

P007 Meal fatty acids influence postprandial vascular reactivity
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Chronic fish oil intervention had been shown to have a positive impact on vascular reactivity. Although increased meal total- and saturated-fat load is thought to be associated with a loss of postprandial vascular reactivity, the impact of meal long chain n-3 PUFA composition on vascular reactivity in the postprandial phase is unknown, and is the subject of the current investigation. In a cross-over design, 25 men received either a placebo meal (40 g of mixed fat) or a fish oil meal (31 g mixed fat and 9 g fish oil) on 2 occasions. Vascular reactivity was measured at baseline (0h) and 4h after the meal by Laser Doppler Iontophoresis and blood samples were collected for plasma triacylglycerol and total nitrite analysis. In cell culture experiments, endothelial nitric oxide synthase (eNOS) gene expression was determined in endothelial cells after incubation with triacylglycerol-rich lipoproteins (TRLs) derived from the 4h plasma samples. Compared with baseline, sodium nitroprusside (endothelial independent vasodilator) induced reactivity ($P=0.03$) and plasma nitrite levels ($P=0.001$) were increased 4h after the fish oil meal. Postprandial fish oil enriched TRLs ($S_i > 400$) increased eNOS gene expression compared with TRLs enriched in the placebo oil ($P=0.034$). In conclusion, fish oils significantly increase postprandial vascular tone.