

# Study finds regular aspirin use associated with greatest reduction in colorectal cancer among those most at risk

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Regular aspirin may help lower risk of colorectal cancer in people with greater lifestyle-related risk factors for the disease, according to a study

led by researchers at Mass General Brigham. The study, published in [JAMA Oncology](#), could encourage a more nuanced approach to preventive aspirin use.

"We sought to identify individuals who are more likely to benefit from aspirin to facilitate more personalized prevention strategies," said co-senior author Andrew Chan, MD, MPH, Director of Epidemiology for the Mass General Cancer Center and gastroenterology Director of the Center for Young Adult Colorectal Cancer at Massachusetts General Hospital (MGH).

Colorectal cancer is the second-leading cause of cancer death in the United States, according to the National Cancer Institute.

The U.S. Preventive Services Task Force previously recommended daily [low-dose aspirin](#) to prevent cardiovascular events and colorectal cancer in all adults ages 50 to 59 (the highest risk age group for colorectal cancer). In 2016, they withdrew the recommendation in part due to concerns about aspirin increasing the risk of gastrointestinal bleeding.

For the study, researchers analyzed the health data from 107,655 participants from the Nurses' Health Study and Health Professionals Follow-Up Study. They compared the colorectal cancer rates in those who took aspirin regularly with those who did not take aspirin regularly. Regular aspirin use was defined as either two or more standard dose (325 mg) tablets per week or daily low-dose (81 mg) aspirin.

Study participants were followed starting from an average age of 49.4 years. Those who regularly took aspirin had a colorectal cancer 10-year cumulative incidence of 1.98%, compared to 2.95% among those who did not take aspirin.

The benefit of aspirin was largest among those with the unhealthiest

lifestyles. Those with the lowest healthy lifestyle scores (unhealthiest) had a 3.4% chance of getting colorectal cancer if they did not take regular aspirin and a 2.12% chance of getting colorectal cancer if they took aspirin regularly.

By contrast, in those with the highest healthy lifestyle scores (healthiest), the colorectal cancer rates were 1.5% in regular aspirin-taking group and 1.6% in the non-regular aspirin group. This means that in the least healthy group, treating 78 patients with aspirin would prevent one case of colorectal cancer over a 10-year period, while it would take treating 909 patients to prevent one case for the healthiest group.

Lifestyle scores were calculated based on [body mass index](#), frequency of cigarette and alcohol use, physical activity, and adherence to a high-quality diet.

"Our results show that aspirin can proportionally lower the markedly elevated risk in those with multiple [risk factors](#) for colorectal cancer," said Daniel Sikavi, MD, lead author of the paper and a gastroenterologist at MGH.

"In contrast, those with a healthier lifestyle have a lower baseline risk of colorectal cancer, and, therefore, their benefit from aspirin was still evident, albeit less pronounced."

One outcome of the study could be that "health care providers might more strongly consider recommending aspirin to patients who have less [healthy lifestyles](#)," said co-senior author Long H. Nguyen, MD, MS, a physician investigator in the Clinical and Translational Epidemiology Unit and Division of Gastroenterology at MGH and a Chen Institute Department of Medicine Transformative Scholar at MGH.

While the study included those who took regular standard-dose (325 mg)

aspirin two times a week in the regular-aspirin using category, Sikavi noted that "based on prior studies, the best evidence supports daily low-dose (81 mg) aspirin for prevention."

Previous studies have found evidence to suggest aspirin can reduce the production of pro-inflammatory proteins, known as prostaglandins, that can promote the development of cancer. Aspirin may also block signaling pathways that cause cells to grow out of control, influence the [immune response](#) against cancer cells, and block the development of blood vessels that supply nutrients to [cancer cells](#).

"Aspirin likely prevents colorectal cancer through multiple mechanisms," Chan said.

The study did not assess potential side effects of daily aspirin use, such as bleeding. In addition, while the study tried to control for a wide range of risk factors for [colorectal cancer](#), in comparing non-aspirin and [aspirin](#)-taking groups with the same level of risk factors, because this was an observational study, it is possible there may have been additional factors that influenced the findings.

**More information:** Aspirin Use and Incidence of Colorectal Cancer According to Lifestyle Risk, *JAMA Oncology* (2024). [DOI: 10.1001/jamaoncol.2024.2503](#)

Provided by Mass General Brigham

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