FRYING FATS AND PLASMA LIPIDS

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An estimated one-third of fat energy in the Australian diet is derived from commercially prepared foods (Baghurst et al. 1987) with fried foods probably contributing a significant proportion of this. Current commercial frying fats are high in saturated fatty acids (COFA 1989) and comprise primarily palm oil and tallow. The purpose of this study was to compare the effects on plasma cholesterol levels of three types of cooking fats suitable for frying: (1) A partially hydrogenated (20% trans fatty acids) semi-solid frying fat (Test Blend), (2) Sunola™, a high oleic genetic variant of sunflower oil, and (3) Palm oil, one of the most commonly used commercial frying oils.

Twenty three free-living hypercholesterolemic men and women participated in a double blind, randomised cross-over trial comprising a two week baseline period (<30% fat energy) followed by three by three-week intervention periods which comprised a background diet (15% fat energy) that was identical throughout the study plus the test foods that contained the oils (20% fat energy) under investigation. Plasma lipids (Mean ± SD) at the end of the baseline and each of the dietary periods are summarised in the Table below.

Plasma lipids mmol/L	Baseline	Palm	Sunola	Test blend
Total cholesterol	5.93 ± 0.84	6.23 ± 0.96b	5.72 ± 0.82a	5.93 ± 0.91
LDL cholesterol	4.07 ± 0.71	4.18 ± 0.81b	3.77 ± 0.58	3.88 ± 0.70
Triglycerides	1.60 ± 0.59	1.83 ± 0.70	1.66 ± 0.70a	1.86 ± 0.84
HDL cholesterol	1.14 ± 0.32	1.25 ± 0.33b	1.22 ± 0.32a	1.18 ± 0.30
LDL/HDL ratio	3.88 ± 1.26	3.60 ± 1.33c	3.29 ± 0.98a	3.50 ± 1.18

[a] P<0.05 Sunola™ vs test [b] P<0.001 palm vs mean Sunola™ and test [c] P<0.05 palm vs mean Sunola™ and test

We conclude that monounsaturated oils such as Sunola™ are clearly preferably to palm oil in terms of cardiovascular risk. Further, monounsaturated blends containing moderate TFAs (<20%) such as the test blend in this study may also lower LDL without altering the LDL/HDL ratio relative to palm oil. The high LDL/HDL ratio noted on the baseline low fat diet suggests that changes in this ratio during dietary intervention may not necessarily reflect changes in cardiovascular risk.

BAGHURST, K., CRAWFORD, D., RECORD, S., WORSLEY, A., BAGHURST, P. and SYRETTE, J. (1987). The Victorian Nutrition Survey. Part III (CSIRO: Adelaide).

COFA 'Composition Of Foods, Australia'. (1989). (AGPS: Canberra).

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