

Effects of conjugated linoleic acid plus n-3 polyunsaturated fatty acids on insulin secretion and estimated insulin sensitivity in men. B Ahrén et al. *Eur J Clin Nutr* 2009;63(6):778-786.

Background/Objectives: Dietary addition of either conjugated linoleic acid (CLA) or n-3 long-chain polyunsaturated fatty acids (n-3 LC-PUFAs) has been shown to alter adiposity and circulating lipids, risk markers of cardiovascular diseases. However, CLA may decrease insulin sensitivity, an effect that may be reversed by n-3 LC-PUFA. Thus, the potential of CLA plus n-3 LC-PUFA to affect insulin secretion and sensitivity in non-diabetic young and old, lean and obese subjects was tested.

Subjects/Methods: CLA (3 g daily) plus n-3 LC-PUFA (3 g daily) or control oil (6 g daily) was given to lean (n=12; BMI 20–26 kg/m²) or obese (n=10; BMI 29–35 kg/m²) young (20–37 years old) or lean (n=16) or obese (n=11) older men (50–65 years) for 12 weeks. The study had a double-blind, placebo-controlled randomized crossover design, and primary end points were insulin secretion and sensitivity during a standardized meal test, evaluated by modeling glucose, insulin and C-peptide data. **Results:** The combination was well tolerated. There was no significant difference in fasting levels of glucose, insulin or C-peptide after CLA/n-3 LC-PUFA treatment compared with control oil. Neither insulin secretion nor estimated sensitivity was affected by CLA/n-3 LC-PUFA in lean or obese young subjects or in older lean subjects. However, in older obese subjects, estimated insulin sensitivity was reduced with CLA/n-3 LC-PUFA compared with control (P=0.024). **Conclusions:** The results do not support beneficial effects of CLA/n-3 LC-PUFA for β -cell dysfunction or insulin resistance in humans but suggest that insulin sensitivity in older obese subjects is reduced. **Keywords:** CLA, n-3 LC-PUFA, humans, insulin secretion, insulin sensitivity, obesity.