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Meat consumption in Scotland: analysis from the Expenditure and Food Survey

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The World Cancer Research Fund (WCRF) report of 2007[(1)] recommended that the population average consumption of cooked red meat should not be >300 g (11 oz)/week, equivalent to a mean of approximately 43 g/d, of which very little if any should be processed. They define processed meat as that preserved by smoking, curing or salting or addition of chemical preservatives, including that contained in processed foods. Using this definition household food purchase data from the UK Expenditure and Food Survey was re-analysed to estimate red and processed meat consumption in Scotland over the period 2001–2 to 2006 and by Scottish index of multiple deprivation (SIMD) for the period 2001–2 to 2003–4. Adjustments were made for waste (new values derived from the Department for Environment, Food and Rural Affairs[(2)] and the Waste and Resource Action Programme survey of 2007[(3)]), meat content of prepared dishes and cooking losses. Data were analysed using general linear models within the complex samples module of SPSS (SPSS Inc., Chicago, IL, USA) weighting to the Scottish population and taking account of sampling methods. Results are presented as population means (i.e. includes consumers and non-consumers), as eaten, for household and eating out foods combined.

		2001–2 (*n* 619) (5015 weighted)	2002–3 (*n* 585) (4967 weighted)	2003–4 (*n* 546) (4952 weighted)	2004–5 (*n* 590) (4948 weighted)	2005–6 (*n* 566) (4939 weighted)	2006 (*n* 577) (4906 weighted)	*P* for overall association	*P* for linear association
Red meat*	Mean	36.2	36.6	36.1	34.4	34.6	34.4	0.737	0.143
(g per person per d)	95% CI	33.5, 38.8	34.1, 39.2	33.1, 39.2	31.8, 36.9	32.0, 37.2	31.7, 37.0		
Processed red meat	Mean	26.8	26.4	28.5	25.3	26.1	24.3	0.141	0.097
(g per person per d)	95% CI	24.2, 29.4	24.6, 28.1	26.6, 30.5	23.5, 27.1	24.1, 28.1	22.5, 26.2		
Total red meat (g per	Mean	63.0	63.0	64.7	59.7	60.7	58.7	0.301	0.068
person per d)	95% CI	58.4, 67.6	59.3, 66.7	60.7, 68.6	55.9, 63.4	57.0, 64.3	55.0, 62.4		

*Unprocessed meat included meat products such as beef burgers and sausage rolls, which were mainly unpreserved.

		SIMD quintile*					*P* for overall association	*P* for linear association
		1	2	3	4	5		
Red meat (g per person	Mean	37.6	35.2	40.5	34.8	33.4	0.081	0.093
per d)	95% CI	34.3, 40.9	32.8, 37.6	36.6, 44.5	31.6, 38.1	30.1, 36.8		
Processed red meat (g	Mean	31.4	28.7	26.8	23.9	25.4	<0.001	<0.001
per person per d)	95% CI	29.1, 33.7	26.0, 31.3	24.4, 29.1	21.5, 26.3	22.6, 28.1		
Total red meat (g per	Mean	69.0	69.0	67.3	58.7	58.8	0.014	0.001
person per d)	95% CI	64.3, 73.7	59.5, 68.2	61.8, 72.7	54.0, 63.5	54.1, 63.5		

*Combined data for years 2001–2 to 2003–4; 1, most deprived; 5, least deprived.

The population estimate for total red meat consumption was 46% higher than the WCRF recommended population average and there was no significant difference over the 5 years. There was a significant decreasing linear trend with increasing affluence for processed and total red meat ($P<0.001$ and $P=0.001$ respectively for linear trend).

In conclusion, current intakes are higher than desirable for cancer prevention based on the WCRF recommendations. This issue needs to be addressed in future prevention work.

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1. World Cancer Research Fund/American Institute for Cancer Research (2007) *Food, Nutrition, Physical Activity, and the Prevention of Cancer: a Global Perspective*. Washington, DC: AICR.
2. Department of Environment, Food and Rural Affairs/Office for National Statistics (2008) *Family Food. A Report on the 2007 Expenditure and Food Survey*. London: The Stationery Office.
3. Waste and Resource Action Programme (2007) The food we waste. http://www.wrap.org.uk/retail/case_studies_research/report_the_food_we.html