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Fat-based dietary patterns are not associated with risk of a first clinical diagnosis of central nervous system demyelination in Australian adults

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Dietary fat type has been suggested as a risk factor for development of multiple sclerosis (MS)[1]; however, the evidence is inconclusive. We aimed to test associations between dietary patterns correlated with intake of saturated fat (SFA), polyunsaturated fat (PUFA), monounsaturated fat (MUFA), along with the Dietary Approaches to Stop Hypertension (DASH) score, and risk of a first clinical diagnosis of central nervous system demyelination (FCD), a common precursor to the diagnosis of MS. We used data from the Ausimmune Study, a multicentre Australian case-control study of people with an FCD, aged 18–59 years. Using dietary intake data from a 101-item food frequency questionnaire[2], dietary patterns characterised by fat type (DP1; DP2) were generated through reduced rank regression with SFA, PUFA and MUFA as response variables. DASH scores were calculated. Logistic regression with full propensity score matching (matched on age, sex, study region, education, smoking history, history of infectious mononucleosis, deseasonalised serum 25-hydroxyvitamin D concentration, total energy intake, dietary misreporting) was used to test associations between dietary patterns (DP1, DP2, DASH) and FCD (cases = 259, controls = 497). Interactions between dietary exposures and sex were explored. DP1 was positively correlated with all fats and was characterised by high positive factor loadings for whole milk, processed red meat, and high-fat cheese, and high negative factor loadings for skimmed milk and fruits. DP2 was negatively correlated with SFA, but positively correlated with PUFA and MUFA, and was characterised by high positive factor loadings for margarine, nuts, and wholemeal bread, and high negative factor loadings for butter, whole milk, and sugar, preserves and confectionary. There were no associations between DP1, DP2 or DASH with FCD. These dietary patterns, characterised by fat type, showed no association with risk of FCD. To generate robust evidence on the role of dietary fat in MS onset, dietary patterns characterised by fat type could be explored in other population groups.

References

1. Swank RL (1950) *Am J Med Sci* **220**, 421–430.
2. Ireland P, Jolley D, Giles G *et al.* (1994) *Asia Pac J Clin Nutr* **3**, 19–31.

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