Abstract


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

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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 α-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.

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