

P017 Measurement of endogenous and exogenous triglyceride kinetics in the fed and fasted states

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Emerging evidence has shown that an abnormal postprandial accumulation of dietary fat is atherogenic. However, there is a lack of data describing the mechanisms for accumulation of TG in the postprandial period. There is therefore a need to establish a specific measure of the kinetics of endogenous and exogenous TG in the postprandial period. The development and validation of a method to measure TG kinetics in exogenous and endogenous triglyceride-rich lipoprotein has been determined using a combination of immunoaffinity chromatography and stable isotopic techniques. Healthy volunteers were given a bolus injection of [$^2\text{H}_5$]-glycerol to label TG and underwent a fasted and fed study in random order. Incorporation of label was measured in lipoproteins (sf >60, sf 20-60 and sf 12-20) isolated by ultracentrifugation. Endogenous and exogenous particles were then purified into apoB-100 and apoB-48 containing lipoproteins using Protein G coupled to three monoclonal antibodies specific against apoB-100 (4G3, 5E11 and Bsol6). The kinetics of the TG extracted from the purified particles was determined by hydrolysing separated TG to release glycerol and measuring its enrichment by positive chemical ionization GC-MS. We have shown that this methodology has the potential to be used to characterise postprandial lipoprotein metabolism.