

Hypocaloric treatment of obese type 2 diabetics. By S. TOUBRO¹, A. ASTRUP¹, F. QUADE², ¹Department of Human Nutrition, The Royal Veterinary and Agricultural University, Copenhagen, Denmark, ²The Obesity Clinic, Fredriksberg, Denmark.

This investigation was performed in order to elucidate whether an intensification of the energy restriction could improve the usual disappointing result on weight and diabetes regulation obtained during diet treatment of obese type 2 diabetics. We compared the effect of 14 weeks treatment of either very low calorie diet (VLCD, NU-PO®) supplying 1.6 MJ (♀) - 1.9 MJ (♂) or a conventional 3.8 MJ diabetes diet (C). Randomisation to the two diets was performed after discontinuation of all anti-diabetic medication. The patients were followed closely with medical consultations and visits at clinical dietician 2 - 3 times per week in the beginning, subsequently reduced to only one weekly consultation. After the 14 weeks weight reduction programme the patients were adjusted to a weight maintenance diet. 20 patients were included, 3 dropped out (2♀/1♂, 2 VLCD and 1 C), so 17 (8♂/9♀, 8 VLCD and 9 C) patients (average 48 y, range 29 - 61), obese (38 kg/m², 27 - 60) completed the treatment. Results (±SEM) :

VARIABLE	VLCD	C	P
Weight loss (kg)	17,5 (±1,9)	12,6 (±1,5)	NS
Weight loss (%)	16,2 (±1,6)	11,7 (±1,2)	0,04
Change in Fat-free mass (kg)	7,1 (±1,1)	4,9 (±0,5)	NS
Change in Fat-free mass (%)	10,9 (±1,0)	7,5 (±0,8)	0,02
Change in Fat mass (kg)	10,4 (±1,1)	7,7 (±1,1)	NS
Change in Fat mass (%)	23,6 (±2,7)	18,4 (±2,1)	NS
Fasting P-glucose (mM)	10,3 → 6,7	10,4 → 6,4	NS
HgbA1c (ref 3,4 - 6,1%)	7,8 → 5,7	7,3 → 5,7	NS

An oral glucose tolerance test performed 2 - 5 weeks after the hypocaloric diet treatment was completed revealed that 6 (2 VLCD and 4 C, NS) no longer had diabetes according to the WHO definition. The VLCD treatment had no metabolic advantages, but resulted in a significantly larger % weight- and % fat-free mass loss. Unfortunately, we were unable to assess whether the larger loss of fat-free mass during VLCD was caused by more marked loss of glycogen and water as body composition were assessed by bioimpedance. We conclude that VLCD treatment of obese type 2 diabetics has no clear advantages over conventional diet, but can be used as a safe alternative to achieve an initial weight loss.