

*The Editors of the Proceedings of the Nutrition Society accept no responsibility for the abstracts of papers read at the Society's meetings for original communications.*

## **PROCEEDINGS OF THE NUTRITION SOCIETY**

### **ABSTRACTS OF COMMUNICATIONS**

*A Scientific Meeting was held at the University of Aberdeen on Tuesday–Thursday, 11–14 July 1995, when the following paper was presented. This abstract arrived too late for inclusion in Volume 55 no. 1A.*

*All abstracts are prepared as camera-ready material by the authors.*

**Nutrient sources of *trans* fatty acids in the Scottish population (1984-1986).** By S. FENTON, C. BOLTON-SMITH and M. K. McCLUSKEY *Cardiovascular Epidemiology Unit, University of Dundee, Ninewells Hospital and Medical School, Dundee. DD1 9SY*

It has recently been reported that dietary *trans* fatty acids (tFA) have an effect on blood lipid levels and coronary risk in the USA (Ascherio *et al.* 1994). European data is less conclusive (Aro *et al.* 1995). The source of the tFA may be an important factor: whether they result from the hydrogenation of vegetable oils (H-tFA) or are produced by bacterial activity in the rumen (N-tFA).

Dietary intake data was collected from 10,359 men and women aged 40-59 y using a semi-quantitative food frequency questionnaire (FFQ) as part of the Scottish Health Heart Study (SHHS) (Bolton-Smith *et al.* 1991). The FFQ included sixty-four food items with the frequency options from < 1/month or never to 7 d/week. The types of fats and oils normally used and the brands of margarines, cooking oils and butter were also asked for. The tFA composition of foods were obtained courtesy of the Ministry of Agriculture, Fisheries and Food, the food industry and from published material. The appropriate tFA values were assigned to each of the items on the FFQ, allowing the percentage contribution of foods to total-tFA, H-tFA and N-tFA to be calculated (Table).

	Total-tFA				H-tFA				N-tFA			
	Men		Women		Men		Women		Men		Women	
	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd	Mean	sd
Bread	2.2	1.7	1.7	1.4	6.4	12.0	5.0	10.0	0	0	0	0
Red meat	11.8	6.6	11.2	6.7	0	0	0	0	27.4	12.4	27.2	13.1
Meat products	3.5	3.4	2.5	2.8	0	0	0	0	8.4	7.7	6.3	6.8
Puddings	31.1	15.4	34.9	15.8	59.7	27.3	64.4	27.4	0	0	0	0
Milk	8.9	6.0	8.4	6.1	0	0	0	0	20.6	12.2	20.3	13.1
Cream	0.4	0.9	0.5	1.1	0	0	0	0	0.8	2.0	1.1	2.4
Cheese	5.4	4.2	6.4	5.1	0	0	0	0	12.9	9.1	16.1	11.3
Butter	10.6	13.2	11.3	13.7	0	0	0	0	17.6	19.5	19.4	20.7
PUFA marg	4.7	11.1	4.9	11.6	7.5	18.1	7.7	1.0	0	0	0	0
Hard marg	15.4	21.9	14.3	21.5	21.2	3.07	19.8	29.6	2.2	3.4	1.3	2.0
Veg oil	2.2	3.0	1.2	1.6	5.2	10.4	3.1	7.6	0	0	0	0
Other foods*	3.4	5.2	2.2	4.1	0	0	0	0	9.2	11.1	7.2	9.8
Mean intake g/d	7.1	3.1	6.4	2.9	4.1	3.0	3.9	2.8	2.9	1.3	2.5	1.1

PUFA, polyunsaturated fatty acids \*Other foods includes fish, poultry, eggs and potatoes.

H-tFA accounted for about 60 % of the total tFA in the SHHS population, mainly from puddings (including all biscuits, chocolate and cakes) and hard margarines. The remaining 40 % came from dairy and beef fat. Gregory *et al.* (1990) reported less from H-tFA (51 %), lower total tFA (men 5.6 g/d, women 4.0 g/d) and a far smaller range of intakes (1-21 g/d v. 1-48 g/d) than in this Scottish population. These relatively high estimates of tFA intake in Scots may be pertinent to disease states, especially those associated with low linoleic acid intakes and essential fatty acid deficiency (Wahle *et al.* 1991) such as coronary heart disease.

Aro, Q., Kardinaal, A.P.M., Salminen, I. *et al.* (1995). *Lancet* **345**, 273-278.

Ascherio, A., Hennekens, C. H., Buring, J. E., Master, C., Stampfer, M. J. & Willett, W. C. (1994). *Circulation* **89**, 97-101.

Bolton-Smith, C., Smith, W.C.S., Woodward, M. & Tunstall-Pedoe, H. (1991). *British Journal of Nutrition* **65**, 321-335.

Wahle, K. W. J., McIntosh, G., Duncun, W. R. H. & James, W. P. T. (1991). *European Journal of Clinical Nutrition* **45**, 195-202.