Systematic Review: An Evaluation of Major Commercial Weight Loss Programs in the United States

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Background: **Each year millions of Americans enroll in commercial and self-help weight loss programs. Health care providers and their obese patients know little about these programs because of the absence of systematic reviews.**

Purpose: **To describe the components, costs, and efficacy of the major commercial and organized self-help weight loss programs in the United States that provide structured in-person or online counseling.**

Data Sources: **Review of company Web sites, telephone discussion with company representatives, and search of the MEDLINE database.**

Study Selection: **Randomized trials at least 12 weeks in duration that enrolled only adults and assessed interventions as they are usually provided to the public, or case series that met these criteria, stated the number of enrollees, and included a follow-up evaluation that lasted 1 year or longer.**

Data Extraction: **Data were extracted on study design, attrition, weight loss, duration of follow-up, and maintenance of weight loss.**

Data Synthesis: **We found studies of eDiets.com, Health Management Resources, Take Off Pounds Sensibly, OPTIFAST, and Weight Watchers. Of 3 randomized, controlled trials of Weight Watchers, the largest reported a loss of 3.2% of initial weight at 2 years. One randomized trial and several case series of medically supervised very-low-calorie diet programs found that patients who completed treatment lost approximately 15% to 25% of initial weight. These programs were associated with high costs, high attrition rates, and a high probability of regaining 50% or more of lost weight in 1 to 2 years. Commercial interventions available over the Internet and organized self-help programs produced minimal weight loss.**

Limitations: **Because many studies did not control for high attrition rates, the reported results are probably a best-case scenario.**

Conclusions: **With the exception of 1 trial of Weight Watchers, the evidence to support the use of the major commercial and self-help weight loss programs is suboptimal. Controlled trials are needed to assess the efficacy and cost-effectiveness of these interventions.**

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A joint task force of the National Heart, Lung, and Blood Institute and the North American Association for the Study of Obesity recently issued a guide to the assessment and treatment of obesity (1). It proposed a treatment algorithm in which diet, exercise, and behavior therapy are the cornerstone of weight management. Primary care providers, however, often feel ill equipped to provide the lifestyle modification counseling needed to facilitate weight management (2). As a result, numerous commercial and proprietary weight loss programs have been introduced (3). Practitioners are frequently asked about these programs or may wish to refer overweight persons to them. However, little published information is available to guide practitioners or consumers in the selection of a commercial weight loss program. The advertising claims of commercial programs are monitored by the Federal Trade Commission rather than the U.S. Food and Drug Administration. Programs are not required to submit data on safety or efficacy. However, the Federal Trade Commission may intervene, as it did in the early 1990s (4), when it suspects that manufacturers are making false or misleading claims.

We evaluated the largest commercial and organized self-help weight loss programs in the United States by using the criteria proposed by an expert panel that was convened by the Federal Trade Commission (5). The panel recommended that commercial weight loss programs disclose information about 4 aspects of their interventions: key components of the program, qualifications of staff, costs, and risks of treatment. (Several panel members called for disclosure of outcome data, but some industry representatives indicated that they did not have adequate resources or expertise to provide such data.) These recommendations resulted in publication of the Voluntary Guidelines for Disclosure by Commercial Programs, which were designed to help consumers make informed decisions in selecting a weight loss program (5).

METHODS

Data Sources

We searched the Web sites of commercial weight loss programs for disclosure of program components and costs. If this information was not provided, we telephoned com-

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pany representatives at corporate headquarters. If the representatives could not estimate program costs (principally because of geographic variation), we contacted programs in Philadelphia, Pennsylvania, for estimates. We obtained data on program efficacy by searching the MEDLINE database and manually searching the bibliographies of retrieved articles. These data were supplemented by references from a recent book (6), a descriptive review (7), a summary of industry data (8), and lists of publications received from 2 companies. This review includes any commercial program, available in the United States nationwide, for which a published evaluation of its efficacy met our criteria (specified below). We also describe the components of several national programs that have not been formally evaluated but treat large numbers of persons. Only programs that require regular in-person or online visits were considered. We included 2 organized self-help programs that offer weekly group meetings but, in contrast to commercial programs, are led by lay volunteers and are not for profit. We excluded commercial self-help approaches based on popular books, meal replacement plans, or similar products.

Study Selection

We searched the MEDLINE database for articles published between 1 January 1966 and 1 October 2003 by using the Medical Subject Headings *obesity* and *weight loss,* combined with each of the following terms: *diet, reducing; nutrition; behavior therapy; cognitive therapy; exercise; Internet;* and *self-help groups.* A keyword search was also conducted by combining the terms *weight loss* and *commercial,* and *weight loss* and *proprietary*. We included only studies that treated adults. Randomized trials were excluded if they were conducted outside the United States, assessed fewer than 10 participants, did not state the duration of treatment, or lasted less than 12 weeks. In addition, we included only studies in which the program was assessed under the same conditions in which it is offered to the public. For example, we excluded randomized, controlled trials of very-low-calorie diets that were conducted by investigators at academic institutions, using their own treatment protocols (9–15). We included several case series of medically supervised very-low-calorie diets because only 1 randomized trial met our review criteria. We excluded retrospective case series because such studies obtained follow-up weights for a subset of participants and then reported end-of-treatment results only for this subset, yielding biased data. We excluded case series if they did not provide the total number of patients who began treatment and instead reported only on those who completed treatment. To further increase the quality of the case series selected, we required these studies to include at least a 1-year follow-up assessment after treatment.

We reviewed more than 1500 abstracts or titles of articles. We excluded more than 1400 studies because they did not assess commercial programs or were conducted outside the United States. Of the remaining 108 studies, we excluded 73 because they provided only 1 component (for example, diet) of the commercial program or because follow-up was inadequate, 10 because they lasted less than 12 weeks, 10 because they did not report the number of persons who enrolled in the program to arrive at the number described, and 5 because of miscellaneous reasons (for example, they were earlier evaluations of the same group of patients in a later study). Ten studies met our criteria to be reviewed in detail.

Data Extraction

Both authors reviewed the studies independently; they concurred on inclusion or exclusion in every instance. We extracted data on study type, percentage of participants who completed treatment, weight lost, duration and quality of follow-up, and maintenance of weight loss. This review examines only changes in weight. Data were insufficient to assess changes in obesity-related comorbid conditions that may have improved with weight loss.

Data Synthesis

We used a classification system described elsewhere (16) to characterize programs as nonmedical, medically supervised, or self-help. We added the further category "Internet based." Program components, costs, and efficacy data were summarized for each program, and the results were evaluated. Statistical analyses were not performed because of the limited quantity and quality of the data.

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DATA SYNTHESIS

Nonmedical Commercial Weight Loss Programs

Staff at nonmedical commercial programs include former clients, laypersons trained by the parent company, or degree-trained professionals (such as dietitians) (**Table 1**). These programs do not provide physician supervision. Thus, persons with obesity-related medical complications must be monitored by their own primary care provider when participating in such interventions. Nonmedical commercial programs aim to induce weight loss of 0.4 to 0.9 kg/wk (1 to 2 lb/wk), which is considered a safe rate (1, 17).

Currently, the 3 largest nonmedical commercial programs in the United States are Weight Watchers, Jenny Craig, and L A Weight Loss (18–20). **Tables 1** and **2** show the treatment components and costs of these programs. All 3 programs prescribe a moderately restricted diet and provide behavioral counseling, including recommendations for physical activity. However, the programs differ substantially. Weight Watchers holds large group sessions, whereas Jenny Craig and L A Weight Loss provide individual coun-

Table 1. **Key Components of Selected Commercial and Organized Self-Help Weight Loss Programs**

Program	Staff Qualifications	Diet	Physical Activity	Behavior Modification	Support
Weight Watchers	Successful lifetime member (successful program completer)	Low-calorie, exchange diet; clients prepare own meals	"Get Moving" booklet distributed	Behavioral weight control methods	Group sessions, weekly meetings
Jenny Craig	Company-trained counselor	Low-calorie diet of prepackaged Jenny Craig meals only	Audiotapes for walking	Manual on weight loss strategies provided	Individual sessions, weekly contact
L A Weight Loss	Company-trained counselor	Low-calorie diet; clients prepare own meals	Optional walking videotape	Included in counseling sessions	Individual sessions 3 times weekly
Health Management Resources	Licensed physician and other health care providers	Low-calorie or very-low-calorie diet provided through meal replacement products	Walking and calorie charts provided in lifestyle classes	Included in lifestyle classes; accountability and skill acquisition emphasized	Group sessions and weekly classes; some telephone support
OPTIFAST	Licensed physician and other health care providers	Low-calorie diet provided through meal replacement products	Physical activity modules taught in lifestyle classes	Included in lifestyle classes; stress management and social support emphasized	Group sessions and weekly classes; some telephone support
Medifast/Take Shape for Life	Not applicable	Low-calorie or very-low-calorie diet provided through meal replacement products	May be included in Take Shape for Life	May be included in Take Shape for Life	Included in Take Shape for Life
eDiets.com	Company-trained counselor and company dietitians	Low-calorie diet provided through "virtual dietitian" program; clients prepare own meals	Physical activity seminar as part of eDiets.com University	Included in eDiets.com University; stress management emphasized	Individual and group Internet support
Take Off Pounds Sensibly	Group leader elected by local chapter	Low-calorie diet exchange plan recommended	Members make plan with their health care provider	Included in curriculum	Group format; weekly sessions
Overeaters Anonymous	Volunteer chapter leaders	No specific recommendation	Members make plan with their health care provider	12-step program	Group format; weekly sessions; sponsors

seling. Jenny Craig also offers telephone counseling 24 hours a day, 7 days a week, as needed. Jenny Craig requires clients to purchase the company's prepackaged meals, whereas participants in Weight Watchers and L A Weight Loss consume a self-selected diet of conventional foods. The timing of payment also differs: Participants in Weight Watchers may pay weekly, whereas participants in Jenny Craig and L A Weight Loss must provide substantial payment up front (**Table 2**).

Outcome Data

Randomized Trials. Weight Watchers has sponsored 3 randomized, controlled trials of its program. We found no such evaluations of Jenny Craig or L A Weight Loss. In a multicenter study, Heshka and colleagues (21) randomly assigned 423 participants to attend Weight Watchers weekly or to participate in a self-help intervention that included 2 visits with a dietitian (**Table 3**). The overall attrition rate was 27% at 2 years and was similar in both groups. Participants in Weight Watchers lost 5.3% of their initial weight at 1 year and maintained a loss of 3.2% at 2 years, compared with 1.5% and 0%, respectively, among those who received the self-help intervention ($P < 0.001$ at both time points). Participants in Weight Watchers who attended the most group sessions over the 2-year study period maintained the largest weight losses at the end of this period; this finding underscores the importance of adherence to behavior strategies.

In a single-site study, 48 women with a history of breast cancer were randomly assigned to receive usual care, attend a weekly group Weight Watchers meeting, undergo individual counseling with a dietitian, or receive both of the latter 2 interventions (22). The attrition rate across the 4 groups was 19% at 1 year; the investigators did not state whether this rate differed among groups. At 1 year, participants who received usual care gained 0.9 kg (2 lb), whereas participants in Weight Watchers lost 2.6 kg, those who had individual counseling lost 8.0 kg ($P < 0.05$ versus usual care), and those who both attended Weight Watchers and had individual counseling lost 9.4 kg ($P < 0.05$ versus usual care). Thus, in this small sample, Weight Watchers had no incremental benefit compared with usual care or as an adjunct to individual counseling.

In the third study, 80 women were randomly assigned to attend Weight Watchers or receive usual care (23). At 12 weeks, attrition rates were 25% and 65%, respectively.

Participants lost 7.5% and 1.6%, respectively, of initial weight ($P < 0.001$). Follow-up data were not collected.

Case Series. Two case series of Weight Watchers (33, 34) and 1 of Jenny Craig (35) have been published. All 3 studies were retrospective case series and thus are not reviewed here. We found no published evaluation of L A Weight Loss.

Summary

Two randomized trials found that persons who regularly attended Weight Watchers lost approximately 5% of initial weight over 3 to 6 months (21, 23). Losses of this size may be associated with improvements in obesity-related health complications (1, 17, 36–39), even if some weight is regained (38). Controlled trials are needed to determine the amount of weight lost and health benefits associated with the Jenny Craig and L A Weight Loss programs. In addition, naturalistic studies of all 3 programs are needed. Such investigations would follow a large cohort that enters a weight loss program and determine the percentage of persons who complete 1, 3, 6, 9, and 12 months of treatment and the amount of weight lost at the time of discontinuation (6). Such data would capture the manner in which overweight and obese persons use commercial weight loss programs. For example, 1 study found that 50% of participants stopped attending Weight Watchers meetings in the first 6 weeks and 70% stopped within the first 12 weeks (40).

Weight Watchers, at $12 per week, is moderately priced, whereas the weekly costs of Jenny Craig's prepackaged meals ($70 to $100) make it expensive. The costs of L A Weight Loss are difficult to determine (**Table 2**).

Medically Supervised Proprietary Programs

Medically supervised proprietary programs provide care from a physician, which makes them appropriate for persons with obesity-related complications. The largest proprietary programs have traditionally used very-low-calorie diets (<800 kcal/d) (17) with a high protein intake, (70 to 100 g/d) to preserve lean body mass. These diets

Table 2. **Estimated Program Costs for Commercial and Organized Self-Help Weight Loss Programs***

Program	Membership Fee or Initial Cost	Periodic Fees	Meal Plan	Other	Estimated Cost of 3-Month Program†
Weight Watchers	$35 for first week (with membership fee)	$12/wk, on a pay-as-you-go basis	Not required	None	$167
Jenny Craig	$199 for 6 mo, $364 for 1 y	None	$70–$105/wk ($10–$15/d)	$10 for 2nd of 2 weight loss manuals	$1249
L A Weight Loss	$88	Upfront costs of $7/wk multiplied by the number of weeks calculated to reach goal weight	None	$10 for optional walking videotape	Not calculated‡
Health Management Resources	$63–$240 for medical evaluation	$50/wk for medical visits and behavior modification classes; $210 for laboratory tests	$65/wk–$86/wk for very-low-calorie-diet plan	Maintenance visits at extra cost	$1700–$2100
OPTIFAST	$150–$300 for medical evaluation	$35/wk for medical visits, $10/wk for behavior modification classes, $210 for laboratory tests	$97/wk for "full fast" meal replacement	Maintenance visits at extra cost	$1800–$2000
Medifast/Take Shape For Life	None	Not required	$70/wk or $56/wk (full or partial meal replacement)	Physician visits at extra cost	$840§
eDiets.com	None	$65/3 mo‖	None	Individual counseling with experts at extra cost	$65
Take Off Pounds Sensibly	$20/y	$0.50 to $1/wk	None	None	$26
Overeaters Anonymous	None	Donations	None	None	$0

* Costs were estimated from discussions with company representatives and calls to programs in the Philadelphia area. They may vary within the same program from site to site and by geographic region. Costs were provided by individual companies between 1 September and 1 October 2003 and were confirmed between 16 November and 23 November 2004. Costs should be considered approximate and subject to change (with special offers, incentives, and other considerations). For the sake of comparison, we estimated the total cost of participating in each program for 3 months.

† The estimated cost includes charges for the first visit (for example, membership fee or initial evaluation) and 12 weeks of subsequent visits. "Other" costs are not included in the estimated cost for the 3 months.

‡ Costs of L A Weight loss were not estimated because information was insufficient. Applicants are provided a goal weight at their initial evaluation and are requested at that visit to pay for the number of weeks of consultation required to reach their goal, at $7 per week. Persons who withdraw early are reimbursed for unused visits, minus a fee of $149.

§ Costs are estimated for the full meal replacement plan.

‖ Cost is $42/3 mo if paid online.

Table 3. **Summary of Results for Commercial and Organized Self-Help Weight Loss Programs***

Program (Reference)	Study Design	Sample Characteristics			Duration
		Pariticipants, *n*	Mean Initial Body Mass Index or Weight	Women, %	
Weight Watchers (21)	Multisite randomized trial	423	33.7 kg/m^2	85	2 y
Weight Watchers (22)	Single-site randomized trial	48	35.5 kg/m^2	100	12 wk
Weight Watchers (23)	Single-site randomized trial	80	30.5 kg/m^2	100	12 wk
Health Management Resources (24)	Single-site randomized trial	40	104.7 kg (228.8 lb)	48	12 wk
OPTIFAST (25)	Multisite, prospective case series of consecutive participants	517	38.1 kg/m^2	79	26 wk
OPTIFAST (26)	Single-site, prospective case series of consecutive participants	306	38.2 kg/m^2**	74	26 wk
Health Management Resources (27)	Single-site, prospective case series of consecutive participants	100	100.4 kg (220.9 lb)	79.4	20 wk
Health Management Resources (28)	Single-site case series of consecutive patients with morbid obesity	85	45.5 kg/m^2	69	26 wk
eDiets.com (29)	Single-site randomized trial	46	33.5 kg/m^2	100	1 y
TOPS (30)	Multisite randomized trial	234	81.9 kg (180.2 lb)	Not given	12 wk

* TOPS = Take Off Pounds Sensibly.
† Maximum initial weight change is given for persons who completed treatment, unless otherwise specified. Weight change was calculated as the percentage of the participant's initial body weight lost.
‡ Overall value; differences by group were not significant.
§ Overall value; differences by group were not given.
‖ Data based on 92% of the original sample. Separate results for each group were not given.
¶ Data based on 43% of the original sample.
** Calculated from an earlier evaluation of the same group of patients (30).
†† Among all persons entering treatment.
‡‡ Data based on 47% of the original sample.
§§ Data based on 58% of the original sample.
‖‖ Data based on 74% of the original sample.
¶¶ See reference 31.

typically induce mean weight loss of 1.4 kg or more weekly (≥3 lb weekly) for the first few months and are associated with an increased risk for gallstones, cold intolerance, hair loss, and constipation (41). These symptoms are usually mild and readily managed. Very-low-calorie diets are considered safe when administered to appropriate persons under careful medical supervision, as discussed by the National Task Force on the Prevention and Treatment of Obesity (41).

The largest medically based proprietary programs are OPTIFAST (Novartis Nutrition, Minneapolis, Minnesota), Health Management Resources (Health Management Resources, Boston, Massachusetts), and Medifast (Jason Pharmaceuticals, Inc., Owings Mills, Maryland).

Table 3—**Continued**

Treatment Regimen	Weight Change, %†		Attrition Rate, %	
	Maximum	Long-Term	Initial	Long-Term
Weight Watchers group	5.3 at 26 wk	3.2 at 2 y	18 at 1 y‡	27 at 2 y‡
Self-help, with 2 visits with a dietitian	1.5 at 26 wk	0 at 2 y	18 at 1y‡	27 at 2y‡
Usual care	Not given	0.9 at 1 y	Not given	19 at 1 y§
Weight Watchers	Not given	−2.7 at 1 y	Not given	
Individual counseling	Not given	−8.4 at 1 y	Not given	
Weight Watchers plus individual counseling	Not given	−9.9 at 1 y	Not given	
Weight Watchers	−7.5 at 12 wk	Not applicable	25	Not applicable
Usual care	−1.6 at 12 wk	Not applicable	65	Not applicable
Very-low-calorie diet using meal replacements	−15.3 at 12 wk	−8.4 at 1 y§‖	0	7.5 at 1 y§
Very-low-calorie diet, using meal replacements and usual table foods	−14.1 at 12 wk	−8.4 at 1 y§	2.5	7.5 at 1 y§
Group counseling and 12 wk of a very-low-calorie diet	−21.8 at 26 wk	−9.0 at 1.5 y¶	45	57 at 1.5 y
Group counseling and 12 wk of a very-low-calorie diet	−19.9 at 26 wk††	−4.7 at 4.5 y‡‡	56	53 at 4.5 y
Group counseling and 12 to 17 wk of a very-low-calorie diet	−19.2 at 15.5 wk††	−7.3 at 3.4 y§§	31	42 at 3.4 y
Group counseling and 13 wk of a very- low-calorie diet	−27.3 at 26 wk††	−15.2 at 2 y‖ ‖	19 at 13 wk	26 at 2 y
eDiets.com	−0.9 at 16 wk††	−1.1 at 1 y††	34 at 16 wk‡	34 at 1 y‡
LEARN Program for Weight Management 2000¶¶	−3.6 at 16 wk††	−4.0 at 1 y††	34 at 16 wk‡	34 at 1 y‡
Behavior therapy, therapist	−2.3 at 12 wk	−3.2 at 1 y	Not given	38 at 1 y
Behavior therapy, TOPS leader	−1.0 at 12 wk	0.0 at 1 y	Not given	41 at 1 y
Nutrition therapy, TOPS leader	−0.1 at 12 wk	1.0 at 1 y	Not given	55 at 1 y
Usual TOPS program	0.4 at 12 wk	1.6 at 1 y	Not given	67 at 1 y

OPTIFAST and Health Management Resources share several components (**Table 1**). Both offer a 3-phase meal replacement and lifestyle modification program consisting of 12 to 18 weeks of rapid weight loss, a 3- to 8-week transition phase, and long-term maintenance (42, 43). Both programs provide mandatory medical monitoring during the first 2 phases. The 2 programs differ in the type of diet offered. OPTIFAST originally provided a very-low-calorie diet (420 kcal/d) but now recommends a low-calorie diet (≥800 kcal/d). Health

Management Resources offers both very-low-calorie and low-calorie diet plans. (Most clients of Health Management Resources currently use the low-calorie diet plan.) Medifast offers both very-low-calorie and low-calorie meal replacement plans, which participants may purchase directly from the manufacturer (44). Medifast states that its very-low-calorie diets require medical monitoring (44), but the company does not require written documentation of medical monitoring for clients to purchase its meal replacements. Thus, Medifast is not consistently provided to consumers in accordance with guidance suggested by the National Task Force on the Prevention and Treatment of Obesity (41). The Cambridge Diet is another very-low-calorie diet marketed to the public that does not mandate medical supervision (45). Serious complications, including death, have been reported in obese persons who consumed very-low-calorie diets without medical supervision (46). Participation in lifestyle modification classes is mandatory in OPTIFAST and Health Management Resources, whereas Medifast offers optional counseling through its Take Shape For Life subsidiary.

Outcome Data

Randomized Trials. Numerous investigators at academic institutions have conducted randomized, controlled trials of very-low-calorie diets using their own specialized protocols. Only 1 trial appeared to assess the efficacy of a proprietary-based program, as typically offered to the public (24). Investigators randomly assigned 40 obese patients with type 2 diabetes to receive 1 of 2 diets of 800 kcal/d. One diet provided only liquid meal replacements from Health Management Resources, and 1 offered meal replacements and 1 meal of conventional foods daily. Both groups received intensive training in lifestyle modification, according to the standard program guidelines of Health Management Resources (24). At the end of 12 weeks, participants who received only meal replacements lost 15.3% of their initial weight, whereas those who had 1 conventional meal daily lost 14.1%. Attrition rates were 0% and 2.5%, respectively. Ninety-two percent of the total sample participated in a 1-year follow-up evaluation, at which time a loss of 8.4% was maintained (**Table 3**). Separate results for each group were not given.

Case Series. Numerous case series have reported on the Health Management Resources and OPTIFAST programs and the diets manufactured by the companies (47–52). Two case series of OPTIFAST met our criteria for detailed review (25, 26). A study conducted at 18 sites evaluated 517 persons who entered the OPTIFAST program (25). The attrition rate was 45% at the end of 26 weeks, which included 12 weeks of a very-low-calorie diet. Persons who completed treatment lost 21.8% of initial weight, compared with 11.3% for persons who dropped out. Only 43% of the original sample participated in a 1-year follow-up evaluation; these participants maintained a loss of 9.0% of their initial weight (**Table 3**). A single-center study assessed 306 persons treated with OPTIFAST (26). The attrition rate was 56% during 26 weeks of treatment. Participants lost 19.9% of initial weight (individuals who completed treatment lost 24.3%, and dropouts lost 16%). Forty-seven percent of the initial sample participated in a 4-year follow-up evaluation, at which time participants maintained a loss of 4.7% of initial body weight (**Table 3**). Attrition was lower at follow-up because some patients who dropped out of treatment were recaptured at 4 years.

Two case series of the Health Management Resources program met our criteria for detailed review (27, 28). In 1 of the studies, 100 consecutive patients at a single center participated in a program that included 12 to 17 weeks of a very-low-calorie diet (27). Overall, participants lost a mean of 19.2% of their initial weight at week 16, and the attrition rate was 31% at week 20. Rates of weight loss were not provided separately for participants who dropped out and those who completed treatment. Fifty-eight percent of the original sample participated in a 3.4-year follow-up evaluation, at which time these participants maintained a loss of 7.3% of their initial weight (**Table 3**). In another single-center case series, 85 morbidly obese patients enrolled in Health Management Resources were treated for an average of 26 weeks, including 13 weeks of a very-low-calorie diet (28). The attrition rate during treatment was 19%, and participants lost 27.3% of their initial weight. Patients were encouraged to participate in an 18-month weight maintenance program that provided weekly small group meetings and emphasized continued monitoring of food intake and physical activity. Seventy-four percent of the original sample participated in a 2-year follow-up, at which time they maintained a loss of 15.2% of their initial weight (**Table 3**).

We did not review other reports of the OPTIFAST and Health Management Resources programs because of their methodologic limitations. The Web site for Medifast reports the abstracts of 2 studies, but neither of these has been published as a full report.

Summary

Studies of Health Management Resources and OPTIFAST suggest that persons who complete a comprehensive program providing a low-calorie or very-low-calorie diet can expect to lose approximately 15% to 25% of their initial weight during 3 to 6 months of treatment and may maintain a loss of 8% to 9% 1 year after treatment, 7% at 3 years, and 5% at 4 years (24, 28, 31). (Morbidly obese patients lost a greater percentage of their initial weight and, with intensive weight maintenance therapy, sustained a larger long-term loss.) These results, however, clearly represent a best-case scenario. They do not include the substantial percentage of persons who did not complete treatment or declined to participate in follow-up assessments.

Weight losses were not adjusted by using a baseline-carried-forward analysis (or another method) to account for dropouts who, with all obesity therapies, can be expected to have a poorer outcome than do persons who complete treatment (53). In addition, the use of self-reported weights in 2 of the 3 studies of Health Management Resources probably resulted in overestimation of program efficacy.

A full assessment of the benefits of Health Management Resources or OPTIFAST would require a randomized trial in which participants were assigned to a (very) low-calorie liquid diet or to a comparison condition, such as a balanced deficit diet of conventional foods that provided 1200 to 1500 kcal/d. Ideally, changes in weight and health outcomes should be examined for at least 2 years (and preferably 5 years), and economic analyses should be included in view of the substantial costs of medically supervised programs. Some investigators have argued in favor of very-low-calorie diets, noting that the larger the initial weight loss, the larger the loss sustained several years after treatment (54, 55). However, the expert panel convened by the National Heart, Lung, and Blood Institute (17) did not recommend the use of very-low-calorie diets after reviewing randomized trials from academic institutions that showed no long-term (≥1 year of follow-up) advantage of very-low-calorie diets over conventional diets providing 1200 to 1500 kcal/d (56–64).

If patients follow a low-calorie or very-low-calorie diet, they should participate in a comprehensive weight maintenance program, as suggested by results of a study by Anderson and colleagues (24). (Other maintenance studies, however, have yielded less favorable results [65–67].) Long-term use of meal replacements (68, 69) and weight loss medications (70) may also facilitate maintenance of weight loss achieved with a very-low-calorie diet.

OPTIFAST and Health Management Resources are both expensive, with costs of approximately $1700 to $2200 for the first 3 months (**Table 2**). Medifast is much less expensive (approximately $840 for 3 months) because of its lack of mandatory medical monitoring or behavior modification. We reiterate, however, that medical supervision is critical to the safe use of very-low-calorie diets.

Internet-Based Commercial Weight Loss Programs

Internet-based interventions are the most recent development in commercial weight loss programs. We discuss eDiets.com because it is the only Internet-based commercial program on which a study has been published. Other programs include Nutrisystem.com, Weight Watchers Online, WebMD, Dietwatch.com, Caloriescount.com, a-personaldietitian.com, and mddiets.com. Shape Up America, a nonprofit weight management organization, provides a list of online programs on its Web site (www.shapeup.org).

eDiets.com provides clients with lists of low-calorie recipes and foods based on dietary preferences (71). Clients may choose from among 13 diets, for which they purchase and prepare their own foods. All of the meal plans prescribe low-calorie diets that are designed to induce weight loss of 0.5 to 0.9 kg/wk (1 to 2 lb/wk), a rate similar to the target of the nonmedical programs. The company also offers online chats with other clients and free e-mail advice from company experts, including psychologists and dietitians. eDiets.com charges $65 for 3 months (**Table 2**).

Outcome Data

A randomized trial (29) assessed the efficacy of eDiets.com as available on the Internet from February 2001 to September 2002, compared with treatment with a behavioral weight loss manual (LEARN Program for Weight Management 2000) (32). At 1 year, participants in eDiets.com lost 1.1% of their initial weight, and those who used the weight loss manual lost 4.0% ($P = 0.04$, as determined by last-observation-carried-forward analysis) (**Table 3**). These results probably represent a best-case scenario concerning the efficacy of eDiets.com (as well as the manual) because participants were provided 11 on-site assessment visits at which they were weighed, as well as 5 brief consultations with a psychologist. Such visits are likely to enhance motivation and adherence to recommendations for diet and activity modification.

Summary

Currently, minimal evidence exists to recommend the use of commercial Internet-based interventions. Larger controlled studies are needed to assess the efficacy of eDiets.com and other Internet-based weight loss programs. Studies of 2 noncommercial Internet-based programs, both of which were conducted at an academic medical center, suggest that participants should be encouraged to keep daily records of their food intake and physical activity, as they do when attending a behavioral weight loss clinic (72, 73). Participants who followed this practice and who received regular feedback by e-mail from a counselor lost nearly twice as much weight as did participants who received only information on proper eating and activity habits (approximately 4.5 kg [9.9 lb] versus 2 kg [4.4 lb]). It is not known whether commercial Internet-based programs can obtain these results.

Organized Self-Help Programs

Organized self-help programs for weight control vary in treatment philosophy and technique but are consistent in charging no fee or only a nominal one (6). These programs are conducted by laypersons, all of whom have struggled with their weight or with eating problems. Self-help programs are based on the belief that persons who have the same condition can provide empathy and support.

The 2 largest organized self-help programs of which we are aware are Take Off Pounds Sensibly (TOPS) and Overeaters Anonymous. Both groups are not for profit and are organized and led by volunteers. However, their ap-

proaches to weight loss differ. TOPS recommends a low-calorie exchange diet and provides a curriculum on diet, physical activity, and behavior modification (74). The organizers of Overeaters Anonymous believe that obesity results from compulsive eating, which, in turn, is considered the consequence of sadness, loneliness, and other untoward emotions (75). Participants frequently report that they are addicted to food. The program seeks to guide participants to physical, emotional, and spiritual recovery. The philosophy and 12-step approach of Overeaters Anonymous are similar to that of Alcoholics Anonymous.

Outcome Data

The TOPS Web site states that its members lost 1 325 977 pounds in 2002, which is approximately 2.6 kg (5.8 lb) per member (74). These data were reportedly derived from weekly weigh-ins, and we could not determine their accuracy. No recent report of TOPS has been published. More than 30 years ago, Levitz and Stunkard (30) evaluated 16 chapters of TOPS and showed that behavior modification provided by a professional therapist was associated with greater weight loss and lower attrition at 1 year than was the TOPS program (**Table 3**). Results of this study apparently contributed to the decision to incorporate behavior modification in the TOPS program. We found no published evaluations of the efficacy of Overeaters Anonymous for weight loss.

Summary

Scientific evidence is minimal to recommend the use of the best-known organized self-help programs, although promising results have been reported for a highly structured program offered in Philadelphia (76). Rigorous studies of self-help are unlikely to be conducted, given that such programs have limited financial resources. It would be difficult, however, to discourage a patient from attending self-help programs, in which the costs and risks of participation appear minimal. On the basis of the second author's experience in reviewing patients' dieting histories, we believe that a substantial minority of individuals will lose 5% or more of their initial weight in such programs. Overeaters Anonymous seems most appropriate for patients who seek intensive emotional support in losing weight. Such persons should be advised to sample different Overeaters Anonymous groups, because each apparently has its own character. TOPS appears to be similar to Weight Watchers in its use of group support, weekly weigh-ins, and a modest hypocaloric diet.

DISCUSSION

Weight Watchers is the only commercial weight loss program whose efficacy has been demonstrated in a large, multisite, randomized, controlled trial (21). It produces a mean loss of approximately 5% of initial weight, which may be sufficient to prevent or ameliorate weight-related health complications (17, 38, 39). Weight Watchers is moderately priced but is still beyond the financial reach of many persons. TOPS and Overeaters Anonymous are important options for such persons, despite the lack of documented efficacy. Scientific evidence is insufficient to recommend Internet-based commercial programs.

Studies of OPTIFAST and Health Management Resources, of which only 1 was a randomized trial, indicate that these programs induce losses of approximately 15% to 25% of initial weight in persons who complete 3 to 6 months of treatment (24–28). Medically supervised programs are expensive, and the expert panel of the National Heart, Lung, and Blood Institute did not recommend them over less costly interventions that induce more gradual weight loss (17). Medically supervised programs may be appropriate in select cases, such as patients with a BMI of 30 kg/m^2 or greater, in whom the presence of health complications warrants more aggressive weight loss and medical care.

The guide developed by the National Heart, Lung, and Blood Institute and North American Association for the Study of Obesity, as well as another recent publication (77), should assist primary care providers in determining which of their patients have the greatest need for weight reduction. Practitioners can support patients' participation in commercial or organized self-help programs by reviewing changes in weight and health complications at office visits and by monitoring patients' efforts to improve their eating and activity habits (6). Successes should be praised, whereas setbacks should be met with empathy for the patient's probable disappointment and with encouragement to maintain weight control efforts.

After reviewing this article, some health care providers may conclude that evidence is inadequate to recommend commercial or self-help programs. The evidence is clearly modest. However, such an assessment would not relieve providers of the need to assist patients with weight control. Neither practitioners nor their patients can afford to overlook the epidemic of obesity, with its profound health and economic consequences.

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