

Study finds marked benefits for cancer prevention with a higher intake of fatty fish

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A new research review published today will once again have people asking for a second helping of wild Alaskan salmon at the dinner table. While several other studies have recently challenged the long-held belief of the benefits of a diet high in omega-3 fatty acids, this new study led by Saint Luke's Mid America Heart Institute Cardiovascular Research Scientist James J. DiNicolantonio, PharmD, cites compelling evidence that eating the right kinds of fatty fish, in the right quantity, and prepared the right way, can in fact help prevent the body's development of adenocarcinomas, a common type of cancerous tumor. A high proportion of the cancers arising in the breast, prostate, pancreas, colon, and the rest of the gastrointestinal tracts are adenocarcinomas.

The review, titled "A Higher Dietary Ratio of Long-Chain Omega-3 to Total Omega-6 Fatty Acids for Prevention of COX-2-Dependent Adenocarcinomas," is being presented in the journal *Nutrition and Cancer*. An International Journal, published by Routledge. The authors first cite evidence that the recently-demonstrated ability of daily low-dose aspirin to decrease risk for adenocarcinomas is attributable to its ability to modestly decrease the activity of cyclooxygenase-2 (cox-2), an enzyme which contributes importantly to the genesis and progression of adenocarcinomas. They then propose that an ample dietary intake of omega-3 fats—the type prominent in fatty fish—could also be expected to oppose cox-2 activity, and thereby reduce risk for adenocarcinomas.

The authors emphasize that it is not only the amount of fish consumed daily, but also the nature of this fish, and how it is preserved or cooked, that can have a major impact on the potential of dietary fish to lower [cancer](#) risk. "An easy way to see the benefit of omega-3 is to look at Italy," Dr. DiNicolantonio said. "The staple oil used in cooking and as a salad dressing in Italy is olive oil, which is quite low in omega-6. Meanwhile, fish—high in

omega-3—is a staple food in the Italian diet, and this fish is rarely salt-preserved or fried. In Italian studies, subjects who consumed fish at least twice weekly as compared to those who ate fish less than once a week, were found to be at a significantly lower risk for a number of cancers, including ovarian, endometrial, pharyngeal, esophageal, gastric, colonic, rectal, and pancreatic."

The authors also focus on several recent studies in which regular consumption of fish oil is correlated with lower subsequent cancer risk. These studies have reported lower risks for colorectal, breast, and advanced [prostate cancer](#) in those taking such supplements. And a recent study from the University of Washington, which estimated total omega-3 intakes of its subjects from both [fish](#) and from supplements, found that a high omega-3 intake was associated with a 23 percent reduction in total cancer mortality. Indeed, mortality from all causes was significantly lower in those with higher omega-3 intakes. The authors also noted that cox-2 is significantly expressed in pre-malignant and early stage adenocarcinomas, but expression is sometimes lost as cancers mature. This may be why cox-2 inhibition (via increased omega-3 intake) seems to have greater potential for cancer prevention, than for cancer therapy.

More information: James J. DiNicolantonio, Mark F. McCarty, Subhankar Chatterjee, Carl J. Lavie & James H. O'Keefe, "A Higher Dietary Ratio of Long-Chain Omega-3 to Total Omega-6 Fatty Acids for Prevention of COX-2-Dependent Adenocarcinomas," *Nutrition and Cancer*, [DOI: 10.1080/01635581.2014.956262](https://doi.org/10.1080/01635581.2014.956262)

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