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Higher Intake of omega-3 Polyunsaturated Fatty Acids Is Associated With a Decreased Risk of a First Clinical Diagnosis of Central Nervous System Demyelination: Results From the Ausimmune Study

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Abstract

Background: There is contradictory evidence for a role of dietary fat in risk of multiple sclerosis (MS).

Objectives: To examine the association between usual fat intake (total, saturated, monounsaturated (MUFA), polyunsaturated (PUFA), omega-3 and omega-6) and risk of a first clinical diagnosis of CNS demyelination (FCD).

Methods: Multi-centre incident case-control study in four regions of Australia during 2003-2006. Cases were aged 18-59 years and had a FCD; controls were matched to a case on age, sex and location. Dietary data were collected using a validated food frequency questionnaire.

Results: In 267 cases and 517 controls with dietary data, higher intake (per g/day) of omega-3 PUFA (adjusted odds ratio, AOR=0.61 (95% CI 0.40-0.93)), and particularly that derived from fish (AOR=0.54 (95% CI 0.31-0.93)) rather than from plants (AOR=0.75 (95% CI 0.39-1.43)) was associated with a decreased risk of FCD. Total fat intake and intake of other types of fat were not associated with FCD risk.

Conclusions: There was a significant decrease in FCD risk with higher intake of omega-3 PUFA, particularly that originating from fish. There was no evidence to indicate that the intake of other types of dietary fat or fat quantity in the previous 12 months was associated with an altered risk of FCD.

Keywords: Multiple sclerosis; diet; fat; first demyelinating event; monounsaturated fat; omega-3 fatty acids; polyunsaturated fat; saturated fat.

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