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BODY FAT MODULATES EFFECTS OF ISOFLAVONES ON LIPOPROTEINS IN POSTMENOPAUSAL WOMEN

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Introduction: Body fat content (BFC) affects lipoprotein profiles. Since the transport of isoflavones (IF) in blood is associated to lipoproteins [1], a relation between BFC and IF metabolism can be assumed, which could in turn impact lipoprotein profiles in postmenopausal women (PMW). Therefore, we investigated whether IF effects on serum lipid profiles are modulated by high or low BFC in women.

Material & Methods: Interactions were investigated in a 3-month, randomized, double-blind, placebo-controlled study with soy IF extract in 170 PMW. Interactions between BFC and IF on serum lipoprotein concentrations after 12 weeks were calculated under a linear mixed model where BFC was continuous as well as categorized (< or ≥35 %).

Results: Interaction effects exist between BFC (continuous as well as categorized) and IF regarding cholesterol and LDL-cholesterol concentrations. After 12 weeks PMW with a BFC≥35% who consumed IF had higher concentrations of these lipoproteins compared to women that consumed placebo. LDL-cholesterol concentrations in women who supplemented IF were higher in women with a BFC≥35% compared to a BFC<35%.

Conclusion: In PMW effects of IF on lipoproteins are modulated by their respective BFC. Particularly cholesterol and LDL-cholesterol could be higher in IF-supplemented PMW with higher BFC compared to placebo.

[1] *Rüfer C. E., Kulling S. E., Moseneder J.,Winterhalter P. et al.,Role of plasma lipoproteins in the transport of the soyabean isoflavones daidzein and daidzein-7-O-beta-D-glucoside. Br.J. Nutr. 2009, 102, 793–796.*