

Abstract

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Longitudinal relationship between dietary omega-3 fatty acids and periodontal disease.

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OBJECTIVE: Fish oil has anti-inflammatory actions that may benefit periodontal health. We investigated the longitudinal relation between dietary omega-3 fatty acids (FAs), docosahexaenoic acid (DHA), and eicosapentaenoic acid (EPA) to periodontal disease in community-dwelling elderly.

METHODS: Fifty-five participants aged 74 y were randomly selected from a longitudinal interdisciplinary study of aging. Dietary intake data were obtained by a 3-d weighed food intake. The dietary intakes of energy, DHA, and EPA were calculated based on the Standard Food Composition Tables in Japan. Dental examinations were carried out at baseline and once a year for 5 y. The number of teeth with periodontal progression over 5 y per person was calculated as "periodontal disease events." Negative binomial regression analysis was conducted, which included DHA, EPA, and other covariates as independent variables to estimate the influence on periodontal disease events. Longitudinal data were analyzed for participants for whom data were available for 5 y (n=36).

RESULTS: Low DHA intake was significantly associated with more periodontal disease events.

The mean number of periodontal disease events for participants who consumed the lowest tertile of DHA was approximately 1.5 times larger (lowest tertile, incidence rate ratio 1.49, 95% confidence interval 1.01-2.21) than the reference group (highest tertile of DHA consumption), after simultaneously adjusting for possible confounders.

CONCLUSION: The findings suggest there may be an inverse, independent relation of dietary DHA intake to the progression of periodontal disease in older people.

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