

# Use of Nsaids and Colorectal Cancer Mortality

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Inflammation has been shown to play a role in colorectal cancer incidence. Use of non-steroidal anti-inflammatory drugs (NSAIDs) is associated with a lower risk of colorectal cancer, particularly for longer-term use; this is also true for colorectal adenoma and recurrence of colorectal cancer. However, the effect of NSAID use on colorectal cancer mortality is less clear, and past studies of this question have mostly been limited to male populations and the use of aspirin.

Anna Coghill, Dr. Polly Newcomb, and additional collaborators from the Public Health Sciences Division addressed this question within a cohort of postmenopausal women from the Women's Health Initiative. 160,143 postmenopausal women who were enrolled in the WHI at ages 50-79 reported on their use of medications and other pertinent factors at study enrollment, and again three years later, including detailed data on duration and amount of use of both aspirin and non-aspirin NSAIDs. Cases of colorectal cancer were identified through annual medical updates and confirmed by medical record review. Data on subjects' survival were used to calculate hazard ratios (HRs), and account for potential confounders, using Cox regression.

After an average follow-up of 11 years, 2,119 cases of colorectal cancer were recorded, as well as 492 colorectal cancer deaths. 36% of colorectal cancer cases reported any use of NSAIDs at baseline. No association was observed between NSAID use at baseline and colorectal cancer mortality, but a lower risk of colorectal cancer mortality was observed in women who reported NSAID use both at baseline and three years later (HR: 0.72, 0.54-0.95).

Women who reported no NSAID use both at baseline and three years later were 45% more likely to die from colorectal cancer than women who reported use of NSAIDs at both time points (HR: 1.45, 95% CI 1.08-1.85). Aspirin, rather than non-aspirin NSAIDs, appeared to account for these associations. Importantly, longer duration of use was more strongly associated with a lower risk of colorectal cancer mortality. When researchers excluded women who died within a year of enrollment, this did not substantially change results, nor did exclusion of those diagnosed with colorectal cancer prior to year three.

Consistent use of NSAIDs, particularly aspirin, in postmenopausal women may prevent not only colorectal cancer incidence and recurrence, but also mortality. Authors propose several mechanisms

by which this may occur, related to the effects of NSAIDs on cyclooxygenase-2 (COX-2) expression. NSAIDs block COX-2 activity, which has been shown to influence inflammatory signaling and could play a role in colorectal neoplasia by altering apoptotic pathways and facilitating tumor metastasis and angiogenesis.

[Coghill AE, Phipps AI, Bavry AA, Wactawski-Wende J, Lane DS, Lacroix A, Newcomb PA.](#) 2012.

The Association between NSAID use and Colorectal Cancer Mortality: Results from the Women's Health Initiative. *Cancer Epidemiol Biomarkers Prev.* Epub ahead of print.



*Photo by Linsey Battan*

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