

Abstract

Am J Clin Nutr. 2011 Jan;93(1):143-50.

Dietary omega-3 fatty acids and fish consumption and risk of type 2 diabetes.

Djoussé L, Gaziano JM, Buring JE, Lee IM.

Division of Aging and Preventive Medicine, Department of Medicine, Brigham and Women's Hospital and Harvard Medical School, Boston, MA, USA.

BACKGROUND: Although dietary omega-3 (n-3) fatty acids may confer some cardiovascular benefits, it is unclear whether these nutrients may also unfavorably affect risk of type 2 diabetes (T2D).

OBJECTIVE: We evaluated whether dietary omega-3 fatty acids and fish consumption were associated with increased risk of T2D.

DESIGN: This was a prospective study of 36,328 women (mean age: 54.6 y) who participated in the Women's Health Study and who were followed from 1992 to 2008. Incident T2D was self-reported and validated primarily through the collection of supplementary information from participants. Information on omega-3 and fish intakes was obtained by using a validated food-frequency questionnaire. We used Cox proportional hazard models to estimate adjusted relative risks.

RESULTS: During an average follow-up of 12.4 y, 2370 women developed T2D. Marine but not plant-based omega-3 fatty acids were positively associated with incident T2D. From the lowest to highest quintiles of marine omega-3 intake, the multivariable-adjusted hazard ratios (95% CIs) for T2D were 1.0 (referent), 1.17 (1.03, 1.33), 1.20 (1.05, 1.38), 1.46 (1.28, 1.66), and 1.44 (1.25, 1.65), respectively (P for trend < 0.0001). A similar association was observed with fish intake, but additional adjustment for docosahexaenoic acid led to the elimination of the association. The relation between marine omega-3 fatty acids and T2D was observed in hypertensive and nonhypertensive subjects and in women who reported infrequent fish consumption.

CONCLUSION: Our data suggest an increased risk of T2D with the intake of long-chain omega-3 fatty acids, especially with higher intakes (≥ 0.20 g omega-3/d or ≥ 2 servings of fish/d). The Women's Health Study was registered at clinicaltrials.gov as NCT00000479.

PMID: 20980491