese with a body mass index of 30 kg/m². Additionally, he frequently drank alcohol and currently smokes. Notably, his family history revealed that his father was diagnosed and treated for colorectal cancer before the age of 60. What is the most appropriate colorectal cancer screening test for him?

ANSWER: Colonoscopy.

REVIEW: In Korea, the incidence rate of colorectal cancer was 27.2 per 100,000 people in 2020, according to the World Health Organization, which is considerably high on a global scale. The causes of colorectal cancer are known to include not only genetic factors but also various environmental factors related to lifestyle habits. In particular, changes in dietary habits towards Westernized diets, such as increased consumption of red and processed meats, are considered to be important contributing factors. According to the 2020 national cancer statistics, colorectal cancer was the second most common cancer in Korea, following lung cancer and surpassing gastric cancer, when excluding thyroid cancer. It is expected to become the most common cancer in the future, excluding thyroid cancer.

The current national colorectal cancer screening program involves annual stool-based screening tests for individu-

als over 50, followed by a colonoscopy if positive, and a double-contrast barium enema if colonoscopy is not feasible. Since the inclusion of colorectal cancer in the national cancer screening program in 2004, the age-standardized incidence rate per 100,000 people peaked in 2011 and has been decreasing. Studies show that an annual fecal occult blood test (FOBT) can reduce the incidence of colorectal cancer by 18% and mortality by 32%, assuming colonoscopy is performed when FOBT is positive [1]. When screened with colonoscopy, the mortality from colorectal cancer can decrease by up to 68% [2]. This reduction in incidence and mortality is attributed to the early removal of polyps that could develop into colorectal cancer and the early detection of colorectal cancer. People who removed polyps via colonoscopy have a 76–90% reduced incidence of colorectal cancer and about a 50% reduced mortality rate. Indeed, the survival rate for colorectal cancer in Korea has increased since the start of the national cancer screening program, with the 5-year survival rate rising from 56.2% in 1993–1995 to 74.3% in 2015–2019.

Due to limited data, it is still unclear whether stool-based screening tests or colonoscopy could be recommended for the national colorectal cancer screening program. However, in cases with a personal history of colon polyps, family history of polyps or colorectal cancer, risk for genetic diseases such as familial adenomatous polyposis, Lynch syndrome, and inflammatory bowel diseases, colonoscopy is recommended over stool-based screening tests due to the high risk



of colorectal polyps or cancer [3]. A pilot project assessing the effectiveness and safety of colonoscopy as part of the national colorectal cancer screening program has been underway from 2019 to the first half of 2024, investigating the feasibility of replacing stool-based screening tests with colonoscopy [4]. If the pilot project is successful, legal consultations will be discussed. As early as 2026, colonoscopy may be introduced as the primary screening test in the national colorectal cancer screening program in Korea.

In Korea, colorectal cancer screening currently begins at age 50, but due to an increase in early-onset colorectal cancer, some guidelines recommend starting at age 45. Particularly for those with a family history of colorectal cancer, the European Gastroenterology Society recommends starting colonoscopy screening at age 40. The interval for surveillance colonoscopy varies by country, depending on medical policies and resources. In Korea, if the colonoscopy is normal, the next is recommended in 5–10 years; if polyps are removed, the interval depends on the number, size, and histologic types of polyps, usually within 3–5 years; and annually, if more than 10 polyps are removed. However, the precise surveillance interval for each individual should be determined in consultation with a physician.

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CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

REFERENCES

1. Shaukat A, Mongin SJ, Geisser MS, et al. Long-term mortality after screening for colorectal cancer. *N Engl J Med* 2013;369:1106-1114. <https://doi.org/10.1056/NEJMoa1300720>
2. Nishihara R, Wu K, Lochhead P, et al. Long-term colorectal-cancer incidence and mortality after lower endoscopy. *N Engl J Med* 2013;369:1095-1105. <https://doi.org/10.1056/NEJMoa1301969>
3. Carethers JM. Fecal DNA testing for colorectal cancer screening. *Annu Rev Med* 2020;71:59-69. <https://doi.org/10.1146/annurev-med-103018-123125>
4. Park B, Jun JK, Kim BC, Choi KS, Suh M. Korean colonoscopy screening pilot study (K-cospi) for screening colorectal cancer: study protocol for the multicenter, community-based clinical trial. *BMC Gastroenterol* 2021; 21:36. <https://doi.org/10.1186/s12876-021-01610-1>