

## **EU-Project SEAFOODplus YOUNG – The effect of hypocaloric diet on weight loss and health variables in young European overweight individuals**

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Overweight and obesity is increasing in modern society and it is very important to find ways to fight it. Overweight and obesity is associated with a broad range of fatal and non-fatal cardiovascular events, metabolic syndrome, dyslipidemia, diabetes, stroke and cancer.

The aim of the present study was to assess the impact of a 8-week weight loss program on several metabolic syndrome risk factors.

Subjects were 324 volunteers (186 women and 138 men), from three different countries, 140 from Iceland, 120 from Spain and 64 from Ireland. The inclusion criteria were body mass index (BMI) 27 to 32 kg/m<sup>2</sup>, age 20-40 years, and a waist circumference of  $\geq 94$ cm and  $\geq 80$  cm for men and women, respectively. Exclusion criteria were weight change due to weight loss diet within 3 months before the start of the study, diabetes mellitus, hypertension or hyperlipidemia treated with drugs, pregnancy or lactation. Subjects were assigned to a special weight loss diet (30% reduction from energy needed for weight balance) for 8 consecutive weeks. At the beginning of the trial (baseline) they underwent an one-hour interview, their diet assessed and dietary advice was given on how to follow assigned weight loss diets. Anthropometric measurements and blood analysis were conducted at baseline and at endpoint.

Mean weight loss was 5.2 ( $\pm 3.1$ ) kg, (5.9% of initial weight), and mean cholesterol lowering was 0.4 ( $\pm 0.7$ ) mmol/L. The proportion of subjects defined as obese (BMI  $\geq 30$  kg/m<sup>2</sup>) decreased from being 50% to 14% during the intervention. At the same time the proportion of those having high blood cholesterol concentration ( $\geq 5$  mmol/L) decreased from 49% to 32%.

Weight loss was associated with significant reduction in all assessed blood parameters, cholesterol, triglycerides, HDL and LDL cholesterol, glucose and insulin.

Multiple regression analysis showed that a 1% change in body weight from baseline weight resulted in 1.8% (95%CI 1.4-2.3,  $p < 0.001$ ), 2.5% (95%CI 1.3-3.8,  $p < 0.001$ ) and 1.8% (95%CI 1.2-2.5,  $p < 0.001$ ) reduction in cholesterol, triglycerides and in LDL cholesterol, respectively, when adjusted for gender, country and age.

In conclusion, 8-week weight loss program was associated with significant reduction in several risk factors in young European overweight individuals.