Relation between dietary n-3 and n-6 fatty acids and clinically diagnosed dry eye syndrome in women.

Miljanović B, Trivedi KA, Dana MR, Gilbard JP, Buring JE, Schaumberg DA.
Division of Preventive Medicine, Brigham and Women's Hospital, Boston, MA 02215, USA.

Abstract

BACKGROUND: Dry eye syndrome (DES) is a prevalent condition, but information on risk or protective factors is lacking.

OBJECTIVE: We aimed to determine the association between the dietary intake and ratio of n-3 and n-6 fatty acids (FAs) and DES occurrence.

DESIGN: Of the 39876 female health professionals in the Women's Health Study (WHS), 32470 women aged 45-84 y who provided information on diet and DES were cross-sectionally studied. We assessed FA intakes by using a validated food-frequency questionnaire and assessed DES by using self-reports of clinically diagnosed cases. Of the sample, 1546 (4.7%) subjects reported DES. We used logistic regression models to estimate the odds ratios (ORs) and 95% CIs to describe the relation of FA intake with DES.

RESULTS: After adjustment for demographic factors, hormone therapy, and total fat intake, the OR for the highest versus the lowest quintile of n-3 FAs was 0.83 (95% CI: 0.70, 0.98; P for trend = 0.05). A higher ratio of n-6 to n-3 FA consumption was associated with a significantly increased risk of DES (OR: 2.51; 95% CI: 1.13, 5.58) for >15:1 versus <4:1 (P for trend = 0.01). In addition, tuna consumption [1 serving was 113 g (4 oz)] was inversely associated with DES (OR: 0.81; 95% CI: 0.66, 0.99 for 2-4 servings/wk; OR: 0.32; 95% CI: 0.13, 0.79 for 5-6 servings/wk versus < or =1 serving/wk; P for trend = 0.005).

CONCLUSIONS: These results suggest that a higher dietary intake of n-3 FAs is associated with a decreased incidence of DES in women. These findings are consistent with anecdotal clinical observations and postulated biological mechanisms.

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