The effect of palm oil, lard, and puff-pastry margarine on postprandial lipid and hormone responses in normal-weight and obese young women

Only a few studies have been published on the postprandial effects of different fatty acids in obese subjects. Therefore, the present study investigated the effects of three test meals containing palm oil (PO), lard (LD), or puff-pastry margarine (PPM), all normal dietary ingredients, on postprandial lipid and hormone responses in normal-weight and obese young women. The study was performed as a randomized, crossover design. The fats differed in the content of palmitic acid, stearic acid, and traits monounsaturated fatty acids allowing a dietary comparison of different 'solid' fatty acids. The obese women had significantly higher fasting concentrations and postprandial responses of plasma total triacylglycerol (TAG), chylomicron-TAG, and insulin compared with the normal-weight women but there was no significant difference in the postprandial responses between the three test meals. The obese women had fasting concentrations of leptin four times greater than the normal-weight women. There were no postprandial changes in the concentrations of leptin. The fasting concentrations of HDL-cholesterol were significantly lower in the obese women than in the normal-weight women, whereas there was no significant difference between the two groups in the concentrations of total cholesterol or LDL-cholesterol. These results provide evidence that obese women have exaggerated lipid and hormone responses compared with normal-weight women but the different contents of saturated and trans monounsaturated fatty acids provided by PO, LD, and PPM have no effect in either group.

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