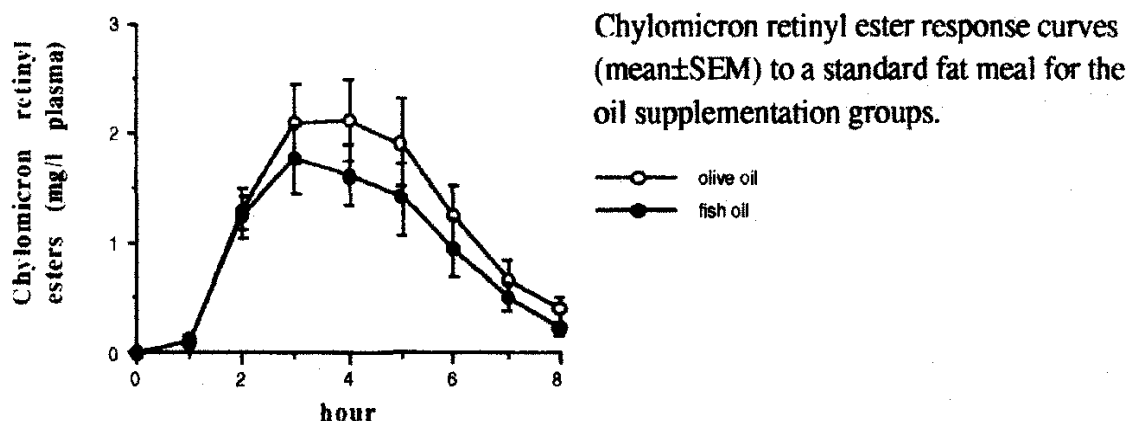


MODERATE FISH OIL INTAKE IMPROVES LIPAEMIC RESPONSE TO A STANDARD FAT MEAL: DOUBLE-BLIND STUDY ON 25 HEALTHY MEN

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We have shown (Brown et al. in press) that a modest intake of fish oil (FO, 5 g/d) for 6 weeks can reduce fasting plasma triacylglyceride (TAG). The aim of this study was to test if conditioning with a reasonable dose of fish oil will reduce postprandial lipaemia.

Thirty-two healthy men, recruited from Sydney University, were matched according to fasting plasma TAG and allocated to either 6 weeks of FO or olive oil (OO) supplements (5 g/d). Seven individuals (five on FO, two on OO) failed to complete the study. After a 12 h overnight fast, the 25 remaining subjects were given a cream/yogurt/peanut oil blend. This standard test meal consisted of 89% of energy as fat (0.73 g fat/kg body weight, P/S=0.4) and 5.5% as each protein and carbohydrate, while Vitamin A (1430 IU/kg body weight) was included to endogenously label the chylomicrons. Venous blood samples were obtained before the test meal (0 h) and hourly for 8 h. Chylomicrons were separated by ultracentrifugation, plasma TAG determined enzymatically and retinyl esters (RE) measured by HPLC.



Postprandially, the FO group exhibited mean total and chylomicron TAG concentrations significantly ($P<0.05$) less than that of the OO group. Both the FO and OO groups had similar rises in chylomicron RE over the first 2 h but after this time the response of the FO group was consistently and significantly ($P<0.05$) less than the response to OO (Figure).

Our results suggest that improvement in lipaemic response can be achieved at a much lower intake of FO than previously reported. Chylomicron clearance was enhanced in healthy men after 6 weeks of conditioning with FO relative to OO (5 g/d). In the light of the hypothesis that atherosclerosis may, in part, be a postprandial phenomenon, these observations may help to explain the inverse relationship between long-term fish consumption and mortality from coronary heart disease.

BROWN, A.J., ROBERTS, D.C.K., PRITCHARD, J.E. and TRUSWELL, A.S. (in press)
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