

each. Diet 1 was 30 % fat (8 % SFA, 12 % oleate, 6 % linoleate and 1 % linolenate), 55 % carbohydrate, 200 mg cholesterol. Diet 2 was 34 % fat (11 % SFA), 51 % carbohydrate and no change in oleate, linoleate, linolenate and cholesterol. Baseline diet (2 400 kcal, 35 % fat, 13 % SFA, 52 % carbohydrate) was provided before each diet for 4 weeks. Samples obtained at the end of each period were assessed for plasma lipids and fatty acids of the phospholipids and cholesterol esters. In comparison with baseline diet, diets 1 and 2 caused a decrease in total C, LDL-C and triglycerides (TG) ( $P < 0.001$ ); HDL-C was not modified, apoA-I/apoB ratio was increased ( $P < 0.001$ ). Plasma TG was lower after diet 2 than after diet 1, whereas HDL-C was higher ( $P < 0.05$ ). In phospholipids, myristate, oleate, linoleate, EPA and DHA were increased in diet 2 versus baseline ( $P < 0.01$ ) and diet 1 ( $P < 0.05$ ); in cholesterol esters, linolenate was increased with diets 1 and 2 ( $P < 0.05$ ).

These data suggest that a diet 34 % fat with 11 % SFA and 51 % carbohydrate has beneficial effects on plasma lipid and fatty acid profiles. This diet seems to be more effective than a diet 30 % fat with 8 % SFA and 55 % carbohydrate.

**Altered apolipoprotein AI metabolism in subjects with type IIA heterozygous familial hypercholesterolemia: a kinetic study.** R. Frénaïs, C. Maugeais, K. Ouguerram, V. De Mallmann, T. Magot, J.M. Bard, M. Krempf (CRNH and Clinique d'endocrinologie et maladies métaboliques, Hôtel Dieu, 44093 Nantes, cedex 01, France).

Patients with type IIA heterozygous familial hypercholesterolemia (FH) demonstrate an increase in LDL-cholesterol, associated with an elevated cardiovascular risk. Whereas alterations in apolipoprotein (apo) B100 metabolism are well established, potential effects of FH

on apo AI metabolism remain to be elucidated. Six healthy subjects and six FH patients (plasma cholesterol  $167 \pm 24$  and  $425 \pm 29$  mg/dL, respectively,  $P < 0.001$ ) received a priming dose ( $10 \cdot 10^{-6}$  mol/kg) followed by a continuous 14-h [ $^2\text{H}_3$ ]-leucine infusion ( $10 \cdot 10^{-6}$  mol/kg/h). Apo AI concentration was similar in FH patients compared to controls ( $113 \pm 18$  versus  $123 \pm 18$  mg/dL, respectively, NS). Data were analysed using a mono compartmental model (SAAM II modelling software). The HDL-apo AI fractional catabolic rate (FCR) and absolute production rate (APR) were increased in FH subjects ( $0.36 \pm 0.16$  versus  $0.18 \pm 0.04$  pool/day,  $P < 0.05$ , and  $17.7 \pm 7.7$  versus  $10.1 \pm 2.0$  mg/kg/day,  $P < 0.05$ ), these parameters being correlated ( $r^2 = 0.955$ ,  $P < 0.001$ ). HDL-triglyceride concentration was higher ( $20 \pm 8$  versus  $6 \pm 2$  mg/dL,  $P < 0.01$ ), whereas HDL-cholesterol concentration was decreased ( $37 \pm 7$  versus  $56 \pm 16$  mg/dL,  $P < 0.05$ ) in FH patients. Both FCR and APR of HDL-apo AI were negatively correlated with plasma cholesterol concentration ( $r = 0.351$ ,  $P < 0.05$  and  $r = 0.327$ ,  $P < 0.05$ , respectively). Plasma and HDL-triglyceride concentrations were correlated with the FCR and the APR of HDL-apo AI ( $P < 0.05$ ). Thus, our results suggest that patients with heterozygous FH up-regulate apo AI production in response to an hypercatabolism, which may itself be related to changes in HDL composition.

**The hypocholesterolemic effect of soybean is modified by dietary iron content in the rainbow trout.** S.J. Kaushik, G. Corraze, A. Mitrenko (Laboratoire de Nutrition des Poissons, Inra, 64310 St-Pée-sur-Nivelle, France).

Teleost fish are generally known to have high plasma cholesterol levels. Recent studies have confirmed the hypocholesterolemic effect of dietary soybean in