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ORIGINAL RESEARCH COMMUNICATION

Relation between dietary n–3 and n–6 fatty acids and clinically diagnosed dry eye syndrome in women^{1,2,3}

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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 ≤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.

Key Words: Epidemiology • dry eye syndrome • diet • n–3 fatty acids • n–6 fatty acids • risk factors • women

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