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ARTICLES

## Fish and *n*-3 Polyunsaturated Fatty Acid Intake and Depressive Symptoms: Ryukyus Child Health Study

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**BACKGROUND** Epidemiologic evidence on the role of fish and long-chain *n*-3 polyunsaturated fatty acid intake on depression during adolescence is sparse.

**OBJECTIVE** We examined the association between fish, eicosapentaenoic acid (EPA), and docosahexaenoic acid (DHA) intake and depressive symptoms in a group of adolescents.

**SUBJECTS AND METHOD** This cross-sectional study, conducted in all public junior high schools in Naha City and Nago City, Okinawa, Japan, included 3067 boys and 3450 girls aged 12 to 15 years (52.3% of the eligible sample). Dietary intake was assessed by using a validated, self-administered diet-history questionnaire. Depressive symptoms were defined as present when participants had a Center for Epidemiologic Studies Depression scale score of  $\geq 16$ .

**RESULTS** The prevalence of depressive symptoms was 22.5% for boys and 31.2% for girls. For boys, fish intake was inversely associated with depressive symptoms (adjusted odds ratio [OR] for depressive symptoms in the highest [compared with the lowest] quintile of intake: 0.73 [95% confidence interval (CI): 0.55–0.97]; *P* for trend = .04). EPA intake showed an inverse association with depressive symptoms (OR: 0.71 [95% CI: 0.54–0.94]; *P* = .04). DHA intake also showed a similar inverse, albeit nonsignificant, association (OR: 0.79 [95% CI: 0.59–1.05]; *P* = .11). In addition, intake of EPA plus DHA was inversely associated with depressive symptoms (OR: 0.72 [95% CI: 0.55–0.96]; *P* = .08). Conversely, no such associations were observed among girls.

**CONCLUSIONS** Higher intake of fish, EPA, and DHA was independently associated with a lower prevalence of depressive symptoms in early male, but not female, adolescents.