

# Cancer and aspirin – Aspirin as Cancer Prevention Pill Still a Long Way Off

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For their study, American Cancer Society researchers led by Eric J. Jacobs, PhD, addressed the potential effect of using adult–strength aspirin on overall cancer risk. A large study published by Harvard University researchers in 2005 found that taking a low–dose aspirin (about 100 mg) every other day did not lower risk of any cancer, suggesting that higher doses may be required to help prevent cancer. Adult–strength aspirin has been associated with reduced risk of colorectal cancer in previous studies, but this new study is the first to examine the relationship between long–term daily use of adult–strength aspirin and overall risk of cancer. Aspirin use was determined by a questionnaire.

During 12 years of follow up, nearly 18,000 men and women in the cohort were diagnosed with cancer. Those who reported daily use of adult–strength aspirin for at least five years had an approximately 15 percent relative reduction in overall cancer risk. The decrease was not statistically significant in women. The researchers looked at specific cancer sites and found men who used aspirin daily had a 20 percent lower risk of prostate cancer and that men and women who used aspirin had a 30 percent reduction in the risk of colorectal cancer. Aspirin use had no effect on the risk of other cancers studied: lung cancer, bladder cancer, melanoma, leukemia, non–Hodgkin lymphoma, pancreatic cancer, and kidney cancer. The researchers also found aspirin use for less than five years was not associated with decreased cancer risk.

?The American Cancer Society does not recommend using aspirin to prevent cancer because aspirin can cause serious gastrointestinal bleeding,? said Dr. Jacobs. ?Recommendations for aspirin use should continue to be based on prevention of heart disease and stroke, not cancer. However if further research confirms that daily adult–strength aspirin can meaningfully reduce cancer risk, future recommendations could take cancer prevention into account when deciding on the best dose for people who already need to take aspirin to prevent cardiovascular disease.?

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Article: Jacobs EJ, Thun MJ, Bain EB, Rodriguez C, Henley SJ, Calle EE. A Large Cohort Study of Long-Term Daily Use of Adult-Strength Aspirin and Cancer Incidence. J Natl Cancer Inst 2007; 99: 608–615

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[http://www.cancer.org/docroot/NWS/content/NWS\\_1\\_1x\\_Long-term\\_Aspirin\\_Use\\_Linked\\_to\\_Lower\\_Cancer\\_Risk.a](http://www.cancer.org/docroot/NWS/content/NWS_1_1x_Long-term_Aspirin_Use_Linked_to_Lower_Cancer_Risk.a)

Long-term Aspirin Use Linked to Lower Cancer Risk  
But Aspirin as Cancer Prevention Pill Still a Long Way Off  
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Summary: A large analysis by American Cancer Society researchers suggests that daily long-term use of adult-strength aspirin may reduce cancer risk by about 15% in both men and women. But don't start popping pills yet. Aspirin can cause serious side effects, and the evidence for cancer prevention isn't strong enough yet to justify a recommendation, the researchers caution.

Why it's important: More than 1 million people get cancer each year in the US. Although modern treatments can help many people with cancer live long, productive lives, finding ways to keep people from getting cancer in the first place is an important avenue of research. Aspirin is inexpensive and widely available; if it worked to prevent cancer, it might have a significant impact on the toll this disease takes.

What's already known: Daily aspirin use is often recommended for preventing heart disease and stroke in people at high risk of these problems. The aspirin-cancer link has been widely studied, but researchers have not been able to come to any firm conclusion about whether it is useful for cancer prevention. In animals, aspirin inhibits the development of many types of cancer, including colorectal, breast, prostate, lung, bladder, and skin. Studies on people have been harder to interpret. Some have shown that aspirin can reduce the risk of colorectal cancer and polyps (growths that can lead to cancer). Others have linked aspirin use to lower risk of stomach and esophageal cancer, as well as breast, prostate, and lung cancer. Still others have found no effect on cancer at all.

But these studies were not uniform in their design; important factors like the dose of aspirin, how often it was taken, and how long people used it were not the same. Also, most studies in people have been observational, meaning the researchers just looked at the participants' reports of aspirin use. More accurate, reliable information can be gathered from randomized controlled studies that compare groups of people randomly assigned to use either aspirin or a placebo.

How this study was done: Because many previous studies had looked at low doses of aspirin (80–150 mg) and brief periods of usage (a few years),

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American Cancer Society epidemiologists focused on long-term use of adult-dose (325 mg or more) aspirin. They compared cancer rates and aspirin use in nearly 70,000 men and more than 76,000 women who were taking part in a large study of lifestyle and cancer called the Cancer Prevention Study II Nutrition Cohort. Participants answered periodic questionnaires between 1992 and 2003 that included information on aspirin use. The findings were published in the Journal of the National Cancer Institute.

What was found:

Overall cancer rates were about 15% lower in people who used adult-dose aspirin daily for 5 years or longer, compared to people who used no aspirin. However, the difference was only statistically significant for men. T

hat means in women, the lower risk could have been due to chance rather than linked to aspirin use. When the researchers looked at specific cancers, they found a 30% lower risk of colorectal cancer and a 20% lower risk of prostate cancer, both of which were statistically significant.

Breast cancer risk was about 15% lower in women who took aspirin, but this decline also was not statistically significant and may have been due to chance.

Aspirin use was not linked to an effect on other cancers examined (lung, bladder, pancreatic, kidney, melanoma, leukemia, and non-Hodgkin lymphoma).

People who took aspirin less frequently or for less than 5 years did not have a lower risk of cancer.

The bottom line: Although the findings are tantalizing, they are not strong enough to warrant recommending aspirin for cancer prevention, the researchers say. Aspirin can cause serious stomach bleeding (among other side effects), and the risk of side effects increases with higher doses.

"Recommendations for aspirin use should continue to be based on prevention of heart disease and stroke, not cancer," says Eric Jacobs, PhD, lead author of the ACS study. "However, if further research confirms that daily adult-strength aspirin can meaningfully reduce cancer risk, future recommendations could take cancer prevention into account when deciding on the best dose for people who already need to take aspirin to prevent cardiovascular disease."

Jacobs and his colleagues say a large randomized controlled trial that lasts at least 10 years would be needed to determine whether adult-dose aspirin can prevent cancer. But because of the time and expense that would be involved in such a study, they say more large observational studies must first confirm the potential for aspirin to reduce cancer risk before it could be justified.

Citation: "A Large Cohort Study of Long-Term Daily Use of Adult-Strength Aspirin and Cancer Incidence" Published in the April, 18, 2007 Journal of the National Cancer Institute (Vol. 99, No. 8: 608-615). First author: Eric J. Jacobs, PhD, American Cancer Society.

