Proceedings of the Nutrition Society (2015), **74 (OCE1)**, E74 doi:10.1017/S0029665115000890

Summer Meeting, 14–17 July 2014, Carbohydrates in health: friends or foes

Increased oats' consumption does not reduce cardiovascular disease risk markers in middle-aged healthy volunteers

L. M. Mills, K. P Scott and F. Thies
Rowett Institute of Nutrition and Health, University of Aberdeen, Aberdeen AB21 9SB

Identifying dietary components that modulate blood pressure and other cardiovascular disease (CVD) risk markers could represent a safe, cost-effective means of helping to tackle CVD. We recently showed that daily consumption of three portions of whole grain foods (mixture of wheat and oats) could reduce CVD risk in healthy, normotensive, middle-aged people by significantly lowering systolic blood pressure[1]. Increased consumption of oats has also been associated with reducing blood cholesterol seemingly due the presence of β-glucans, a group of soluble fibres with cholesterol-lowering properties[2,3]. The aim of this pilot study was to assess the effects of increased oats' consumption (minimum 100 g/day) on established risk markers for CVD.

A dietary randomised controlled trial involving 23 middle aged healthy individuals (4 men and 19 women) was carried out. After a 4-week run-in period on a refined diet, volunteers were randomly allocated to a control (refined diet) or an oats group for 12 weeks. Outcome measures were blood pressure, serum lipids as well as inflammatory markers, and insulin sensitivity. Exclusion criteria included history of CVD, diabetes or previously diagnosed impaired glucose tolerance (fasting glucose greater than 7·0 mM), untreated thyroid disorders, or systolic (SBP) and diastolic (DBP) blood pressures over 160 and 99 mm Hg respectively. Volunteers with rheumatoid arthritis, asthma, inflammatory bowel disease, autoimmune disorders or cancer, or taking any medication or supplements known to affect any outcome measures were also excluded.

The mean BMI was 24·9 (SD 4·5) and 25·3 (SD 4·1) for the oats and control group respectively. The weight of the volunteers remained unchanged during the intervention. None of the treatments significantly affected blood pressure or serum cholesterol concentration.

	n	Age (years)	SD	SBP (mmHg)	SD	DBP (mmHg)	SD	Total Chol (mM)	SD	LDL Chol (mM)	SD	HDL Chol (mM)	SD
Oats	12	51·5	6·7	−1·50	9·08	0·40	6·81	−0·41	1·22	−0·21	0·55	0·10	1·01
Control	11	53·0	8·4	3·67	9·39	4·44	6·26	0·10	0·46	0·11	0·38	−0·02	0·19

Values are mean, SD, for absolute change from baseline after the 12 week intervention. Differences between the groups were tested using an independent t-test ($p < 0·05$).

Furthermore, insulin sensitivity, serum triglycerides, amyloid A, IL-6 and hsCRP concentrations remained also unchanged after intervention.

These results suggest that the daily consumption of 100 g of oats do not reduce cardiovascular disease risk markers in healthy middle aged individuals.

1. Tighe P, Vaughan N, Duthie G, *et al*. (2010) *Am J Clin Nutr* **92**: 733–740.
2. Anderson JW (1995) In: *Dietary Fiber in Health and Disease*, pp.126–145 [Kritchevsky D & Bonfield C, editors]. St Paul, MN: Eagan Press.
3. EFSA Panel on Dietetic Products, Nutrition and Allergies. (2011) *EFSA J* **9**, 2207.