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## Can a Nordic diet be implemented as a new strategy for successful long-term weight loss maintenance in subjects with obesity?

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### Abstract

**Introduction:** A key problem in all weight-loss programs to fight obesity is the extent to which the body weight is maintained on a long-term basis. The study examines whether the 1-year consumption of healthy Nordic foods can result in better sustainable weight control compared to a control diet.

**Material and methods:** After a successful 6-week VLCD period in obese subjects ( $n = 80$ ,  $52 \pm 10$ y, BMI  $34.4 \pm 3.1$  kg/m<sup>2</sup>, 69% female; 93% completers,  $-10.9 \pm 3.0$  kg,  $p < 0.001$ ), the subjects were randomized to a new Nordic diet (NND) and a traditional Nordic diet (TND) group. The following 1-year period was a body weight maintenance period where the diets were implemented *ad libitum*. Weight, BMI, waist circumference and sagittal abdominal diameter were measured at 0 (immediately after VLCD), 6 and 12 months. Results are reported as mean  $\pm$  SEM. Differences in the anthropometric parameters between the diets at different time points compared to the start of the dietary intervention were statistically evaluated using a general linear model (GLM-ANOVA, Minitab Inc.).

**Results:** Forty-three subjects were randomized to NND and 37 to TND. In the NND group, 31 subjects completed the 6-month visit and 30 subjects 12-month visit. In the TND group, 24 and 21 completed 6-month and 12-month visit, respectively. We observed a non-significant difference in weight change at 6 months between NND ( $0.04 \pm 0.87$ kg) and TND ( $2.65 \pm 1.08$ kg). At 12 months, the weight change was significantly different between the diets (NND  $1.94 \pm 0.99$  kg and TND  $5.69 \pm 1.41$  kg,  $p = 0.029$ ,  $R^2 = 9.39$ ). Change in the BMI at 12 months was significantly lower for NND ( $0.65 \pm 0.33$  kg/m<sup>2</sup>) compared to TND ( $1.87 \pm 0.46$  kg/m<sup>2</sup>,  $p = 0.034$ ,  $R^2 = 8.87$ ) but not at 6 months ( $0.01 \pm 0.30$  kg/m<sup>2</sup> for NND and  $0.84 \pm 0.36$  kg/m<sup>2</sup> for TND). Differences in waist circumference (at 6 months  $0.26 \pm 0.93$  cm for NND and  $3.30 \pm 1.45$  cm for TND; at 12 months  $1.04 \pm 1.01$  cm for NND and  $3.85 \pm 1.79$  cm for TND) were not statistically different. The sagittal abdominal diameter was borderline statistically different at 6 months (NND  $-0.28 \pm 0.29$  cm and TND  $0.49 \pm 0.22$  cm,  $p = 0.049$ ,  $R^2 = 7.09$ ) but not at 12 months (NND  $0.41 \pm 0.38$  cm and TND  $1.23 \pm 0.42$ cm).

**Conclusion:** Results show a tendency that the type of diet has an impact on successful weight maintenance, with a benefit for the NND. Further statistical analyses including dietary compliance and biomarkers are needed and will be performed. Moreover, the study is ongoing with a total of 2-year follow-up.

### Conflict of Interest

There is no conflict of interest.