

P012 Dietary fats induce human monocyte activation *in vitro*
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In early atherosclerosis the frequency of activated monocytes in the peripheral circulation is amplified, and migration of monocytes into the walls of the aorta and large arteries is increased, due partly to de novo expression or activation of monocyte adhesion molecules. Although there is increasing evidence that chylomicron remnants (CMR) are strongly atherogenic, the outcomes of interactions between blood monocytes and circulating CMR are not known.

CMR-like particles (CRLPs) were used with monocytes isolated from human whole blood by negative selection using RosetteSep, to minimise monocyte activation. Uptake of CRLPs, reactive oxygen generation and cytokine and chemokine secretion were measured. Oil Red O staining showed that CRLPs were taken up by freshly isolated monocytes. The particles induced a significant increase in oxidative burst within 1h. Secretion of monocyte chemoattractant protein-1 (MCP-1) was significantly reduced after 24h incubation with CRLP, whilst IL-10 secretion was upregulated and IL-1, IL-6, TNF or IFN γ secretion was unaffected. These findings demonstrate that CRLP are taken up by undifferentiated monocytes and induce pro- (oxidative burst) and anti- (MCP-1 downregulation; IL-10 upregulation) atherogenic effects. We suggest that CR/monocyte interactions may be important in early atherosclerosis when many activated monocytes are found in susceptible areas of the artery wall.