

Multicenter evaluation of an interdisciplinary 52-week weight loss program for obesity with regard to body weight, comorbidities and quality of life - a prospective study

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Objectives: To determine the effectiveness of a structured multidisciplinary non-surgical obesity therapy program on the basis of a temporary low-calorie-diet (Optifast 800 Kcal) for 12 weeks, and additional intervention modules to enhance nutritional education, to increase physical activity and to modify eating behaviour.

Design: Prospective multicenter observational study in obese individuals undergoing a medically supervised outpatient-based 52-week treatment in 37 centers in Germany.

- Closed groups of 8-15 people met weekly
- 12-weeks LCD (Optifast 800 Kcal/day) + 12 medical exams + 12 exercise units + 2 behavioural sessions + 2 nutrition sessions
- 6-week re-feeding: solid food introduced stepwise with formula + 6 medical exams + 6 exercise units + 2 behavioural sessions + 6 nutrition sessions
- 7-week stabilization: energy intake is stepwise enhanced to allow for weight stabilization + 3 medical exams + 4 exercise units + 4 behavioural sessions + 3 nutrition sessions
- 26-week maintenance phase + 6 medical exams + 13 exercise units + 22 behaviour therapy sessions + 5 nutrition sessions

Subjects: 8296 participants with a body mass index (BMI) of $>30 \text{ kg/m}^2$ included within 8.5 years.

- 3446 discontinued the program (41.5%) with top five reasons reported as: personal, no further appearance, job-related, medical, financial; with 22% dropping out within the first 26-weeks (n=1818)
- Subgroup analysis from 3-centres data: n=301 analyzed for 3-year follow-up, n=250 for Quality Of Life

Measurements: Body weight loss, waist circumference (WC), blood pressure, QOL and adverse events.

Results:

- In females, initial body weight was reduced after the 1-year-intervention by 19.6 kg (95% confidence intervals 19.2–19.9 kg) and in males by 26.0 kg (25.2–26.8) in per protocol analysis of 4850 individuals.
- Intention-to-treat (ITT) analysis: weight reduction in females was 15.2 kg (14.9–15.6) and in males 19.4 kg (18.7–20.1).
- Overall, the mean reduction in WC of 11 cm; reduced the prevalence of metabolic syndrome by 50% and the frequency of hypertension from 47 to 29% of all participants (ITT, all $p < 0.001$).
- Three years after start of intervention, the extent of weight loss remained statistically highly significant, despite a relative weight gain of 15.1% (95% CI, 12.8–17.4) 2 years after program termination. The mean weight loss after 3 years was 5.9 kg (95% CI, 3.7–8.1), with Relative Weight loss 4.2% of initial body weight (95% CI, 2.3–6.0).
- For up to 3-years significant improvement of health-related quality of life was reported.
- The incidence of adverse effects was low, with biliary disorders the only event repeatedly observed.

Conclusion: The structured multidisciplinary non-surgical obesity therapy program, with a low-calorie-diet (Optifast 800 Kcal) and behavioural sessions is a highly effective treatment of obesity grades I–III and obesity related diseases.