Commercial weight-loss programmes: are they effective for people with type 2 diabetes?

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Abstract
Weight loss is advocated as a primary therapy for the 90% of people with type 2 diabetes who are overweight or obese, but the capacity of the NHS to provide an integrated, cost-effective weight management service limits application.

It has been reported that conventional weight loss services within the NHS are less effective than group-based commercial interventions including Rosemary Conley, Slimming World and WeightWatchers. These commercial organisations now offer weight management services in many areas of the UK through slimming on referral. There is evidence from randomised controlled trials and from audit demonstrating the efficacy of commercial groups for people without diabetes, but little evidence for those with diabetes.

The aim of this review is to explore the evidence for these commercial providers in people with diabetes. Both Slimming World and WeightWatchers, but not Rosemary Conley, have published evidence of efficacy in their general groups. Only Slimming World has audited those with type 2 diabetes but this was a small, self-reported study. Independent head-to-head trials and audit data from those without diabetes suggest that commercial programmes are effective for weight loss.

Extrapolating these data to those with type 2 diabetes suggests that there is little to choose between the main commercial providers, that individuals can expect to lose 3–5 kg over 12 weeks, and that attrition rates over 12 months or less are approximately 40–60%.

Commercial groups are probably effective for those with diabetes, but there is little published evidence available about the effects on weight loss, glycaemic control and attrition rates. Copyright © 2015 John Wiley & Sons.

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Key words
type 2 diabetes; commercial providers; obesity; weight loss

Introduction
The prevalence of type 2 diabetes is continuing to increase around the world and, in the UK in 2013, it was estimated that 2.7 million (6% of the population) had diagnosed diabetes. Type 2 diabetes accounts for over 90% of cases, meaning that approximately 2.4 million people are living with type 2 diabetes in the UK today, and this is predicted to rise to 3.6 million by 2025. Obesity and overweight are an established risk factor for type 2 diabetes and are more prevalent in people with diagnosed type 2 diabetes. Data from the National Diabetes Audit (NDA) showed that 90% of adults (2.2 million) with type 2 diabetes are either overweight or obese. Weight loss is recommended as a primary therapy for those who are overweight or obese, but it is unlikely that the National Health Service (NHS) will have the capacity or means to offer fully integrated weight loss care to these 2.2 million adults. In practice, weight loss resources offered in the community by the NHS are neither evaluated nor audited effectively, and data are largely lacking for efficacy of this approach; this is especially true for those with type 2 diabetes. A recent review and meta-analysis of weight management programmes reported that conventional NHS primary care-led weight loss is largely ineffectual, but that group-based commercial interventions, including Rosemary Conley, Slimming World and WeightWatchers, are effective. However, there is very little evidence of efficacy for people with type 2 diabetes.

Commercial weight loss groups have been around since the 1960s, with WeightWatchers launched in the early 60s, Slimming World in 1969 and Rosemary Conley Diet and Fitness Clubs in 1993. These three groups are the main commercial providers in the UK, although the reorganisation of the NHS and public health services in the UK has encouraged the formation...
of other private organisations offering group-based approaches to weight loss (e.g. Counterweight, and MoreLife). The reorganisation of health care, especially within the primary care sector, combined with the recent recommendations from the National Institute for Health and Care Excellence (NICE) focusing on the role of lifestyle weight management programmes in the treatment of overweight and obesity in adults,9 has meant that in many areas of the UK weight management services are now provided by the commercial sector. Although the recent NICE guidance encouraged NHS organisations to work with commercial providers, and many areas are now offer slimming on referral, there is almost no published evidence for those with type 2 diabetes.

The aim of this article is to provide a review of commercial weight loss groups, to evaluate efficacy, and to identify any potential differences in outcomes between commercial providers.

Methods
The three main recognised commercial groups (Rosemary Conley, Slimming World and Weight Watchers) were each sent a standard email requesting information about weight loss for people with and without type 2 diabetes, together with an explanation of the aims of this review.

In addition, four other smaller private providers (ABL Health, Thrive Tribe, Counterweight and MoreLife) were identified and the same standard email was sent to each.

Commercial weight management groups
An overview of the three main providers in the UK – Rosemary Conley, Slimming World and WeightWatchers – is provided in Table 1.

All these groups run weekly classes, including specific diet and physical activity advice, and they utilise various behavioural strategies to support lifestyle change.

Rosemary Conley
Rosemary Conley10 pioneered low-fat eating as a strategy for weight loss with the publication of her first book, ‘The hip and thigh diet’, in 1988.11 In 1993, she set up her Diet and Fitness Clubs to provide support, motivation and supervised exercise for members. The clubs were run as a franchise, and had 170 professionally qualified exercise teachers who ran 2000 weekly classes for over 80 000 members. In 2014, Rosemary Conley Food and Fitness went into administration, and a number of franchises were bought by the Club Vitality organisation. Rosemary remains as an ambassador for the online diet programme, which offers support and information to online members.

Diet. The diet recommended by Rosemary Conley is a low-fat, low glycaemic index (GI) diet. Any low GI food containing less than 5% fat can be included, and new members are advised to begin with a Fat Attack Fortnight which provides

### Table 1. Comparison of three commercial weight loss providers in the UK

<table>
<thead>
<tr>
<th>Name</th>
<th>Description</th>
<th>Diet</th>
<th>Cost*</th>
<th>Numbers (UK)</th>
</tr>
</thead>
</table>
| Rosemary Conley   | • Slimming clubs with weekly support and exercise classes led by trained consultants  
                   | • Online support                                                          | Low fat, low GI, high fibre diet                                      | Joining fee £10, £6.50 per week  
                   |                   |                                                                     |                                                                      | £12.99 for 1 month, £34.99 for 3 months, £69.99 for 12 months | 2000 classes with 80 000 members** |
| Slimming World    | • Slimming club with weekly support groups led by trained consultants with online dietary support  
                   | • Online diet plan and support                                           | Food optimising using Extra Easy or Extra Easy SP                    | Joining fee £10, £4.95 per week  
                   |                   |                                                                     |                                                                      | Bronze: £79.95 for 3 months, Silver: £84.95 for 3 months, Gold: £99.99 for 3 months | 11 000 groups with 500 000 members |
| Weight Watchers   | • Slimming club with weekly support groups led by trained consultants who have lost weight with optional eSource online support  
                   | • WeightWatchers online                                                  | Switch, consisting of ProPoints Plan and/or Filling & Healthy Plan | Joining fee £10, £21.45 per month  
                   |                   |                                                                     |                                                                      | Joining fee £29.95, £12.95 per month  
                   |                   |                                                                     |                                                                      | Basic starter kit: £59.95, Premium starter kit: £89.95 | 6500 weekly meetings |

*Prices at January 2015. **Classes run as a franchise. Following collapse of business in 2014, some now run independently and some taken over by Club Vitality.
1200kcal/day. The aim is to lose 3kg (7lb) during the first fortnight, and this strategy is based upon research indicating that successful weight loss is more likely with those who lose a significant amount of weight initially.\textsuperscript{12,13} After the initial weight loss phase, a daily calorie allowance is calculated based on age, gender, current weight and levels of activity. Members are supplied with a variety of suggestions for calorie-counted recipes for meals and snacks from which to choose, and are encouraged to use these to meet their individual energy requirements.

**Physical activity.** Physical activity is a core component of the Rosemary Conley plan and most classes include an optional 45-minute supervised exercise session delivered by trained consultants. Rosemary herself has produced numerous exercise videos and DVDs and encourages moderate to vigorous exercise for 30 minutes on at least five days of the week, in line with current recommendations.\textsuperscript{14}

**Behavioural strategies.** Rosemary Conley groups are based upon social cognitive theory, with the central theme of self-efficacy, and also use theories of reasoned action and planned behaviour. Group support and role modelling are used through visualisation techniques and by challenging and reframing to support behaviour change. Rewards (e.g. certificates, slimmer of the week) are offered to reinforce successful weight loss.

**Efficacy.** There were no audit data available from Rosemary Conley about the proportion of people with type 2 diabetes attending classes or using the online programme, nor about weight loss outcomes in people with and without diabetes [Rosemary Conley, personal communication]. This lack of data was explained as issues with confidentiality.

**Slimming World**

Slimming World\textsuperscript{15} is currently the largest weight loss organisation in the UK (Table 1) and was founded in 1969 by Margaret Miles-Bramwell. There are two approaches offered to members including weekly meetings with online support and a stand-alone online programme. Groups are run by Slimming World consultants who receive specific training in diet, physical activity and facilitating behaviour change through a highly developed support system.

**Diet.** Slimming World utilises an approach called Food Optimising, which is designed to be permissive rather than restrictive and is based on the principles of satiety and energy density. The programme permits unlimited quantities of ‘free foods’ including fruit and vegetables, lean meat and poultry, fish, eggs, very low fat dairy produce, potatoes, rice and pasta. Members are encouraged to eat plenty of fruit and vegetables. Other foods called ‘healthy extras’ are recommended for daily consumption, although these must be measured and counted. Healthy extras include foods that are high in dietary fibre (wholegrain cereal, bread and crackers), high in calcium (milk, cheese and yogurt), and nuts. One simple eating plan is offered, together with meal suggestions and recipes, and members can choose either ‘Extra Easy’, or ‘Extra Easy SP’ which is a booster plan based on the Extra Easy diet but which emphasises protein-rich foods. In addition, members are also allocated a number of ‘syns’ each day and these include energy dense foods such as cakes, biscuits, sweets, chocolate, crisps and alcohol.

**Physical activity.** Slimming World incorporates physical activity into the programme using the concept of Body Magic. This is designed to increase daily activity gradually, aiming at the recognised goal of 150 minutes per week of moderate to vigorous activity,\textsuperscript{14} and is achieved in a step-wise fashion with bronze, silver, gold and platinum awards.

**Behaviour change strategies.** The theoretical background for Slimming World is based on transactional analysis, motivational interviewing, the influence of ego states on behaviour change decisions, and compassionate mind theory. Slimming World aims to provide a supportive environment that avoids criticism, control or judgement and uses techniques such as self-monitoring, cost–benefit analysis, visualisation and flexible restraint. Group approval is elicited for weight loss, for new decisions leading to behaviour change, and for maintaining commitment in the absence of weight loss. Rewards are given for reaching pre-determined weight loss goals.

**Efficacy.** Slimming World has funded and undertaken several studies of its programme;\textsuperscript{16} it recently reported the results of an online audit of the body weight of all members joining a weekly group between January 2010 and April 2012 (1.2 million people), and reported weight change over the first three months’ attendance.\textsuperscript{17} At baseline, mean weight was 91.3kg, BMI was 32.6kg/m\textsuperscript{2} and 95% of the sample were female. Average weight loss was 4.2kg, although greater weight loss was reported in those who attended more sessions (mean [SD] 6.7[3.6]kg in those attending 75% of sessions) and in men (6.1[4.3%]) compared to women (4.6[3.6%]). Outcomes over the longer term, at 12 months’ follow up, have been described in 45 395 people who completed at least 75% of sessions, and were reported as 12.7kg, with no difference between men and women.\textsuperscript{18} However, attrition rates were not reported in either of these audits and, though a previous 12-week study of 34 271 individuals classified 41.9% of the sample as non-completers,\textsuperscript{19} no data were available about attrition rates over the longer term.

**People with type 2 diabetes.** Slimming World reported the results of an audit of 551 people with type 2 diabetes who responded to an online survey.\textsuperscript{20} Weight loss in those who had attended classes for more than three months (mean attendance 20.6 months) was reported as 11.7kg (10.9%), and this was associated with a 20mmol/mol (1.9%) reduction in HbA\textsubscript{1c} from 68mmol/mol (8.4%) to 48mmol/mol (6.5%). Respondents also recorded reductions in medication and improved quality
of life. Although these results were highly significant, there were some limitations with this study. Firstly, this was a cross-sectional audit of self-reported data with no comparator group. Secondly, no indication was given of the response rate, and Slimming World was unable to supply any data about the total number of members with type 2 diabetes. Thirdly, it is likely that only those who were successful with weight loss responded to the audit and, fourthly, HbA1c results were available of the response rate, and secondly, no indication was given of the response rate, and Slimming World was unable to supply any data about the total number of members with type 2 diabetes. Thirdly, it is likely that only those who were successful with weight loss responded to the audit and, fourthly, HbA1c results were available for just 31% of the sample.

**WeightWatchers**

WeightWatchers is probably one of the best-known global slimming clubs and was founded in the early 1960s by Jean Nidetch, a US housewife who was aiming to lose weight herself and who invited her neighbours to join her. Jean then collaborated with businessman Al Lippert and founded the WeightWatchers empire. WeightWatchers promotes a four-pillar approach: balanced healthy eating, regular physical activity, sustainable behaviour change, and ongoing group support.

WeightWatchers offers a variety of strategies for weight loss including weekly classes, online programmes and postal support at home. Each class is run by a group leader who has successfully lost weight and who receives specific training in behaviour change, diet and physical activity.

**Diet.** WeightWatchers claims that no foods are banned, and allocates points to different foods. People joining WeightWatchers can use either this ProPoints system or the Filling & Healthy Day approach. The ProPoints plan calculates a daily allowance of points according to height, weight, gender and age, and additional weekly points are allowed for treats, snacks or bigger portions. Energy-dense foods that are higher in sugar and fat are allocated more points, and, in order to promote satiety and general health, foods high in lean protein and dietary fibre are allocated fewer points. Members are encouraged to use their points on these ‘Filling & Healthy’ foods (whole grains, lean meat, fish, low-fat dairy, fruit and non-starchy vegetables) and to limit energy-dense foods.

For those who dislike the concept of counting, the Filling & Healthy approach offers a list of high-satiety foods that can be eaten freely. Flexibility is increased by offering alternative approaches along with both plans, including lower carbohydrate, vegetarian, higher carbohydrate, Mediterranean, gluten-free and intermittent fasting diet plans. Meal suggestions and recipes are provided for each approach.

**Physical activity.** WeightWatchers promotes physical activity for successful weight loss, and points can be earned by increasing physical activity. These points can be swapped like-for-like with food points. Use of an activity monitor is recommended to measure amounts of daily activity.

**Behavioural strategies.** WeightWatchers utilises the transtheoretical model of behaviour change, which is probably the best-known theoretical model and which identifies readiness to change by matching the intervention to one of five key stages: precontemplation, contemplation, preparation, action, and maintenance. The key to utilising this model effectively is matching the intervention to the stage of change, and in WeightWatchers this is achieved by goal-setting, action plans, self-monitoring and progress evaluation. Rewards are given for reaching weight loss milestones.

**Efficacy.** WeightWatchers has funded and published a number of evaluations and assessments of its programme over the past 20 years, demonstrating effectiveness over both the short and longer term. An audit of 669 individuals (95% female, mean [SD] body weight 74.9 [11.7] kg, BMI 27.6 [3.6] kg/m²) reported that those who achieved their goal weight lost 10.9 [7.6] kg overall. They regained 2.2 kg at one year, 3.5 kg at two years and 4.7 kg at five years, maintaining an overall loss of 6.2 kg at five years. Assuming that >5% weight loss is clinically significant, then 79.8%, 71% and 50% maintained this target at one, two and five years respectively. Further independent work has shown that WeightWatchers is more effective for weight loss than a self-help programme or standard care, with those using WeightWatchers losing twice as much weight as the comparator groups. Attrition rates for a 12-week course of WeightWatchers undertaken by 26326 individuals as part of the NHS referral scheme were reported as 46%.20

**People with type 2 diabetes.** WeightWatchers was unable to supply any data about current membership in the UK as this is deemed commercially sensitive. Although WeightWatchers is suitable for people with type 2 diabetes, and a proportion of members have diabetes, no formal data on outcomes for people with diabetes are available.

**Other commercial organisations**

Many private companies, apart from the three main commercial providers, are now competing for Tier 2 commissioned weight loss services in the UK. Some of these companies offer a range of lifestyle programmes for tobacco cessation, healthy living and weight loss (e.g. ABL Health, Thrive Tribe) or specialise in weight loss (e.g. Counterweight and MoreLife). The majority of these companies have not published any evaluation of their programmes and were unable to provide data for this review for various reasons, including confidentiality, lack of informed consent for data sharing, commercial sensitivities, access to data and workload. The exception was Counterweight, who have published evidence of efficacy, and who have shown that mean weight change in 1419 individuals at 12 months follow up was -3.0 kg (95% CI -3.5 to -2.4 kg), and at 24 months was -2.3 kg (95% CI -3.2 to -1.4 kg).22 Attrition rates are also reported and, although these appear relatively high (only 45% completed 12 months), they are similar to other community weight loss interventions.

Counterweight has also published evidence of cost effectiveness, and is the only organisation that has reported the proportion of people with type 2 diabetes attending sessions; 14% of participants in
Commerical providers are more effective for weight loss than conventional primary care NHS services in the general population

The efficacy and safety of commercial programmes for people with type 2 diabetes are unclear; only Slimming World has conducted a small audit of people with diabetes

Commercial groups are probably safe and effective for those with diabetes, but there is little published evidence to support this.

**Key points**

- Commercial providers are more effective for weight loss than conventional primary care NHS services in the general population.
- The efficacy and safety of commercial programmes for people with type 2 diabetes are unclear; only Slimming World has conducted a small audit of people with diabetes.
- Commercial groups are probably safe and effective for those with diabetes, but there is little published evidence to support this.

**Discussion**

Apart from a small, self-reported audit by Slimming World, there are no data for the efficacy of commercial weight loss providers for people with type 2 diabetes. All the providers contacted during research for this review either declined or were unable to provide these data. Interestingly, most organisations were also unable to disclose data for those without diabetes and only a handful (Slimming World, WeightWatchers and Counterweight) have published any audit or evaluation.

As audit is an essential part of the evaluation of any programme and private providers are required to meet KPIs (key performance indicators), it is likely that these data are collected, recorded and analysed but they are not in the public domain. At present, it is impossible for an individual with type 2 diabetes to make an informed decision about the most effective commercial programme for weight loss. The most useful information available comes from head-to-head studies, and there are a few independent studies indicating that weight losses do not vary significantly between the main commercial organisations.

The BBC ‘diet trials’ was a randomised controlled trial involving 292 obese (BMI 31.6kg/m²) individuals allocated to Rosemary Conley, WeightWatchers, Slim Fast, the Atkins diet and a control group and followed up for six months.

All interventions produced similar, significant weight loss (-5.9kg), with no differences between the groups in weight loss or rates of attrition. Those allocated to Rosemary Conley lost 6.5kg and those allocated to WeightWatchers lost 6.6kg.

The Lighten Up randomised controlled trial was an eight-arm trial including allocation to Rosemary Conley, Slimming World and WeightWatchers and provided data at the end of a 12-week intervention period and at one year. At the end of the 12-week programme, significant weight loss occurred in the three groups (mean kg [95% CI]): Rosemary Conley 4.37 (3.4–5.4), Slimming World 3.76 (2.9–4.6) and WeightWatchers 4.71 (3.9–5.6) – with no differences between the groups. At one year’s follow up, weight loss was maintained in all three groups, although WeightWatchers was the only programme to show significant weight loss compared to the comparator group.

An audit of NHS slimming on referral in 1057 individuals (BMI mean [SD] 39.7 [6.0]kg/m²) in North Somerset also reported that those attending WeightWatchers were more likely to lose weight than those attending Rosemary Conley and Slimming World. Mean weight losses in those who attended the 12-week programmes were reported as mean kg (95% CI): Rosemary Conley 5.0 (4.3–5.7), Slimming World 4.2 (3.9–4.6) and WeightWatchers 5.4 (4.9–5.8). It is difficult to draw firm conclusions from this study as it was not a randomised controlled trial; it was an observational, non-randomised evaluation with no comparator group, where the participants were encouraged to choose their own programme. Attrition rates for this audit were 63.8% for Rosemary Conley, 55.2% for Slimming World and 44% for WeightWatchers.

The suggestion from these two reports that WeightWatchers was more efficacious than other commercial providers was not supported in a further study employing non-inferiority analysis.

Where does this leave people with type 2 diabetes who wish to lose weight? Lack of evidence of outcomes in people with diabetes limits recommendations, but extrapolation of the published evidence from commercial providers suggests that there is little to choose between them. Attending commercial programmes appears to be more effective than relying on standard weight management support in primary care, but it should be noted that the NHS referral scheme provides a 12-week course free of charge, and there is little available data about how many individuals continue attending groups once they are required to self-finance at the end of the 12-week programme. On average, individuals can expect to lose 3–5kg after completing a 12-week course and, although there is usually some weight regain after this initial period, long-term attrition rates are not known. Over the shorter term, for intervention periods of <12 months, attrition rates (in common with most dietary interventions) are between 40% and 60%, meaning that only half of those who begin a weight loss programme will complete it.

In conclusion, commercial programmes are probably effective for people with diabetes, but there is little published evidence for this. As behavioural factors are the most important predictor of dietary adherence, those with diabetes who are aiming for weight loss should be supported in adopting a dietary plan that they find easiest for long-term adherence.

**Declaration of interests**

There are no conflicts of interest declared.

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