NOVEL DAIRY FATS LOWER PLASMA CHOLESTEROL

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Milk and butter intake has been clearly associated with higher coronary heart disease rates in different countries (POPHAM et al. 1983; ARTAUD-WILD et al. 1993) and this is likely to be mediated by the hypercholesterolaemic effect of dairy fat. Fat-modified dairy products are an innovation involving a technology in which protected unsaturated lipids are fed to ruminants resulting in milk and tissue lipids with reduced saturated fatty acids. We examined the impact of these novel dairy fats on plasma lipids in a human dietary trial.

Thirty three men and women participated in an eight week randomised cross-over trial comparing fat-modified and conventional (control) dairy products. The trial consisted of a two-week low fat baseline period followed by two three-week intervention phases during which the dairy foods contributed 20% energy in a diet totalling 35% fat energy.

Mean (±SD) plasma lipoproteins during the baseline, control and fat-modified phases is summarised in the Table below.

Plasma lipids (mmol/l)	Baseline	Control	Fat-modified
Total cholesterol	5.89 ± 0.89	6.50 ± 0.98	6.22 ± 0.82*
LDL cholesterol	3.95 ± 0.75	4.49 ± 0.90	4.25 ± 9.71*
HDL cholesterol	1.19 ± 0.30	1.30 ± 0.33	1.28 ± 0.33
Triglycerides	1.67 ± 0.85	1.57 ± 0.72	1.54 ± 0.66

* $P<0.001$ Control vs fat-modified

During the test periods, the fat-modified products resulted in a 0.28 mmol/l (4.3%) lowering of total cholesterol which was significant at $P < 0.001$. Most of this fall was in LDL cholesterol which fell by 0.24 mmol/l ($P < 0.001$) whereas HDL cholesterol and triglycerides remaining essentially unchanged.

This strategy of altering the fatty acid profile of dairy products if applied to populations typical of developed western countries presents an opportunity to lower the risk of developing coronary heart disease without any appreciable change in customary eating patterns.

ARTAUD-WILD, S. M., CONNOR, S. L., SEXTON, G. and CONNOR, W. E. (1993). Circulation 88: 2771.

POPHAM, R. E., SCHMIDT, W. and ISRAEL, Y. (1983). Med. Hypotheses 12: 321.

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