

## **Parallel Session RTD Line 1 / Diet and weight (re)gain prevention**

### **Lecture 5: Diogenes – effects of dietary composition on diabetes risk factors?**

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#### **Abstract**

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#### **Introduction:**

The metabolic effects of dietary interventions varying in glycemic index (GI) values and protein content remain uncharacterized. Our aim was to analyze the effects of five diets with different GI values or protein content on the weight-loss regain management and carbohydrate metabolism.

#### **Methods:**

A total of 776 overweight/obese patients from 8 European countries, belonging to the RTD1 of Diogenes project, followed a liquid low-calorie diet to lose weight (♂:273; ♀:503). Those patients, who lost more than the 8% of the initial body-weight, were randomly assigned into one out of five interventional groups during six months, which were designed to provide different amounts of protein (LP/HP) and Glycemic index (LGI/HGI) values. Body-weight, fasting plasma glucose and insulin, HOMA-IR, adiponectin levels and an oral glucose tolerance test (OGTT) were assessed at the three time points. An ANOVA test followed by appropriate post-hoc comparisons was performed.

#### **Results:**

An overall 6-month weight-loss regain was observed in all dietary groups ( $p < 0.05$ ). Differences were higher between patients following the low-protein and high-glycemic index (LP/HGI) intervention ( $+1.67 \pm 5.2$ kg), as compared to the control-diet ( $+0.84 \pm 4.75$ kg). Changes in insulin values (mU/L) during the 6-months weight-loss regain ranged between 0.95 (in LP/LGI) and 3.05 (in LP/HGI). Plasma glucose increases after the dietary intervention tended to be higher ( $p < 0.10$ ) under the LP/HGI diet ( $+0.21 \pm 0.44$ mM) as compared to the control diet ( $0.06 \pm 0.69$ nM). These trends were also observed when analysing the HOMA-IR changes ((LP/HGI:  $+0.75 \pm 1.89$  vs. control:  $+0.29 \pm 0.92$ ;  $p < 0.05$ ). No differences were observed for adiponectin and OGTT measurements ( $p > 0.05$ ) among all the intervention diets during the 6-month period.

#### **Conclusion:**

A 6 months low-protein/high-glycemic index dietary intervention after a previous strict slimming period is accompanied by a higher tendency to body weight-loss regain and with a restoration of insulin resistance in comparison with the healthy control group. The outcomes from the remaining experimental groups concerning diabetes risk factors resulted between the values obtained from both regimens (LP/HGI diet and the control diet)