

論文の内容の要旨

Fish, n-3 and n-6 polyunsaturated fatty acids intake and risk of breast cancer by estrogen and progesterone receptor status: The Japan Public Health Center-based Prospective Study

(日本人における魚、n-3、n-6 脂肪酸摂取と乳がんリスクに関する研究：ホルモン受容体有無による比較 (多目的コホート研究) )

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**Objective:** Limited and inconsistent studies exist on the association between the intake of fish, n-3 polyunsaturated fatty acids (PUFA), and n-6 PUFA and breast cancer. Fish and n-3 PUFA support various body functions and are thought to reduce the carcinogenesis risk while n-6 PUFA may have a positive association with cancer risk. The association between intake of fish, n-3 PUFA, eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), docosapentaenoic acid (DPA), alpha linolenic acid (ALA), n-6 PUFA, and n-6/n-3 ratio and breast cancer in Japan with further analyses on estrogen (ER) and progesterone receptor (PR) status were examined.

**Methods:** A total of 38,234 Japanese women aged 45-74 years from the Japan Public Health Center-based prospective Study (JPHC) were investigated, and during 14.1 years of follow-up time, 556 breast cancer cases were newly diagnosed. Hazard ratios (HRs) and 95% confidence intervals (95% CIs) were calculated by multivariable Cox proportional hazard models with age as the time scale.

**Results:** Breast cancer risk was not associated with the intake of total fish, n-3 PUFA, and n-6 PUFA when analyzed in totality through multivariable Cox proportional hazards regression models with age as the time-scale. Intake of total n-6 was positively associated with the development of ER+PR+ tumors [multivariable adjusted HR<sub>Q4 vs Q1</sub>=2.94; p-value=0.02 (95% CI: 1.26-6.89; ptrend =0.02)].

**Conclusion:** While the overall association between the intake of total fish, n-3 PUFA, and n-6 PUFA and breast cancer risk is null, for ER+PR+ tumors, a positive association was seen between n-6 intake and breast cancer.

**Key words:** breast cancer, fatty acids, diet, fish, receptor