

Slim-Fast® scientific research summary

Meal replacements have emerged as one of the most cost effective tools for empowering overweight and obese individuals to lose significant amounts of weight and maintain the weight loss over the long term. Meal replacement plans can be recommended to patients who have not been successful with conventional calorie counting and lifestyle change. The following summaries of published trials show how meal replacements can be an effective way to lose weight and maintain that loss, as well as reducing associated health problems in obese but otherwise healthy subjects and health compromised subjects, in supervised clinics and in non clinical settings.

A recent meta-analysis has examined the findings from 6 randomised controlled trials in which the meal replacement approach was compared to a more conventional food based dietary treatment. 4 of the 6 studies were carried out over a 1 year period, 1 for 3 months and 1 for 4 years. The meta-analysis demonstrated significantly greater weight loss in the meal replacement group compared to the conventional dietary treatment. A random effects meta-analysis found a 2.54kg greater weight loss in the meal replacement group at 3 months and a 2.43kg greater weight loss at 1 year. A pooling analysis of completers found a similar magnitude of greater weight loss using the meal replacement treatment. They concluded that that the use of the meal replacement approach could 'safely and effectively produce significant sustainable weight loss and improve weight-related risk factors of disease'¹.

In a long-term, prospective randomised trial on 100 subjects with a mean BMI of 34kg/m² comparing a conventional dietary treatment with a meal replacement approach over the short term [3 months] with progress monitored for the next 4 years. For the first 3 months group A [n=50] was treated with a conventional low calorie diet of 1,200-1,500kcal/day and group B [n=50] was advised to replace 2 of their 3 meals each day with liquid shakes and eat 1 self-selected meal of 600-900kcal. For the next 4 years both groups were given meal replacements and asked to use these in place of 1 meal and 1 snack each day. After the 3-month weight loss phase group A [conventional diet group] lost 1.5±0.4% whereas group B [meal replacement group] lost 7.8±0.5% [p<0.001]. Over the next four years weight loss was maintained in both groups with a mean weight loss of 3.3±0.8% and 8.4±0.8% for groups A and B, respectively. This study suggests that meal replacements may encourage weight maintenance and in this instance produced better weight loss over 12 weeks².

In a study on using meal replacements in a primary care setting. 113 women took part in a 1 year study and were randomly assigned to 1 of 3 groups:

- 1 a dietitian led group, 26 sessions, each session lasting 1 hour
- 2 a dietitian led group, 26 sessions, each session lasting 1 hour plus meal replacements
- 3 physician or nurse visits [10-15 minutes] plus meal replacements

Greatest weight loss was achieved by the dietitian led group using meal replacements with a mean change of -9.1%±8.9% compared to the dietitian led group where no meal replacements were incorporated. This difference remained at the 2-year follow up study³. The physician or nurse sessions lasting 10-15 minutes were as effective as the longer dietitian led groups where no meal replacements were incorporated [4.3%±6.5% vs 4.1%±6.4%, respectively, p<0.05]⁴.

In a rural community in the USA, a self-managed, minimal intervention weight control programme was set up where free meal replacement products were provided to overweight men and women [n=158] and weights were checked twice a year over a 5-year period. It was suggested that participants replace 2 meals per day with liquid shakes during the weight loss phase and to help maintain lost weight to either use 1 meal replacement each day or to weigh on a daily basis. If weight was regained the advice was to restart using 2 meal replacements each day. 3 control subjects were selected from the surrounding area to match each meal replacement participant for age, BMI, race and gender. After 5 years mean weight change in the men using meal replacements was -5.8±5.4kg and in the women -4.2±6.9kg. By comparison male controls had gained 6.7±10.2kg and the females gained 6.5±10.7kg⁵.

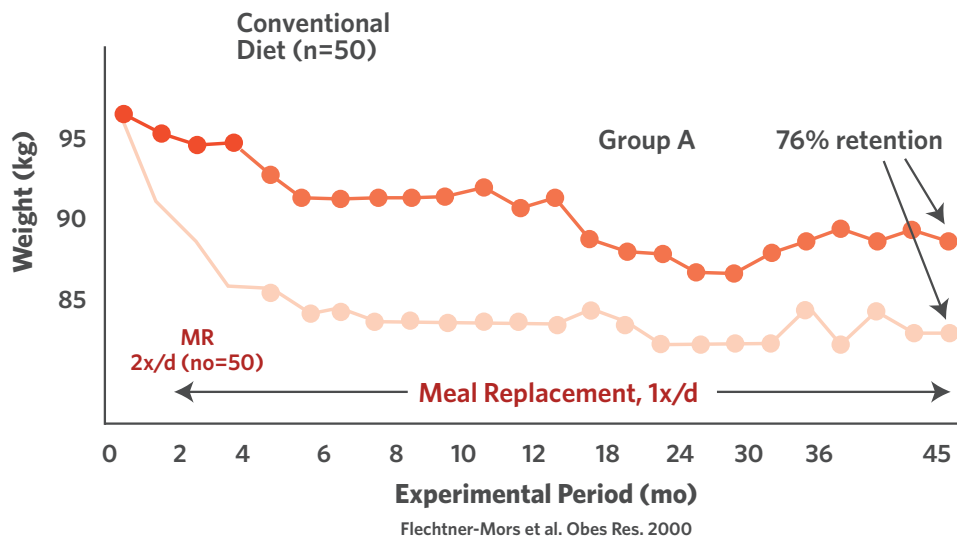
Slim-Fast!®



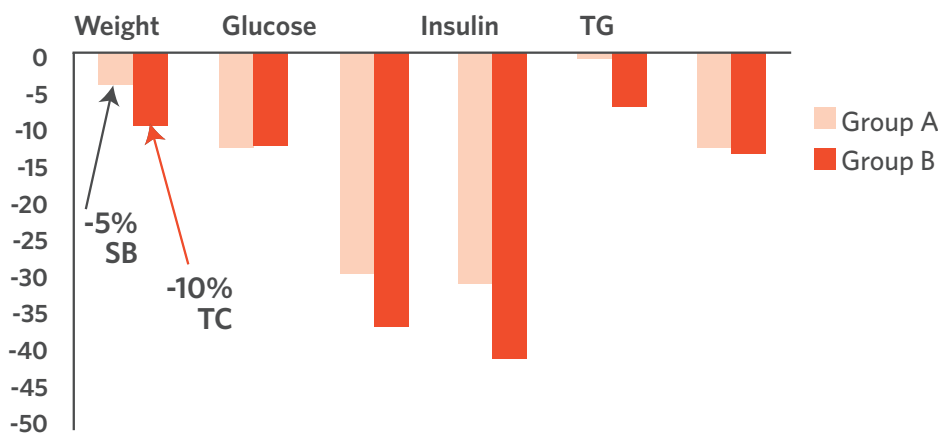
In an Australian 6-month study designed to evaluate over the counter usage of meal replacements with minimal health professional input this strategy was found to have a similar magnitude of effectiveness compared to a structured low-fat diet. 66 subjects were randomised to receive either 2 meal replacements each day plus information on healthy food choices or were given information on a structured low-fat diet plus food vouchers of an equivalent financial value to the meal replacement products provided. At 6 months $9\pm 6.9\text{kg}$ weight loss had been achieved in the meal replacement group compared to $9.2\pm 5.1\text{kg}$ in the structured diet group⁶.

In the published Australian Clinical Guidelines on the management of overweight and obesity four studies comparing meal replacement treatment with conventional low calorie diets over a 1-5 year period were evaluated. They found a mean weight loss of 6kg in the meal replacement group compared to a 1.4kg increase in the control group. Their recommendation was that 'clinically significant weight loss can be achieved using meal replacement programs'⁷.

Slim-Fast® study in a hospital obesity clinic-weight change over four years²



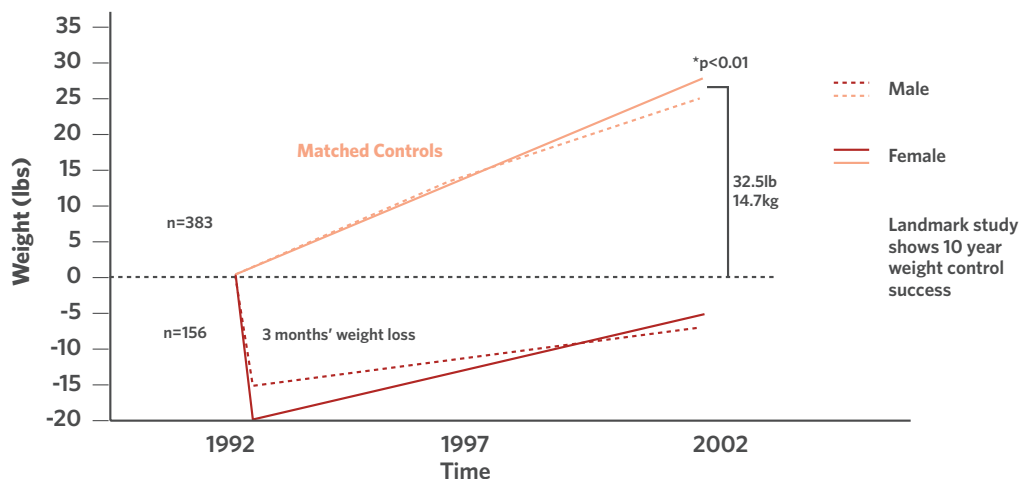
Risk Factors after 4 Years



Group A = conventional diet; Group B = meal replacement
 SBP = systolic blood pressure; TC = total cholesterol
 *P < 0.05 from baseline; †P < 0.05 Group A vs Group B

Flechtner-Mors et al. Obes Res. 2000

10 Years Later - 15kg Lighter⁸



Lifestyle approaches to management of overweight and obesity⁹

| DESCRIPTION | COMPONENTS | WEIGHT LOSS AT 6 MO (KG) | EXAMPLE |
|-----------------------|--|--------------------------|-------------------------|
| Self-help | Encouraged to lose weight | 1.7 | |
| Meal replacements | Use MR 2 x daily | 9.1 | Slim-Fast® |
| Physician counselling | Mutual goal setting, physical activity goals, plan to reduce energy intake, may include MR use | 3.0-9.0 | |
| Community programme | Education programme; weekly group sessions; calorie counting system; packaged food available | 6.1 | Weight Watchers |
| Dietetic counselling | Tailored to individual | 4.1 | |
| Pharmacotherapy | Use of approved agent | 4.0-6.0 | Sibutramine or orlistat |
| Behavioural programme | Behavioural programme; weekly group meetings; exercise expected; record keeping | 11.4 | |
| Low energy diet | Behavioural programme, weekly group meetings and phone calls, MR, exercise expected, calorie counting system, record keeping | 20.1 | HMR |
| Very low energy diet | All components of low energy diet programme except use of vegetables and fruits | 21.3 | HMR |

Summary

With a wealth of science behind meal replacements, and having met NICE guidelines on obesity, it is seen as a very effective dietary strategy for obese patients². Systematic evaluations of randomised controlled diets using meal replacements suggest that these types of interventions can safely and effectively produce significant sustainable weight loss and improves weight-related risk factors of disease¹.

Studies have also found that the use of 1 or 2 meal replacements daily significantly improves weight loss and maintenance compared with a traditional diet plan⁴. In one study the initial weight loss was greater in those receiving meal replacements compared with the isocaloric conventional diet (7.8% vs. 1.5%)¹⁰. Published studies also show that meal replacements work long term^{2,8,11}.

References:

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