

Effects of Partial Rapeseed Oil Substitution on Serum Cholesterol

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During the last few years, increasing attention has been paid to the proportion of monoenoic fatty acids in the diet. It is thought that monoenes have a lowering effect on serum total cholesterol similar to that of polyenoic fatty acids. Rapeseed oil is one of the major sources of oleic acid, and also contains relatively high amounts of both linoleic and α -linolenic acids.

The effect of partial rapeseed oil substitution on serum lipids was studied in healthy men and women aged between 24 and 65 years. Two groups were formed according to the fat used earlier. Subjects in group A (N=20) were butter users and those in group B margarine users (N=25). The total cholesterol levels were 6.3 and 6.1 mmol/l, respectively. The fat on bread was replaced for 6 weeks with emulsified rapeseed oil comprising ca. 20% of the total fat intake.

In group A, the LDL cholesterol level decreased by an average of 10% (0.44 mmol/l). The corresponding decrease in group B was 5.3% (0.22 mmol/l). The proportion of HDL cholesterol in relation to total cholesterol increased by 4.3% in group A and by 8.4% in group B. In group B the rise in absolute HDL values was significant after 3 weeks of substitution. Significant differences were also found between the changes in the LDL level (group A) and in the proportion of HDL cholesterol (group B) when compared with those of the controls (N=16). The changes in serum lipid values were clearly more pronounced in subjects having total cholesterol levels higher than 6 mmol/l.

The results show that even minor rapeseed oil substitution has a favourable impact on the serum lipid profile. The decrease in the LDL cholesterol values without reducing the absolute HDL levels is most important. At population level such effects are expected to lower the incidence of coronary heart disease.