Accumulating evidence suggests that aspirin could decrease the risk of a cancer diagnosis or the chance of death from commonly diagnosed cancers. However, studies and clinical trials have been mixed, and do the benefits outweigh the risks of gastrointestinal bleeding and peptic ulcers?

While some individuals already take a daily aspirin to reduce the risk of cardiovascular events such as a heart attack or stroke, accumulating evidence also suggests that aspirin and other non-steroidal anti-inflammatory drugs (NSAIDs) could decrease the risk of a cancer diagnosis or the chance of death from commonly diagnosed cancers. However, studies and clinical trials have been mixed, and many experts believe that any potential cancer prevention benefits of aspirin don’t outweigh the risks of gastrointestinal bleeding and peptic ulcers, particularly in older individuals. Image © Shane Maritch/Shutterstock.com
In a new study, researchers have identified two relatively uncommon genetic variants that may increase the risk of colorectal cancer in regular aspirin/NSAID users. Overall, regular use of aspirin or NSAIDs is associated with a 31% reduced risk of colorectal cancer. However, in the current study, it was found that there was a higher risk of colorectal cancer among regular aspirin users with the rare “TA” or “AA” genotypes compared with those who did not harbor either of these genotypes (35% vs 29%).[1] Images © Sebastian Kaulitzki, Volt Collection/Shutterstock.com
According to a 2012 study, a daily aspirin helped extend the lives of colorectal cancer patients whose cancer had a mutated PIK3CA gene. Patients with the mutation who used aspirin regularly after their initial diagnosis had an 82% reduced risk of death from colorectal cancer and a 40% reduced risk of death overall compared with patients who had the PIK3CA mutation but did not use aspirin on a regular basis. Patients who had a non-mutated PIK3CA gene did not benefit from aspirin use. Twenty-three of 90 patients who had PIK3CA-mutated tumors and did not use aspirin died within 5 years of diagnosis, while only 2 of 62 patients who did use regular aspirin died within the same time period (P
A 2014 study found that a daily aspirin may reduce the risk of developing pancreatic cancer. The results of the study showed that the risk for pancreatic cancer became lower over time with a steady intake of aspirin. Study participants who took aspirin for 3 to 5 years reduced their risk of pancreatic cancer by 48%, and those who took any type of aspirin (standard or low dose) for more than 20 years reduced their risk by 60%. Reduction of risk ranged from 39% for those who took low-dose aspirin for 6 years or less, to 60% for those who took low-dose aspirin for more than 10 years.[3]

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An observational study found that patients with chronic liver disease who used aspirin or another NSAID had a reduced risk of developing hepatocellular carcinoma (HCC) and a reduced risk of dying from their liver disease. Participants in the 2012 study who reported using both aspirin and a non-aspirin NSAID over the course of a year reduced their risk of developing HCC by 36% and their risk of death from chronic liver disease by 57% compared with those who did not use aspirin or NSAIDs. Regular users of aspirin (without the concurrent use of an NSAID) had a 49% reduced risk of HCC and a 50% reduced risk of death from their chronic liver disease.[4] Images © Sebastian Kaulitzki, eurobanks/Shutterstock.com
In a retrospective study, it was found that overweight and obese women with estrogen receptor–positive breast cancer may benefit from daily NSAIDs, such as aspirin. The results of the 2014 study showed a 52% lower recurrence rate of breast cancer in these women, even after controlling for the use of anti-inflammatory agents such as statins and omega-3 fatty acids. These patients also had a 28-month delay in the time to recurrence—NSAID users were disease-free for an average of 78.5 months compared with an average of 50.6 months for women who did not use NSAIDs.[5] Images © Sebastian Kaulitzki, Sherry Yates Young/Shutterstock.com
A 2012 study found that aspirin was associated with a reduced risk of prostate cancer-specific mortality in patients previously treated with prostatectomy or radiotherapy. The reduction of prostate cancer deaths was seen especially in men with high-risk disease (4% vs 19% at 10 years; P

Researchers in Denmark found that NSAID users were less likely to develop three types of skin cancer—basal cell carcinoma, squamous cell carcinoma, and malignant melanoma. The 2012 study
showed that those who filled more than two prescriptions for an NSAID had a 15% reduced risk of squamous cell carcinoma and a 13% reduced risk of malignant melanoma compared with those who filled two or less prescriptions. The risk was particularly lower for long-term NSAID users (≥ 7 years) and frequent users. While the risk of basal cell carcinoma was not reduced overall with NSAID use, the risk on sites other than the head and neck was reduced with long-term and frequent NSAID use.[7] Images © Vizual Studio, Jennifer Stone/Shutterstock.com

Aspirin’s effect on lung cancer is unclear, as compared with cancer at other sites. A 2007 prospective study looked at associations between the use of aspirin and the risk of lung cancer in participants from the Nurses’ Health Study. In women who used 1 or 2 tablets of aspirin per week, there was a 16% reduced risk of lung cancer; however, there was an increased risk of 55% for women who took 15 or more tablets per week compared with women who did not use aspirin regularly. The results were similar in both smokers and nonsmokers. The study authors concluded that this study did not provide any consistent evidence for the link between aspirin use and risk of lung cancer.[8] Images © bendao, James Steidl/Shutterstock.com
A 2014 National Cancer Institute study showed that women who take a daily aspirin may decrease their risk of ovarian cancer by 20%. For users of non-aspirin NSAIDs (at least once per week), there was a 10% reduced risk compared with less frequent users, though this was not statistically significant. The study included almost 8,000 women with ovarian cancer and nearly 12,000 healthy women. Acetaminophen was also evaluated in the study, but did not show an association with reduced risk of ovarian cancer. [9] Image (left) © Alexilus/ Shutterstock.com; (right) Ragesoss, Wikimedia Commons
A 2014 meta-analysis found that the use of NSAIDs did not appear to have any affect on the risk of brain tumors, though further studies are needed to confirm this. Ten previous studies (six case-control studies, three cohort studies, and one randomized controlled trial from 2003–2013) were included in this analysis. No differences were seen between NSAID users and non-users when analyses were stratified by gender and brain tumor subtype. In the cohort studies, however, there was a slightly increased risk of brain tumors among patients who used NSAIDs (relative risk = 1.32; 95% confidence interval, 1.06-1.64; P = .014).[10] Image (left) © Sebastian Kaulitzki/Shutterstock.com; (right) Sauligno, Wikimedia Commons

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