

Marine Omega-3 polyunsaturated fatty acid intake is associated with lower risk of MSI-high CRC

March 25 2015

High intake of marine ω -3 polyunsaturated fatty acids (PUFAs) is associated with lower risk of microsatellite instable (MSI) colorectal cancers (CRCs) but not microsatellite stable (MSS) CRCs, according to a new study published March 25 in the *JNCI: Journal of the National Cancer Institute*.

Both development of CRC and microsatellite instability (MSI) are associated with chronic inflammation. Marine ω -3 PUFAs have anti-inflammatory and antineoplastic activity, but the evidence for a role of marine ω -3 PUFAs in CRC has been inconsistent. To investigate the relationship between marine ω -3 PUFAs by MSI status, Mingyang Song, Ph.D., from the Departments of Nutrition and Epidemiology at the Harvard T.H. Chan School of Public Health in Boston, MA, and colleagues, analyzed data from 1125 CRC cases from the Nurses' Health Study and Health Professionals Follow-up Study. Although dietary ω -3 PUFA intake was not associated with CRC overall, high intake was associated with a lower risk of MSI-high tumors but not MSS tumors.

The authors conclude, "Our findings generate hypotheses for the potential anticancer activity of ω -3 PUFAs and may have clinical implications for the potential of using marine ω -3 PUFAs in prevention of CRC."

In an editorial, Asad Umar, D.V.M., Ph.D., Ellen Richmond, M.S.,

G.N.P.-BC., and Barnett S. Kramer, M.D., M.P.H., from the National Cancer Institute, in Rockville, MD, discuss the literature and the results from the accompanying study, raising cautionary notes about the interpretation of the findings. They point to the possibility of chance findings in data from the authors and other studies in which some associations have been in the opposite direction, but also speculate whether ω -3 PUFA levels or fish consumption may be surrogates of exposure to environmental carcinogens associated with marine-based foods in those situations. They conclude, "The role of marine omega-3 in colorectal cancer prevention is still unclear and remains elusive despite decades of effort."

More information: Marine ω -3 Polyunsaturated Fatty Acids and Risk of Colorectal Cancer According to Microsatellite Instability, [DOI: 10.1093/jnci/djv007](https://doi.org/10.1093/jnci/djv007)

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