

# Abstract

Am J Clin Nutr. 2011 Aug;94(2):520-6.

## **Omega-3 fatty acids and incident type 2 diabetes: the Singapore Chinese Health Study.**

Brostow DP, Odegaard AO, Koh WP, Duval S, Gross MD, Yuan JM, Pereira MA.

Division of Epidemiology and Community Health, University of Minnesota, Minneapolis, MN.

**BACKGROUND:** The role of omega-3 (n-3) fatty acids (FAs) in the development of type 2 diabetes is uncertain, especially with regard to any differential influence of  $\alpha$ -linolenic acid (ALA), eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA).

**OBJECTIVE:** The objective was to examine the association between total omega-3 FA, marine omega-3 (EPA, DHA), nonmarine omega-3 (ALA), and omega-6 (n-6) FAs and omega-6:omega-3 ratio and risk of type 2 diabetes in a Chinese population in Singapore.

**DESIGN:** The analysis included 43,176 Chinese men and women free of chronic disease, aged 45-74 y, in the Singapore Chinese Health Study. Baseline data collection occurred between 1993 and 1998, with follow-up interviews between 1999 and 2004. Cox regression models were used to examine the associations between FA intakes at baseline and risk of developing diabetes.

**RESULTS:** Increased intakes of total omega-3 FAs were inversely associated with diabetes incidence [hazard ratio (HR) for the fifth compared with the first quintile: 0.78; 95% CI: 0.65, 0.94; P for trend = 0.02]. Omega-3 FAs from marine sources were not associated with diabetes risk, whereas nonmarine omega-3 FA intake was strongly associated (HR for the fifth compared with the first quintile: 0.79; 95% CI: 0.67, 0.93; P for trend = 0.004). Omega-6 and omega-6:omega-3 ratio were not associated with incidence of type 2 diabetes.

**CONCLUSION:** Consumption of nonmarine sources (ALA) of omega-3 FAs is associated with a decreased risk of type 2 diabetes in Chinese Singaporeans.

PMID: 21593505