Supplementary Figures



Supplementary Figure 1: In APOE4 carriers (black) and non-carriers (white), ARA concentrations in different plasma lipid compartments were compared pre- and post-supplementation. CE: There was a genotype effect (p = 0.0434) where the ARA concentration in CE was higher in APOE4 carriers compared to non-carriers. CE: There was a diet effect (p < 0.0001) where the EPA concentration was higher post-supplementation than pre-supplementation. There was no genotype effect or genotype by diet effect in the other lipid compartments. Data are presented as the mean ± SEM. The Mann–Whitney test was used to compare the ARA medians between APOE4 carriers and non-carriers. The Wilcoxon test was used to compare the ARA medians pre- and post-supplementation. APOE4 – Epsilon 4 allele of the apolipoprotein E gene; CE – Cholesteryl ester; ARA – arachidonic acid; FFA – Free fatty acid; LPC – Lysophosphatidylcholine; TG – Triglyceride



Supplementary figure 2 ΔARA concentrations were compared in different plasma lipid compartments based on the APOE4 genotype and BMI. Low BMI: n = 11 non-carriers; n = 14 APOE4 carriers. High BMI: n = 14 non-carriers, n = 11 APOE4 carriers. LPC: There was no genotype by diet, nor a genotype or a diet effect in ΔARA concentrations in any plasma lipid compartment. Data are presented as the mean ± SEM. The Mann–Whitney test was used to compare ΔARA medians in TG. 2-way ANOVA was used to compare ΔARA means in CE. APOE4 – Epsilon 4 allele of the apolipoprotein E gene; BMI – Body mass index; CE – Cholesteryl ester; ARA – arachidonic acid; FFA – Free fatty acid; LPC – Lysophosphatidylcholine; TG – Triglyceride

Appendix:

Additional methodological information on the plasma lipid separation and analysis section

To allow for quantification of the different fatty acids, a precise quantity of heptadecanoic acid esterified as TG, CE, LPC and PE was added to the plasma as internal standards: 0.0615 mg of TG (Lot no. T-155-AU14-B, NU-CHEK PREP, Inc.); 0.117 mg of CE (Lot no. CH-816-S12-B, NU-CHEK PREP, Inc.), 0.0045 mg of LPC (Lot no. 855676P-25MG-B-033, Avanti polar lipids, Inc.); and 0.0054 mg of PE (Lot no. 830756–01–020, Avanti polar lipids, INC). A specific quantification of pentadecanoic acid nonesterified (FFA) and esterified as PC were added as internal standards as well: 0.0105 mg of FFA (Lot no. SHBL3424, Sigma Life Sciences) and 0.084 mg of PC (Lot no. 850350P-500MG-A-038, Avanti polar lipids, Inc.).

Prior to the loading of the samples, the thin layer chromatography plates were washed using chloroform:methanol (1:1 v/v), dried and activated by heating at 110 °C for one hour.