

# THE BENEFITS OF LOW CALORIE DIETS FOR DIABETICS

**S.N Kreitzman** Ph.D, R.Nutr. (UK Registered Nutritionist), **S. A. Kreitzman**, & **V. Beeson**  
Howard Foundation Research Ltd. Cambridge UK

Recently the media world has been absolutely saturated with articles carrying headlines such as "Type 2 Diabetes Can be Cured by Extreme Diet". This is important news, and it is imperative that the information be clearly understood. Your patients' health - and perhaps their lives - depends upon your recognition of the value of this information. Unfortunately, the sensationalist language with which the reports have couched the results will unnecessarily discourage many overweight people. Even healthcare providers may ignore the message. Patients will continue to needlessly suffer from the dire consequences of diabetes. It is important to recognise that although the language may be extreme, the diets are not.

## References

1. Lim E. L et al *Reversal of type 2 diabetes: normalisation of beta cell function in association with decreased pancreatic and liver triacylglycerol* *Diabetologia* DOI 10.1007/s00125-011-2204-7
2. Lean MEJ, Powrie JK, Anderson AS & Garthwaite PH. *Obesity, weight loss and prognosis in type 2 diabetes.* *Diabetic Med*, 7: 228-233, 1990.
3. Henry RR & Gumbiner B. *Benefits and limitations of very low calorie diet therapy in obese* *NIDDM. Diabetes Care*, 14: 802-823, 1991.
4. Wing RR, Marcus MD, Salata R, Epstein LH, Miaszkiewicz S & Blair EH. *Effects of a very low calorie diet on long term glycemic control in obese type II diabetic subjects.* *Arch Int Med*, 151: 1334-1340, 1991.
5. Hernandez-Bayo JA, Herranz L et al. *Factors related to successful outcome after rapid weight loss in obese patients.* *Internat J Obes* 19 Suppl 2: 379S, 1995. with NIDDM.
6. Paisey RB, Harvey P, Rice S et al. *An intensive weight loss programme in established type 2 diabetes and controls: effects on weight and atherosclerosis risk factors at 1 year.* *Diabetic Med* 15: 73-79, 1998.

## STUDY RESULTS ARE NOT "NEWS"

First of all, it must be made clear that the results that have received so much publicity recently are not "news". The only unique aspect of this particular study(1) is the degree to which it has managed to dominate the media, when more than 30 prior years of scientific and medical publications (involving thousands of diabetic patients) have seen diabetes put into remission within a few days on a very low Calorie diet (VLCD). Not a word of these studies appeared in the public media and only those healthcare professionals who kept current with the scientific literature were aware of the findings. Even they, however, were discouraged by the sinister notion of an "extreme diet".

There is nothing "extreme" about the modern Very Low Calorie Diet. Before we come back to that, it is also critical to understand that neither the diet used in this report nor a proper VLCD cause the "cure of diabetes" any more than bariatric surgery can cure diabetes. The immediate drop in blood sugar with surgery or VLCDs is due to the sudden unavailability of dietary carbohydrates, which forces the body to utilise the excess sugar it carries in circulation and storage. The crucial fact is that remission of type 2 diabetes is due to weight loss. Excess weight is well known to be a major contributor to the development of diabetes and the loss of the excess weight will usually reverse the process. Ultimately, the carbohydrate provided by the diet formula, supplemented by 3 carbon sugars released from triglycerides as fat becomes mobilised for energy, keeps blood sugar at a normal level and diabetes in remission. What the modern nutrient complete VLCD can do very effectively is ensure weight loss at a maximum safe rate, without the need for the risks of bariatric surgery with the inevitable subsequent nutritional problems caused by nutrient malabsorption.



## HOW CAN BENEFICIAL DIETS BE "EXTREME"?

It is something of a paradox that a dietary programme that actually provides an individual with all essential dietary needs should be considered "extreme". Although conventional "chatroom wisdom" might place great importance on the Calorie content of the dietary intake, this concern is actually unwarranted. A car's tank may hold 40 litres of petrol, but there is no point in filling the tank with this amount if the tank is already full. Overweight individuals have an enormous number of Calories in reserve in their fat stores. In essence, their petrol tank is already full. In evolutionary terms, that is what fat is for: to provide Calories, when required, at a rate of 7700 Calories for each kilogramme of stored body fat. The number of dietary Calories needed (Calories entering the body from the outside) is determined by the nutrient content of the food consumed. Without supplements, the nutrient availability in ordinary foods is sufficiently diffuse that it is virtually impossible to construct a nutrient-complete diet that adds up to less than 1200 Calories daily. With a normal food diet, cutting the Calorie intake below 1200 Calories creates inevitable nutrient deficiencies and the

**The UK is very fortunate to have in place, a network of highly trained, expertly-led, pharmacy-based VLCD programmes supplying Lipotrim - the leading VLCD programme, run exclusively by healthcare professionals. This supplements the long standing GP and hospital availability.**

**The availability of continuous audit data, documenting the weight loss success of these programmes, even in very obese people, is continuing proof of its value.**

dieter becomes ill. A modern nutrient complete VLCD is simply an enteral feed with sufficiently low fat that many of the daily Calories have to be drawn from the fat reserves of the body. That is what is commonly known as a "diet".

Very Low Calorie Diets have been in worldwide use for more than 30 years with a tremendous safety record. Although they may differ somewhat in their composition (and in the professional competence of those monitoring the programme) they have been repeatedly shown to be very safe. Safety of use is determined entirely by recognition of the concurrent medical conditions at the time of use. For example, the use of a VLCD by a diabetic patient needs the doctor to stop hypoglycaemic medication prior to the patient dieting. If the weight loss reduces blood pressure in a patient using anti-hypertensive drugs, the patient may become over-medicated. If a person diets while they are being assessed for thyroid hormone supplementation, the blood thyroxin levels will be inaccurate and the dose will be wrong. These diets really work and therefore care is needed in selection and monitoring of patients. The provision of a proper maintenance programme (not always available from various VLCD purveyors) makes a great difference in the prevention of recidivism. Long term outcomes are therefore programme specific.

## APPROPRIATE VLCDs SAVE LIVES

Don't let sensationalist language used in media reporting hinder patients benefiting from a valuable mode of treatment. Properly formulated and monitored VLCDs save lives. Appropriate maintenance formulations help reduce recidivism.

There is considerable long-standing scientific literature demonstrating that the rapidity of weight loss confers additional positive health benefits (independent of the actual amount of weight which is lost) when compared with food-based diets or higher energy level formula diets. This applies particularly to non-insulin dependent diabetes mellitus (see, for example Lean et al.<sup>(2)</sup>, 1990; Henry & Gumbiner, 1991<sup>(3)</sup>; Wing et al, 1991<sup>(4)</sup>; Hernandez-Bayo et al, 1985<sup>(5)</sup>, Paisey 1998<sup>(6)</sup> in which metabolic control and lipid profile is markedly improved by the rapid fall in weight using VLCD. Wider recognition of this and much more literature, as well as the current experience of over 2000 pharmacists and GPs using Lipotrim will hopefully put an end to the use of off-putting language which discourages acceptance of an important medical tool.

# Lipotrim

Obesity Management Programmes