



UCD Institute of Food & Health

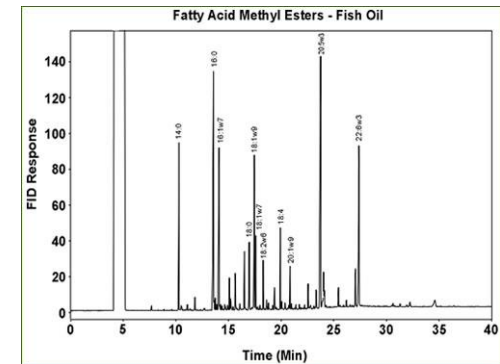
Fatty acids: the health implications

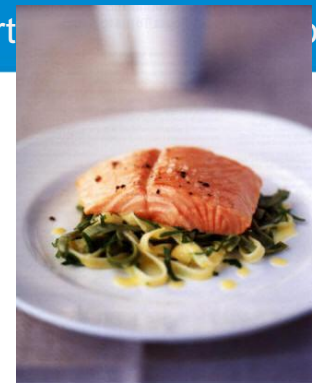
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Jingo Symposium 15th November 2013





Total fat

Saturated fat

Monounsaturated fat

Polyunsaturated fat

n-6 PUFA

n-3 PUFA

Trans fat

Linoleic Acid
Arachidonic acid
γ linolenic acid

Alpha linolenic acid (ALA)
Eicosapentaenoic acid (EPA)
Docosahexanoic acid (DHA)



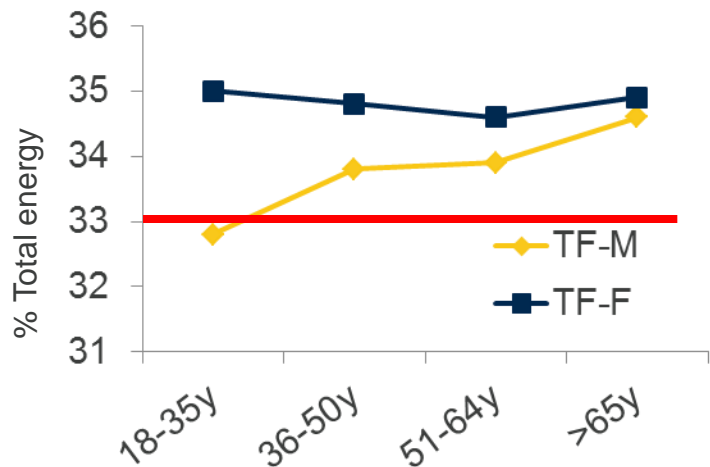
Dietary Intakes; 18-64 year olds

Fat Type	Recommended as a % Total Energy unless stated*	Intakes as per NANS, 2011
Total Fat	≤33	34.1
Saturated Fat (SFA)	≤10	13.3
Monounsaturated (MUFA)	≥12	12.5
Polyunsaturated (PUFA)	≥ 6	6.0
Trans fat	<1	0.6
<i>N-3 PUFA</i>		
ALA	0.5	0.6
EPA & DHA	250mg/d	224mg/d (85mg/d EPA & 139 mg/d DHA)

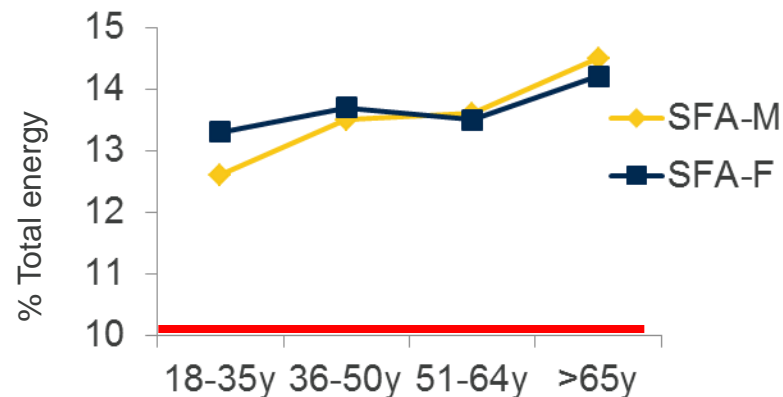
- Recommendations: Total Fat, SFA, MUFA & PUFA: UK DH (1991); Trans Fat, WHO/FAO (2003), ALA, EPA & DHA, EFSA (2010)
- Li et al (213) *Proceedings of the Nutrition Society & Tierney AM, In UCD MSc Thesis, Dietary Fat intakes in an Irish adult Population*



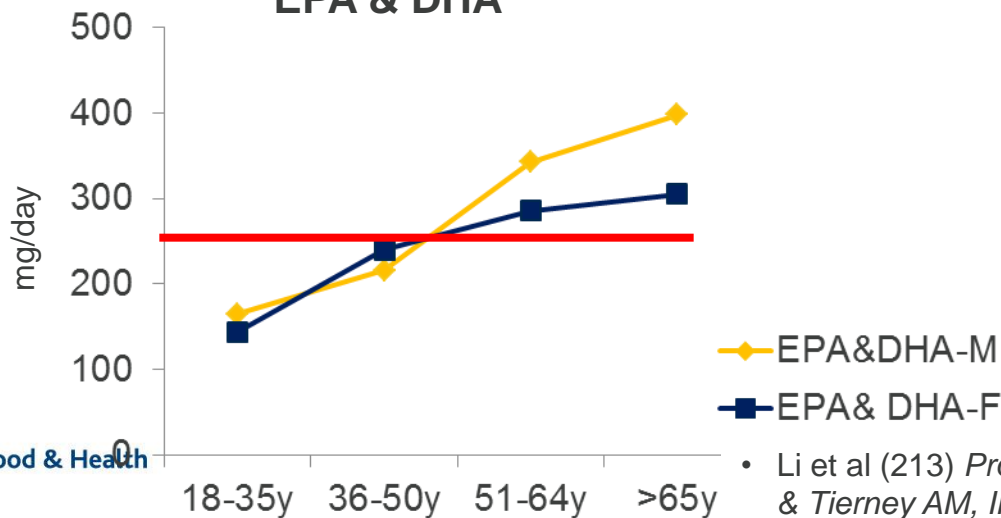
Total Fat



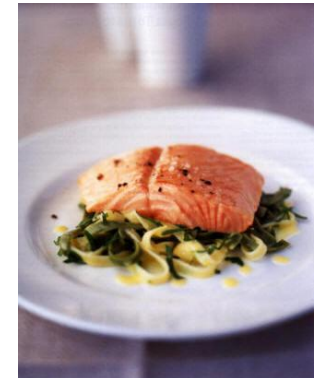
Saturated Fat



EPA & DHA

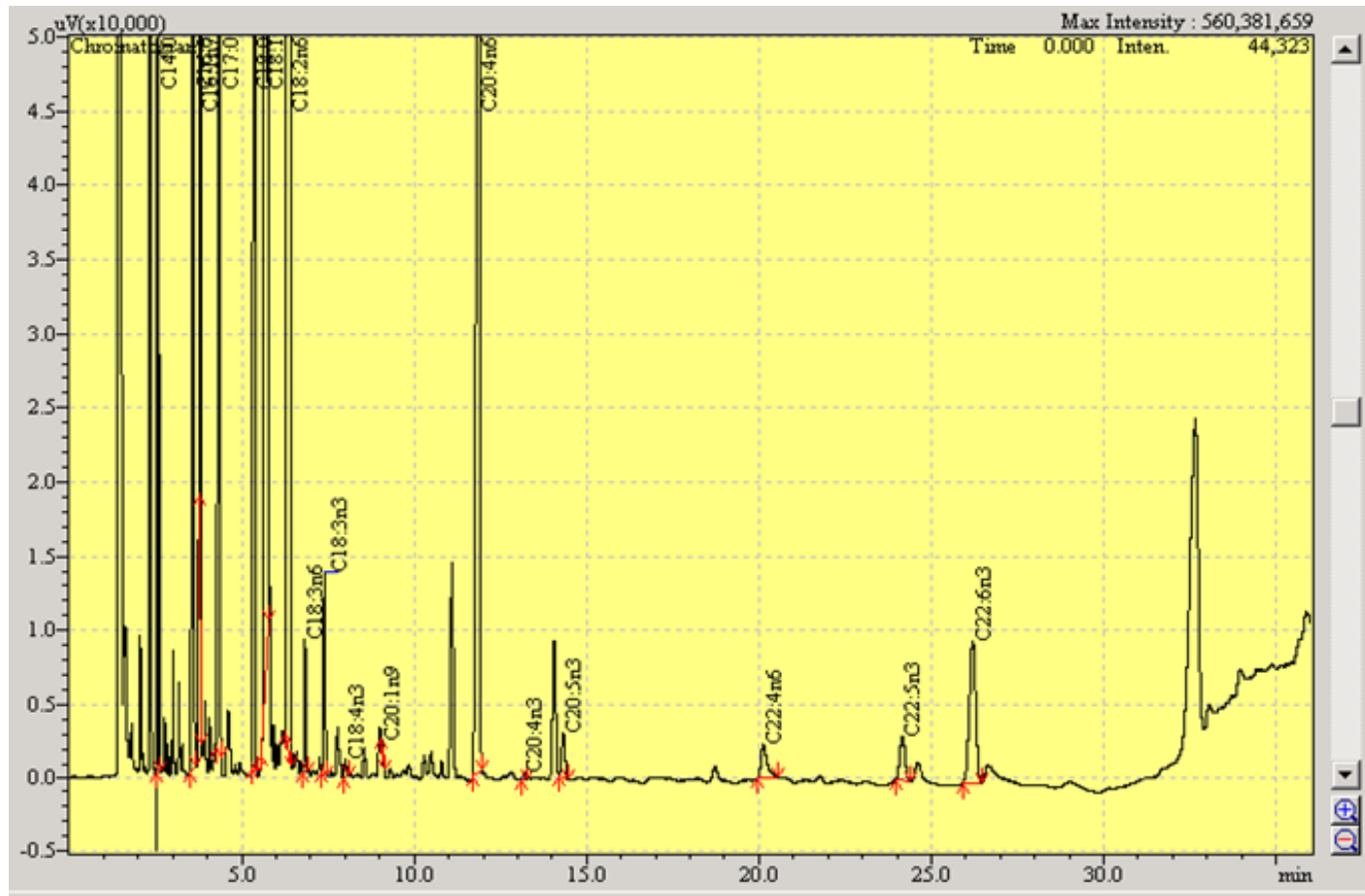


Self-reported dietary intakes





Plasma fatty acids



Plasma fatty acids

- 1052 adults aged 18+ years from NANS
- GC analysis of 26 fatty acids in plasma

saturates:

C12:0
C14:0
C16:0
C18:0
C20:0
C22:0
C23:0
C24:0

monounsaturates:

C14:1
C16:1
C17:1
C18:1
C20:1
C24:1

n-6 polyunsaturates:

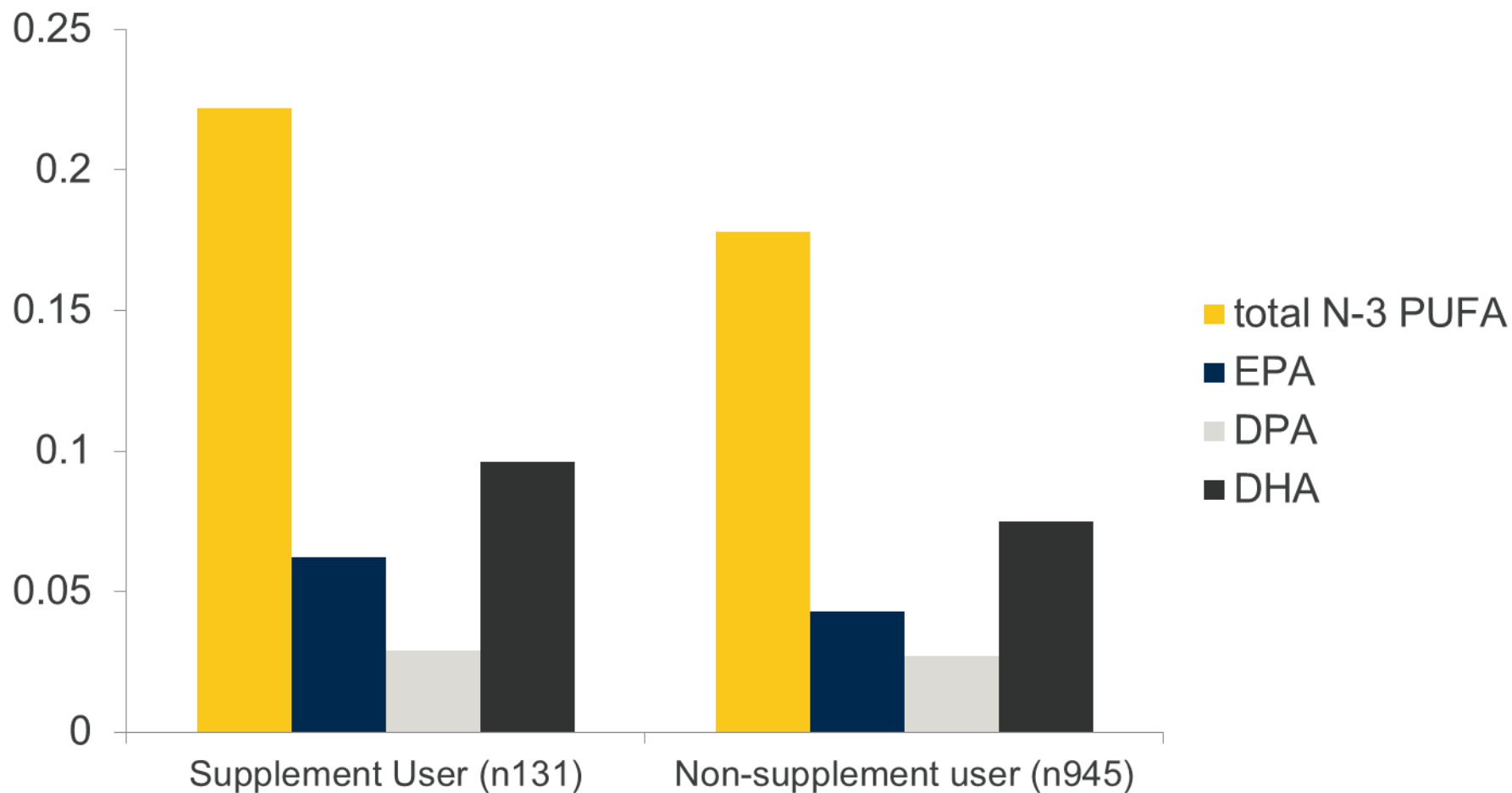
C18:2n6
C18:3n6
C20:2n6
C20:3n6
C20:4n6
C22:4n6

n-3 polyunsaturates:

C18:3n3
C20:4n3
C20:5n3
C22:5n3
C22:6n3



Ability to identify fish oil supplement users



Fatty acids: the health implications

- Imbalances in self-reported dietary fat intakes which differ by age, gender and fatty acid type
- Circulating plasma fatty acids are related to health outcomes



Acknowledgements

UCD Team



UCC Team



FSAI



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