

The effect of a pre-meal of whey protein on postprandial metabolism in subjects with metabolic syndrome and type 2 diabetes

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Aim and Description:

The aim of the project is to clarify if a simple dietary change in subjects with pre-diabetes i.e. metabolic syndrome (MeS) and type 2 diabetes (T2D) can improve the metabolic profile (lipid-, carbohydrate metabolism and inflammation). A dietary factor such as whey protein exerts positive effects on risk factors for MeS and possesses a potent insulin stimulating action and can modify inflammation markers. Until now the focus has primarily been on the effect of whey protein on carbohydrate metabolism and incretin hormones e.g. in relation to the subsequent meal (second meal effect). In the present study, we will focus on an unexplored area to clarify if whey protein consumed as a snack (pre-meal) has beneficial effects on postprandial lipidemia (PPL) and inflammation markers after a second meal. We want in three acute, randomised, cross-over studies to explore the effect of whey protein as pre-meal prior to a standardised, fat-rich meal in subjects with MeS and T2D. We hypothesize that whey protein consumed as a pre-meal will improve postprandial responses of lipids and low grade inflammation markers. We will test the effect of protein-dose and -quality, the time factor and the degree-of-illness. Our research will hopefully give a more detailed understanding of the mechanisms related to milk proteins, and promote innovation within the dairy industry to develop and produce dairy products, which could be applied in the fight against lifestyle diseases such as MeS and T2D.