

CutDM - Cut down on carbohydrate usage in the diet of type 2 diabetes - mechanisms of effective therapy of diabetes by selective choice of macronutrients

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Aim:

The aim of the present human cross-over study is to investigate in a clinical setting the ability of a controlled low carbohydrate eucaloric diet enriched by dairy protein to improve carbohydrate and lipid metabolism in prediabetes and diabetic patients compared with the recommended diabetic diet. A focus will be on palatability of meals. The study will highlight pathophysiological mechanisms of the disease that can be addressed by the experimental diet, including beta-cell function, insulin resistance, and disturbances in lipid metabolism. The results are likely to show an effective non-pharmacologic treatment of type 2 diabetes.

Description:

This study will evaluate the effect of a diet with an optimized ratio of protein vs. carbohydrate including a high content of dairy products (milk protein and calcium) on glucose and lipid metabolism in type 2 diabetes. *Methods:* A controlled randomized study on postprandial change in glucose and lipid metabolism following modification of diet content of protein vs. carbohydrate ratio in various metabolic phenotypes, i.e., non-obese nondiabetics, obese non-diabetics and type 2 diabetic patients. The experimental diet exhibits a high content of protein in particular from dairy sources. The control diet will be the recommended type 2 diabetes diet, which is rich in carbohydrates. In perspective we aim for a larger randomised cross-over intervention trial to examine the effect of a low carbohydrate high dairy protein diet in type 2 diabetes to achieve an efficient nonpharmacological therapy option for type 2 diabetes. Recipes will be evaluated.