Effect of dietary behavior and nutritional counseling on metabolic parameters in Japanese adults

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Dietary behavior is complicated and hard to evaluate for our health. In this study, we have investigated the association between dietary habit and metabolic parameters in Japanese adults who participated in general medical check-ups.

In the first study, a cross sectional study was conducted to extract dietary factors which should affect the risk score for diabetes. A multiple regression analysis of metabolic parameters and dietary intakes in 11,634 subjects showed that the intake of potassium was significantly and negatively associated with the risk score. In the second study, a randomized controlled trial was conducted to assess the effects of an individualized nutrition counseling on metabolic syndrome (MS)-related risk factors in free-living middle-aged subjects with early stages of MS. Participants were assigned to the individualized nutrition counseling intervention group or control group. Nutrition assessment was performed at baseline and 3, 6 and 9 months later and all clinical variables were measured at the same times. Dietary intake of nutrients, lifestyle and physical activity were assessed by questionnaires. As a result, the plasma concentrations of AST and ALT were significantly reduced in the intervention group. Metabolic syndrome-related total scores, BMI, body weight, blood glucose and γGTP levels were also improved in the intervention group, but not in the control group. The intake of legume increased more among the intervention group than the control group. The results of this study also suggested that the intakes of vegetables or beens were closely associated with the reduction of the risk of MS and diabetes.