Fish intake, erythrocyte n-3 fatty acid status and metabolic health in Danish adolescent girls and boys - DTU Orbit (16/12/2018)

Fish intake, erythrocyte n-3 fatty acid status and metabolic health in Danish adolescent girls and boys

Marine n-3 long-chain PUFA (n-3 LCPUFA) may have a beneficial effect on several aspects of the metabolic syndrome (dyslipidaemia, insulin resistance, hypertension and abdominal obesity). The metabolic syndrome is increasing in prevalence during adolescence, but only few studies have investigated the effects of n-3 LCPUFA in adolescence. The present study examines associations between fish intake (assessed by a 7 d pre-coded food diary), erythrocyte (RBC) DHA status (analysed by GC) and metabolic syndrome measures (anthropometry, blood pressure and plasma lipids, insulin and glucose) in 109 17-year-old children from the Copenhagen Birth Cohort Study. Of the children, 8% were overweight or obese and few showed signs of the metabolic syndrome, but all the metabolic syndrome variables were correlated. Median fish intake was 10·7 (interquartile range 3·6–21·2) g/d. Boys tended to have a higher fish intake (P¼0·052), but girls had significantly higher RBC levels of DHA (P¼0·001). Sex and fish intake explained 37% of the variance in RBC-DHA (P¼0·001). After adjusting for confounders, high DHA status was found to be significantly correlated with higher systolic blood pressure (P¼0·014) and increased fasting insulin (P¼0·018), but no adverse association was observed with the mean metabolic syndrome z-score. Overall, the present study showed the expected association between fish intake and RBC-DHA, which in contrast to our expectations tended to be associated with a poorer metabolic profile. Whether these results reflect the physiological function of n-3 LCPUFA, lifestyle factors associated with fish intake in Denmark, or mere chance remains to be investigated.

General information
State: Published
Organisations: Center for Biological Sequence Analysis, Department of Systems Biology, University of Copenhagen
Pages: 697-704
Publication date: 2012
Peer-reviewed: Yes

Publication information
Journal: British Journal of Nutrition
Volume: 107
ISSN (Print): 0007-1145
Ratings:
BFI (2018): BFI-level 1
Web of Science (2018): Indexed yes
BFI (2017): BFI-level 1
Scopus rating (2017): CiteScore 3.65 SJR 1.756 SNIP 1.555
Web of Science (2017): Impact factor 4.586
Web of Science (2017): Indexed yes
BFI (2016): BFI-level 1
Scopus rating (2016): CiteScore 3.46 SJR 2.055 SNIP 1.535
Web of Science (2016): Impact factor 4.844
Web of Science (2016): Indexed yes
BFI (2015): BFI-level 1
Scopus rating (2015): CiteScore 3.52 SJR 1.583 SNIP 1.442
Web of Science (2015): Impact factor 4.051
Web of Science (2015): Indexed yes
BFI (2014): BFI-level 1
Scopus rating (2014): CiteScore 3.18 SJR 1.532 SNIP 1.273
Web of Science (2014): Indexed yes
BFI (2013): BFI-level 1
Scopus rating (2013): CiteScore 3.61 SJR 2.746 SNIP 2.479
Web of Science (2013): Impact factor 3.861
ISI indexed (2013): ISI indexed yes
Web of Science (2013): Indexed yes
BFI (2012): BFI-level 1
Scopus rating (2012): CiteScore 3.12 SJR 2.308 SNIP 2.427
Web of Science (2012): Impact factor 5.5
ISI indexed (2012): ISI indexed yes