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Full Papers

Human and Clinical Nutrition

Increased intake of fruits and vegetables in overweight subjects: effects on body weight, body composition, metabolic risk factors and dietary intake

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Abstract

A diet rich in fruits and vegetables has been associated with several health benefits. However, the effects on body weight (BW) and metabolic markers are not fully known. The present study investigated the effects of increased intake of fruits and vegetables in overweight and obese men and women on dietary habits, anthropometry and metabolic control. In a 16-week controlled intervention, thirty-four men and thirty-four women aged 35–65 years (BMI>27 kg/m²) were randomised to an intervention (IN) or a reference (RG) group. All participants received general dietary advice, and subjects in the IN group received fruits and vegetables for free, of which ≥500 g had to be eaten daily. BW, waist circumference (WC), sagittal abdominal diameter (SAD), plasma insulin, blood glucose, glycated Hb (HbA1c), serum lipids, blood pressure, plasminogen activator inhibitor-1 activity, urinary isoprostane (iso-8-PGF 2α) and serum carotenoids were measured. Diet was assessed using 3-d weighed food records. In all, thirty subjects in the IN group and thirty-two in the RG group completed the intervention. Intake of fruits and vegetables doubled in the IN group, whereas intake of fruits increased in the RG group. Serum α- and β-carotene concentrations and intakes of folate and vitamin C increased significantly in the IN group. Energy intake, BW, WC and SAD decreased significantly in both groups. Supine systolic blood pressure decreased significantly in the IN group, with no between-group differences. No significant changes were observed for other metabolic markers. Provision of fruits and vegetables led to substantially increased intakes, with subsequent favourable changes in anthropometry and insulin levels, which tended to be more pronounced in the IN group. The observed improvements may, in combination with improved nutritional markers, have health benefits in the long term.

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Key words

Fruits; Vegetables; Body weight; Food intakes; Metabolic markers

Abbreviations

BP: blood pressure; BW: body weight; E%: percentage of energy; HbA1c: glycated Hb; IN: intervention; RG: reference; SAD: sagittal abdominal diameter

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