

## Full fat cheese intake and cardiovascular health: a randomised control trial

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Milk and milk products contribute approximately 22 % of the nation's saturated fat (SFA) intake. Recently, the role of dairy and its SFA composition and link to cardiovascular disease (CVD) has been analysed<sup>(1)</sup>, suggesting a beneficial action of this food group on reducing cardiovascular risk in high-risk groups<sup>(2,3)</sup>. The aim of this study was to examine the effects of 4 weeks full-fat cheese on circulating lipoprotein fractions, blood pressure and arterial stiffness in healthy adults.

Participants were recruited in the city of Chester, UK. Those meeting entry criteria of: 18–65 years of age, not taking antihypercholesterolaemic or antihypertensive medication took part in the study. Participants were randomised to receive either 50 g of a full-fat Red Leicester (FFC) or placebo (virtually zero fat Cheddar cheese, ZFC) per day for 4 weeks. Anthropometry, blood pressure, brachial and aortic augmentation index (BAIX and AAIX, respectively), pulse-wave velocity (PWV) and a full lipid profile were determined at baseline and post-intervention. Participants were asked to keep a 3-day food diary prior to and for the last 3 days of the protocol. All procedures were approved by the Faculty of Medicine, Dentistry and Life Sciences Research Ethics Committee at the University of Chester.

Table 1. Baseline (T<sup>0</sup>) and follow-up (T<sup>1</sup>) measurements

	Zero fat cheese (ZFC)				Full fat cheese (FFC)				Time	Time × Group
	T <sup>0</sup>	SD	T <sup>1</sup>	SD	T <sup>0</sup>	SD	T <sup>1</sup>	SD		
Weight (Kg)	73.7	16.7	74.5	16.5	70.6	15.1	70.3	14.2	<i>P</i> = 0.878	<i>P</i> = 0.850
LDL (mmol/L)	2.2	0.8	2.3	0.6	2.4	0.8	2.4	0.9	<i>P</i> = 0.307	<i>P</i> = 0.728
HDL (mmol/L)	1.5	0.4	1.4	0.4	1.4	0.3	1.4	0.3	<i>P</i> = 0.841	<i>P</i> = 0.345
AIX (%)	13.7	11.2	10.8	16.7	14.5	12.8	12.0	9.4	<i>P</i> = 0.242	<i>P</i> = 0.525
BAIX (%)	−25.5	50.1	−3.3	58.0	−18.6	48.8	−6.6	54.1	<i>P</i> = 0.052	<i>P</i> = 0.751
PWV (m/s)	5.8	0.9	6.1	1.3	5.9	1.1	5.9	0.9	<i>P</i> = 0.149	<i>P</i> = 0.691

T<sup>0</sup>, baseline; T<sup>1</sup> follow-up; LDL-C, low-density lipoprotein cholesterol; HDL-C, high-density lipoprotein-cholesterol; BAIX, brachial augmentation index; AAIX, aortic augmentation index; PWV, pulse-wave velocity. Data show mean ± SD.

Eighty-six (86) individuals completed the study (43 per group). No significant changes were observed in any measured parameter (Table 1). Both ZFC and FFC groups showed a significant increase in calcium intake during the course of the study (1002.1 ± 639.1 mg to 1815.0 ± 1340.1 mg and 1219.6 ± 1169.1 mg to 1845.8 ± 1463.2 mg, *P* < 0.001, respectively) showing good adherence to the protocol.

In conclusion, these results suggest that inclusion of 50 g full fat cheese into the diet of a healthy population does not impact negatively on traditional CVD risk markers. Future strategies to reduce SFA intake should focus on – and acknowledge the importance of the source – of SFA in the diet.

1. Lovegrove JA, Hobbs DA (2016) *Proc Nutr Soc* 75, 247–258.
2. Diaz-López A, Bulló M, Martínez-González MA *et al.* (2016) *Eur J Nutr* 55, 349–360.
3. Nilsen R, Høstmark AT, Haug A *et al.* (2015) *Food Nutr Res* 59, 27651.