EPA and DHA Intakes in UK Adults According to Age, Gender and Income

R. A. Gibbs | D. I. Givens

1. Background

- A recent study estimated total mean intakes of EPA + DHA in UK adults who do not eat oil-rich fish (~70%) to be approx 100mg/d, 45mg/d of which is from animal-derived foods (Givens and Gibbs, 2006). This is clearly sub-optimal relative to UK target intakes of 450mg/d (SACN/COT, 2004).
- Currently there is no indication of potential variation in intakes due to age, gender and socioeconomic differences.

**Objectives**

- To investigate trends in intakes of EPA+DHA in UK males and females across:
  - Different age groups within the main population
  - Different age groups within a low income sub-group

2. Materials and Methods

- The key sources of food intake data were the UK 2002 National Diet and Nutrition Survey (NDNS, males n=766 females n=958) and the UK 2007 Low Income Diet and Nutrition Survey (LIDNS, males n=946, females n=1850).
- Raw diet diary data from NDNS were used to calculate oil-rich fish intakes by age and gender excluding the contribution from canned tuna (as identified by SACN/COT, 2004). The LIDNS already accounted for this.
- Mean intakes of fish and animal-derived foods (g/week) were coupled with known EPA and DHA concentrations in the foods (see Table 1).
- Contributions of each food type and total EPA and DHA intake for main population and low income sub-group were estimated

3. Results – National Population

- **Mean EPA + DHA intake** for males is 259mg/d and 226mg/d for females
- **Figure 1** shows % numbers of consumers of oil-rich fish. Excluding canned tuna from the oil-rich fish category results in decreased numbers of oil-rich fish consumers, both males and females across all groups. The greatest reduction (25%) is seen in 19-24 year old females. 19-24 years males category has the fewest consumers (4%).
- **Figure 2** shows that EPA + DHA intakes increase with age in both males and females. Intakes in males appear to be slightly higher than for females particularly in 25-34 and 35-49 years olds.

4. Results – Low Income Subgroup

- **Mean EPA + DHA intake** for males is 206mg/d and 200mg/d for females. Percentage consumers of oil-rich fish increase across age groups in LIDNS, overall 13% of males and 16% of females consume oil-rich fish.
- **Figure 3** indicates intakes of EPA and DHA between males and females and across age groups are more variable than those in the main population.

5. Conclusions

- Differing survey methods for NDNS and LIDNS do not allow full comparison of intakes in each group, but there is a trend towards slightly lower intakes in the lower income group. This is related to lower mean oil-rich fish consumption in LIDNS.
- In the national population and low income sub-group, mean intakes of EPA+DHA are sub-optimal in both males and females across all age groups.
- A trend towards higher intakes in older adults is apparent in the national population.
- If young adults in the UK do not change their eating habits and increase intakes of VLC n-3 PUFA through oil-rich fish consumption or by other means, EPA + DHA intakes are likely to remain low in later life thus compromising potential health benefits derived from optimal intakes of these fatty acids.

**References**

2. SACN/COT. Scientific Advisory Committee on Nutrition/Committee on Toxicity (2004). Advice on Fish Consumption. UK.

**Acknowledgements**

- We gratefully acknowledge ‘Lipigene’, a European Union Sixth Framework Project for funding this work.
- ISFPA New Investigator Award

**Contact Information**

- Nutritional Sciences Research Unit, University of Reading, Earley Gate, Reading, RG6 6AR
- Email Rachael Gibbs: r.a.gibbs@reading.ac.uk
- http://www.aopd.reading.ac.uk/Agriculture/ASRG/index.htm