Influence of Interesterification on Blood Lipids and Glucose Control

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Interesterification of fats is being widely used to harden oils as an alternative to partial hydrogenation. There has been much media interest following the publication of one report from the Malaysian Palm Oil Board suggesting that interesterified stearic rich fats have adverse effects on the LDL-HDL ratio and adverse effects on glucose metabolism compared with palm oil. This paper will review the human studies on interesterified fats and will present data from more recently published studies on interesterified palmitic acid rich and stearic acid rich fats. Randomized short and long chain triacylglycerols (SALATRIM) have been shown to have a favourable effect on fasting plasma lipids and result in decreased postprandial lipaemia and activation of factor VII. Interesterification of fats high in saturated fatty acids can result in the formation of a significicant proportion of high melting point triacyglycerols. The solid fat content measured by NMR at 37C has been found to predict the extent of the postprandial increase in plasma triacylglycerol concentration following a test meal containing 50g fat. In conclusion, most published data do not support the view that randomized interesterified fat have adverse effects on fasting or postprandial blood lipids on glucose and insulin concentrations. However, further research is needed to characterize the effects of stearic and palmitic acid on insulin sensitivity using robust methods.