

Proceedings of the Nutrition Society

Abstracts of Original Communications Errata

A Scientific Meeting was held at the University of Sheffield on 10–12 July 2001, when the following paper was presented.

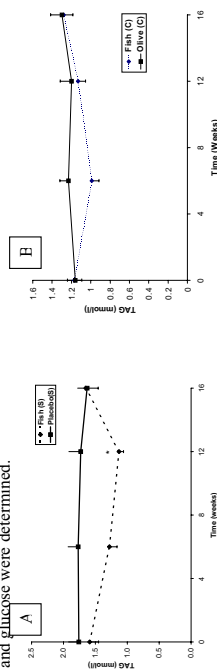
The rest of the abstracts for this meeting have been published in Volume 60, OCB.

All abstracts are prepared as camera-ready material.

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Hypotriacylglycerolaemic effects of fish oils in British Sikhs and Caucasians. By J.A.LOVEGROVE¹, S.V.M.LESAUVAE¹, S.S.LOVEGROVE¹, N.SAINI¹, B.A.GRIFFIN², A.M. MINIHANE¹ and C.M.WILLIAM¹, ¹School of Food Biosciences, University of Reading, Whiteknights, Reading RG6 6A. UK. ²School of Biological Science, University of Surrey, Guildford, Surrey GU2 5XH. UK.

British Asians have lipid abnormalities indicative of an atherogenic lipoprotein phenotype (ALP). This includes high plasma triacylglycerol, low plasma HDL cholesterol and high plasma small dense LDL (LDL 3 the highly atherogenic lipoprotein) levels and insulin resistance (Laws et al, 1994). It has been reported by our group that the dietary intake of long chain *n*-3 PUFA (eicosapentaenoic acid and docosahexaenoic acid) were significantly lower in Sikhs compared with Caucasians living in the UK (Lesauvage et al, 2001). Since raised TAG are thought to be the primary abnormality of an ALP we have speculated that the plasma lipid profile of Sikhs may benefit from an increased dietary long chain *n*-3 PUFA intake. This study investigated the effect of a daily 2.0g eicosapentaenoic acid and docosahexaenoic acid (4.0g fish oil) supplement (or placebo, 4.0g olive oil) for 12 weeks on plasma lipids in two ethnic groups. The Caucasian (n=44) and Sikh subjects (n=40) were matched for age (mean±SD: 47±11 vs 49±12 years respectively) and BMI (25.8±3.3 vs 26.0±3.1 Kg/m² respectively). The Sikh group had significantly (P<0.05) higher plasma triacylglycerol (TAG) levels at baseline compared with the Caucasians (1.67±0.99 vs 1.17±0.52 mmol/l respectively) and a significantly (P<0.01) higher number of the Sikh group had LDL 3 >40% total LDL cholesterol compared with the Caucasians at baseline (29% vs 11% respectively). The fish oil and placebo groups were randomly assigned and stratified for TAG, BMI, sex and age. Subjects took the supplement daily for 12 weeks. Fasting blood samples were taken at 0, 6, 12 and 16 weeks and plasma TAG, total, HDL and LDL cholesterol, non-esterified fatty acids and glucose were determined.



A significantly lower plasma TAG concentration was observed in the Sikhs on fish oil compared with placebo at 12 weeks (1.13±0.48 vs 1.73±1.15 mmol/l respectively, P=0.04) as shown in the figure A. The hypo-triacylglycerolaemic effect of fish oil was significantly greater in the Sikhs (figure A) compared with the Caucasians (figure B) (19% vs 3% reduction respectively, P=0.03). These results illustrate that Sikhs are very responsive to the TAG lowering effects of long chain *n*-3 PUFA supplementation and may benefit from additional dietary long chain *n*-3 PUFA intake.

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Laws A, Jeppesen JL, Maheux PC, Schaaf P, Chen Y-D I & Reaven GM (1994) *Arteriosclerosis and Thrombosis* **14**, 917-922.
 Lesauvage SVM, Lovegrove SS, Saini N, Minihane AM, Williams CM & Lovegrove JA (2001) *1st International Congress of Nutrition, Vienna* (In the Press).