Dietary determinants of saturated fat intake in Irish children (5-12 years)

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Introduction

It is well established that elevated intakes of saturated fatty acids (SFA) are associated with an increased risk of chronic diseases such as diabetes mellitus, cardiovascular disease and some cancers⁽¹⁾. In Ireland, current dietary guidelines recommend that dietary SFA should account for $\leq 10\%$ of total energy (TE) in children over 5 years⁽²⁾; however, only 2% of Irish children are meeting this recommendation⁽³⁾. The aim of this analysis was to investigate the dietary sources and determinants of SFA intake in Irish children.

Materials & Methods

Analyses were based on data from the National Children's Food Survey (NCFS; 2003-2004) which collected detailed food and beverage intake data from 7-d weighed food diaries from a nationally representative sample of 594 children aged 5-12 years (www.iuna.net). Dietary intakes were analysed using WISP®, which is based on McCance and Widdowson's The Composition of Foods, Sixth Edition⁽⁴⁾. Each food consumed was assigned to one of 27 food groups. The population was split into quartiles of %TE from SFA (lowest, low, medium and high consumers) and dietary sources and determinants of SFA intake were calculated using SPSS®.

Results & Discussion

There was no significant difference across quartiles in relation to gender, age and body mass index. Percentage TE from SFA increased significantly across all quartiles. In contrast, %TE from carbohydrates and total sugars significantly decreased from the lowest to highest quartile ($p < 0.001$). 'Whole milk', 'sugar, confectionary and preserves', 'biscuits, cakes, pastries and buns' and 'meat products' were the four major contributors across all quartiles to SFA (%TE). Comparisons between the lowest and highest consumers indicated that whole milk had the largest difference of 10.6%TE ($p < 0.001$). In relation to micronutrients, a significant difference in calcium, vitamin A and E intakes were observed across the quartiles.

Table 1. Mean daily energy, macronutrient and fibre intakes across quartiles of mean daily saturated fat intake in Irish children (5-12 years) for total population

	Lowest <i>n</i> =148		Low <i>n</i> =148		Medium <i>n</i> =148		High <i>n</i> =148		
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	<i>P</i>
Saturated fat (g/d)	21.2 ^a	5.2	25.9 ^b	5.7	28.1 ^c	6.1	34.0 ^d	7.9	*
Saturated fat (%TE)	11.7 ^a	1.1	13.7 ^b	0.5	15.3 ^c	0.5	18.0 ^d	1.5	*
Protein (%TE)	13.5	2.5	13.6	2.3	13.5	1.9	13.8	1.9	ns
Carbohydrate (%TE)	56.2^a	4.3	53.1^b	3.6	51.0^c	3.5	47.6^d	3.3	*
of which sugars (%TE)	25.2 ^a	6.3	23.9 ^{ab}	5.1	23.9 ^{ab}	4.9	22.7 ^b	4.6	*
Fat (%TE)	29.8^a	3.3	32.8^b	2.7	35.0^c	3.0	38.2^d	2.7	*
Monounsaturated fat (%TE)	10.5 ^a	1.6	11.3 ^b	1.5	12.0 ^c	1.7	12.7 ^d	1.5	*
Polyunsaturated Fat (%TE)	5.2 ^a	1.4	5.0 ^a	1.3	4.9 ^{ab}	1.4	4.6 ^b	1.0	*

n- number; SD- standard deviation; %TE- percentage of total energy

Statistical test used to measure differences between tertiles: One- way ANOVA with Scheffe post hoc test.

^{abc} Different superscript letters indicate significant differences in mean values across quartiles ($P < 0.05$).

Conclusion

In conclusion, these findings indicate the dietary determinants of saturated fat intakes and may be useful for developing dietary strategies to improve compliance with national recommendations.

References

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