HHS Public Access

Author manuscript

Curr Obes Rep. Author manuscript; available in PMC 2022 June 01.

Published in final edited form as:

Curr Obes Rep. 2021 June ; 10(2): 90–99. doi:10.1007/s13679-021-00428-y.

Commercial weight-loss programs in the management of obesity: an update

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Abstract

Purpose of Review—Comprehensive lifestyle programs are cornerstones of obesity management, but clinician referrals may be limited by program availability. Commercial weight-loss programs may be an alternative, but clinicians may be unaware of their efficacy and safety. This review describes the evidence for commercial programs, particularly 12-month weight loss, among individuals with obesity.

Recent Findings—Several programs are concordant with evidence-based recommendations (i.e., lower-calorie diet, increased physical activity, and behavioral strategies). Among the guideline-concordant programs, National Diabetes Prevention Program, WW, Jenny Craig, Medifast and OPTIFAST have demonstrated 12-month weight-loss efficacy and safety. While other programs show promise, more evidence is needed before clinician referral may be recommended.

Summary—Clinical practice guidelines support referrals to commercial weight-loss programs that have peer-reviewed evidence to support their efficacy and safety. Clinicians should consider the available evidence, patient preference, and cost when considering referrals to these programs for weight management.

Keywords

Weight Reduction Programs; Obesity; Review; Treatment Outcome

Introduction

Multiple adult weight management guidelines recommend that individuals with obesity participate in a comprehensive lifestyle program for first-line treatment as sustained, modest weight reductions improve cardiometabolic outcomes (1–4). For programs to be in

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Conflicts of Interest/Competing Interests: KAG is a paid consultant for Eli Lilly Inc.

accordance with these guidelines, they must encourage a reduced calorie diet and increased physical activity combined with behavioral strategies such as self-monitoring. Recommended program intensity varies between guidelines ranging from moderate (12 sessions over 12 months) to high intensity (≥14 sessions over 6 months). While such programs are evidence-based, physicians may experience difficulty locating local programs that meet these criteria. One study found that only 19% of community-based weight-loss programs had high concordance with guidelines from the American Heart Association/ American College of Cardiology/The Obesity Society (5). Given this challenge, patients and clinicians might consider a commercial weight-loss program, as they are widely available throughout the United States and beyond. In fact, guidelines state that commercial weight-loss programs may be prescribed provided there is peer-reviewed evidence to support their efficacy and safety (1,4).

In this article, we synthesize the evidence from randomized controlled trials (RCTs) for commercial weight-loss programs with an emphasis on 12-month weight and safety outcomes. We focus on studies testing these programs in general populations with overweight/obesity, as these groups are most applicable to most clinical practices. We also examine 12-month glycemic outcomes among patients with type 2 diabetes mellitus. We first begin this review by discussing the National Diabetes Prevention Program, which is a widely available evidence-based weight loss program for individuals at-risk for type 2 diabetes mellitus. This program, certified by the Centers for Disease Control and Prevention (CDC), is a covered benefit for Medicare beneficiaries (6–7). Then, we will summarize information for widely available commercial weight-loss programs: WW (formerly Weight Watchers), Jenny Craig, Nutrisystem, Health Management Resources (HMR), Medifast, and OPTIFAST. We will also summarize evidence for new online or app-based platforms including Lose It!, My Fitness Pal, Noom, and Omada Health, as well as a proprietary community-based program, Taking Off Pounds Sensibly (TOPS). Table 1 provides an overview of each program described, including attributes and 12-month weight-loss efficacy.

The National Diabetes Prevention Program

The National Diabetes Prevention Program (DPP) is CDC-recognized program aimed at preventing or delaying the onset of type 2 diabetes in high-risk patients. While this is not a traditional commercial weight-loss program, it bears discussion given its core components, widespread availability and demonstrated efficacy.

The DPP study was a multicenter randomized controlled trial that evaluated the ability of a structured intensive lifestyle intervention to delay or prevent the onset of type 2 diabetes in high-risk subjects (8). Persons with overweight and elevated fasting and post-load plasma glucose levels without a diagnosis of diabetes were randomized to receive placebo, metformin or an intensive lifestyle program with the aim of achieving at least a 7% weight loss and at least 150 minutes of physical activity per week. Study results revealed that participants in the lifestyle program who achieved 5–7% weight loss reduced their risk of developing diabetes by 58%, and this reduction was significantly greater than that noted with placebo or metformin. Fifty percent of persons had achieved 7% weight loss at study completion. At 10 and 15 years of follow up, development of diabetes was delayed by 34%

and 27%, respectively, whereas delays by 18% were noted in the metformin group at both time points (9–10). Attrition was less than 20% in the original study period and with long-term follow-up. The Community Preventive Services Task Force concluded that there was strong evidence that combined diet and physical promotion programs are effective and cost-effective to prevent and control type 2 diabetes mellitus, and recommended such interventions for individuals at increased risk for developing type 2 diabetes (11).

Serious adverse events were rare. Death and hospital admission occurred at rates of 0.1 and 8.0 per 100 person-years, respectively, and were not attributed to treatment (8). Musculoskeletal symptoms were reported at a rate of 24.1 per 100 person-years in lifestyle intervention participants (8).

In 2010, congressional leadership authorized the CDC to establish the National DPP given the evidence demonstrating its effectiveness in preventing or delaying the onset of type 2 diabetes in high-risk persons (6). Presently, patients with overweight/obesity and either 1) diagnosed prediabetes or 2) meet risk criteria for type 2 diabetes that can be calculated online at https://www.cdc.gov/prediabetes/takethetest/index.html?prediabetes-risk-test-001 are eligible for enrollment in one of over 1,500 programs available nationwide (12). This program is also a covered benefit for eligible Medicare beneficiaries (7), and insurance coverage for this program is growing among other insurers. Insurance coverage may reduce the financial barriers to participation for patients, in particular low-income groups.

In summary, published evidence has supported the long-term effectiveness of the DPP to safely reduce weight and delay the onset of diabetes in persons with overweight/obesity and prediabetes. This program should be considered for all eligible individuals, particularly Medicare beneficiaries or others with insurance coverage for this program.

WW (Weight Watchers)

WW is a high-intensity weight loss program that includes dietary monitoring through “SmartPoints”; body weight and physical activity tracking; and participation in individual, group or online support sessions. WW is offered directly to consumers in person or online through web- or app-based portals. Costs vary based on services accessed, and clinicians should note that the program fees do not include the cost of food. In cost-effectiveness analyses that accounted for food costs, WW was the most cost-effective program compared to other commercial programs assessed (13–14). WW presently captures 33.2% and 23.1% of the market share for commercial weight-loss and online weight-loss services in the United States, respectively (15).

Published RCTs have demonstrated that WW participants participating in the in-person program achieved weight losses ranging between 3.1 to 5.5% at 12 months, and these reductions were significantly greater than controls (16–17). In a meta-analysis of randomized trials, WW participants were estimated to lose an average of 5.9 kg at 12 months compared to no diet control subjects (18). Of particular relevance to clinicians, one RCT found that WW participants lost more weight than subjects who received counseling from a primary care physician (19). Interestingly, weight loss benefits of participating in

WW may extend beyond the individual taking part in the program. A recent study found that domestic partners of WW participants, who did not directly participate, also lost weight (20). Few studies have examined the efficacy of the WW Online (WWO) program. One RCT found no significant 12-month weight loss difference between WWO and control (21), which suggests that the in-person element of the WW program may be key.

Studies have examined factors associated with weight maintenance among WW participants. Duration of participation in WW appears critical to long-term weight-loss success. A recent study found greater weight loss following a 52-week versus a 12-week WW program (12-month weight change difference: −2.1 kg, 95%CI −3.1 to −1.2)(22), and this between group difference remained statistically significant at 24 months. Other studies have investigated the potential role of self-weighing and text message reminders combined with financial incentives for weight-loss maintenance among successful WW participants (23–24). The addition of financial incentives did not influence weight maintenance beyond self-weighing and text message reminders alone.

The in-person WW program has also been tested among individuals with prediabetes in an RCT comparing to a diabetes education program (25–26). WW participants lost significantly more weight than controls at 12 months (5.5% vs 0.2%), but there was no significant difference in A1c change at 12 months (−0.25% vs −0.18%; p=0.068)(25). A continuation of this RCT was conducted that allowed diabetes education program participants to crossover into the WW intervention. At 18 and 24 months, participants originally randomized into WW had persistent weight reductions (−5.1% and −4.5% from baseline, respectively) and persistent A1c declines (−0.27% and −0.3%, respectively)(26). We do note that this continuation study had substantial loss to follow up; therefore, results may represent a more motivated population and not be generalizable to all individuals with overweight and prediabetes.

When serious adverse events were reported, none were attributed to WW participation (16). No additional harmful outcomes were reported in recent RCTs. Of the RCTs evaluated, 8 were intention-to-treat (ITT) and 5 were completers' analyses. Attrition, when reported, varied across trials and ranged from 0–65% and 2–39% in the comparator and WW intervention arms, respectively.

In summary, WW has clear evidence to support its efficacy and safety in achieving modest, sustained weight loss among individuals with overweight/obesity. There is preliminary evidence to support that greater weight reductions are observed with longer duration of participation in the WW program.

Meal Replacement Programs

Jenny Craig

Jenny Craig is a high-intensity weight-loss program that comprises prepackaged meal replacements along with recommendations for increased physical activity and participation in individual, group or online counseling sessions. Jenny Craig is offered directly to consumers at brick-and-mortar locations and through online and mobile app platforms. Cost-

effectiveness analyses found WW to be superior to Jenny Craig (13–14). In 2014, Jenny Craig held 13% of the market share for U.S. commercial weight-loss services (16). More recent market share data is not available; however, Jenny Craig currently captures 23.1% of the market share for online weight-loss services (15).

Among RCTs that have evaluated weight-loss efficacy of Jenny Craig, participants achieved weight reductions ranging between 7.1 and 10.9% at 12 months of follow-up in ITT analyses (16–17). These reductions were significantly greater than control or counseling groups at both time points. Attrition ranged from 0–16% in all trials reviewed. In a meta-analysis, Jenny Craig participants were estimated to lose an average of 6.4 kg at 12 months compared to a no diet control (18). We identified no other recent RCTs testing Jenny Craig since these systematic reviews.

One study has evaluated the effects of Jenny Craig – traditional or low-carbohydrate versions – on hemoglobin A1c in patients with type 2 diabetes compared to a counseling support control group (27–28). At 12 months, traditional and low-carbohydrate Jenny Craig programs reduced A1c greater than counseling by 0.4% and 0.8%, respectively. Furthermore, insulin and oral hypoglycemic medications were either reduced or discontinued in the majority of Jenny Craig participants irrespective of program macronutrient composition – specifically, 1) insulin reduction/discontinuation: 8% in counseling, 63% Jenny Craig, and 90% low-carbohydrate Jenny Craig; and 2) oral hypoglycemic reduction/discontinuation: 16% in counseling, 39% Jenny Craig, 30% low-carbohydrate Jenny Craig.

Serious adverse events, when reported, were rare (16). Two deaths (1% of participants) occurred in one trial and were not attributed to participation in Jenny Craig.

In summary, there is clear evidence to support Jenny Craig's 12-month weight-loss efficacy and safety. Additionally, there is preliminary evidence that Jenny Craig improves A1c levels and may enable reduction of hypoglycemic agents in patients with type 2 diabetes.

Nutrisystem

Nutrisystem is a high-intensity weight loss program that includes prepackaged meal replacements along with recommendations for increased physical activity. Nutrisystem is offered directly to consumers through online and mobile app platforms and certain subscriptions offer online access to dieticians and counselors. Nutrisystem captures 30.3% of the market share for commercial weight-loss services in the United States (15).

Of note, we are aware of no published RCTs reporting outcomes with Nutrisystem at 12 months, but several short-term trials have been published. Nutrisystem participants achieved greater weight loss than comparators at 3 and 6 months (16), and a meta-analysis found that Nutrisystem participants lost 7.4 kg of body weight more than no diet controls at 6 months (18). We identified no other recent RCTs testing Nutrisystem since these systematic reviews.

With respect to glycemic outcomes in patients with type 2 diabetes, Nutrisystem significantly reduced A1c values at 3 and 6 months greater than comparator (between group difference: −1.2% at 3 months and −0.3% at 6 months)(28). Reductions in hypoglycemic

medications also occurred more frequently among Nutrisystem participants – 28% in Nutrisystem group compared to 4% in the counseling comparator.

When reported, serious adverse events were rare (16). Specifically, urinary retention complicated by hematuria and myocardial infarction were noted between screening and baseline evaluations, and were not attributed to participation in Nutrisystem. Of the studies reviewed, two were ITT and one was a completers' analysis; attrition ranged from 0–13%.

In summary, there are no long-term RCTs testing the weight-loss efficacy and safety with Nutrisystem. Additional RCTs with follow up periods at or beyond 12 months are needed to support routine referrals to this program by clinicians.

Health Management Resources (HMR)

HMR is a high-intensity program that comprises meal replacements and the recommendation for participants to increase their physical activity. Meal replacements are available in either low-calorie (1,200–1,500 kcal/day) or lower-calorie (<1,200 kcal/day) formulations. HMR is frequently used as a part of a medically supervised weight-loss program, though participants may alternatively receive meal replacements together with telephone or online support. Costs may be high if program participation is not covered by insurance.

Of note, we are aware of no published RCTs reporting outcomes with HMR at 12 months. Several short-term RCTs have been published. HMR participants achieve greater weight losses than comparator groups with both low- and very-low-calorie options (16). In a study that examined both in-person and telephone counseling with a low-calorie version of HMR, weight losses were equivalent between groups (13.4% vs 12.3% at 6 months, respectively) (29). Studies investigating the impact of HMR on glycemic control in patients with type 2 diabetes have not been reported.

While no serious adverse events were reported, constipation was commonly noted and occurred in 56% of participants (16). No additional harmful outcomes were described. Of the studies reviewed, two were ITT and 1 reported only completer's analyses. Attrition, when reported, was variable and ranged from 0–31%.

In summary, there are no long-term RCTs testing the weight-loss efficacy with HMR, and clinicians should be aware that constipation occurs frequently with this program. Additional RCTs examining outcomes at or beyond 12 months are required in order to consider routine referrals to HMR by clinicians.

Medifast

Medifast is a high-intensity program that offers portion-controlled, low-fat meal replacements in two main formats: 1) 4 meal replacement products and 2 self-prepared meals daily with access to self-guided online support materials 2) 5 meal replacement products and 1 self-prepared meal daily with access to individualized telephone coaching and self-guided online support. Meal plan caloric content ranges between 800 and 1100 kcal/day while plans in the weight-loss maintenance phase may contain up to 1800 kcal/day.

Both program formats encourage an increase in physical activity. Medifast captures 18.6% of the market share for commercial weight-loss services in the United States (15).

Among RCTs evaluating weight-loss efficacy with Medifast, participants achieved an average loss between 4.2 and 7.8% at 10–12 months as compared to controls (16–17,30–32). A recent RCT compared Medifast (reduced-calorie Medifast 4&2&1 self-guided plan) and another commercial program (low-calorie OPTAVIA 5&1 Plan with telephone coaching) (33). No significant weight loss difference was found between these groups at 4 months, although both resulted in greater weight loss than control. No trials have reported glycemic outcomes in patients with type 2 diabetes.

Among trials reporting adverse events, serious adverse events were rare (16). One report of renal failure (1.5% of participants) was noted in one trial, which was not attributed to study participation (33). Of the 5 trials reviewed, 3 reported only completers' analyses. Attrition was variable and ranged from 10–56%.

In summary, there is clear evidence to support Medifast's 12-month weight-loss efficacy and safety. RCTs are needed that examine A1c outcomes among patients with type 2 diabetes.

OPTIFAST

OPTIFAST is a high-intensity program that comprises meal replacements, behavioral education and the recommendation for participants to increase their physical activity. Meal replacements are available in either low-calorie (1,000–1,500 kcal/day) or very-low-calorie (≤800 kcal/day) formulations. OPTIFAST is offered as part of a medically supervised weight-loss program, and costs may be high if program participation is not covered by insurance.

Among RCTs, OPTIFAST participants using a very-low-calorie version achieved weight loss ranging from 8.6% to 10.5% at 12–15 months (16,34). One study evaluated the impact of OPTIFAST participation on glycemic parameters in patients with type 2 diabetes; at 6 months of follow-up, OPTIFAST had reduced A1C by 0.3% greater than a counseling comparator (28).

When reported, serious adverse events in OPTIFAST participants were rare (16,34). Four deaths occurred in two trials (<0.1% of participants). Additional reported adverse events included dizziness, headache, gastrointestinal symptoms, alopecia and hepatobiliary disorders (16.8%, 17.4%, 0.3%–18.7%, 0.6–7.7% and 0.1–10.3%, respectively). Of the 5 trials reviewed, 2 reported only completers' analyses. Attrition, when reported, was variable and ranged from 10–40%.

In summary, there is clear evidence to support OPTIFAST's 12-month weight-loss efficacy and safety. Additional long-term RCTs examining A1c outcomes among patients with type 2 diabetes are needed.

Virtual Programs

Lose It!

Lose It! is a calorie tracking program that utilizes goal setting and online support to achieve weight loss. Lose It! is offered through online and mobile app platforms at no cost to consumers, though enhanced tracking features including physical activity monitoring and dietary analysis are available for an additional fee.

Of note, we are aware of no published RCTs reporting outcomes with Lose It! at 12 months. One published RCT reported weight reductions of 1.8 kg at 6 months with Lose It! compared to 2.5 kg with an intensive counseling comparator in a completers' analysis (16,35). There was no significant difference in weight loss between study groups. Attrition was 37%. Serious adverse events or other harms were not reported with the use of the Lose It! app.

In summary, there are no long-term RCTs testing the weight-loss efficacy and safety with Lose It!. Additional long-term studies are needed in order to support routine referrals by clinicians.

My Fitness Pal

My Fitness Pal is a calorie and physical activity-tracking program with online support access that is offered directly to consumers through online and mobile app platforms. My Fitness Pal is offered at no cost to consumers though enhanced tracking and dietary analysis features are available for an additional fee.

Published RCTs of My Fitness Pal are limited and have revealed small, short-term weight loss (36–37). In one study, My Fitness Pal users achieved weight reductions of 2.2 kg at 12 months, which were not significantly greater than those of control participants (37). Continued engagement with platforms like My Fitness Pal may be an issue, as one study found that application engagement markedly declined after one month of follow-up (97% vs 55% participant log-ins at 1 and 2 months, respectively)(36). Of the 2 studies reviewed, 1 reported only completers' analyses; attrition ranged from 25–32%. When reported, there were no serious adverse events or other harmful effects described with the use of My Fitness Pal (36–37).

In summary, few RCTs have evaluated the weight-loss efficacy of My Fitness Pal, and the one long-term RCT showed no significant weight loss difference from control. Additional long-term studies are needed before clinicians refer patients to this platform as a standalone weight loss treatment.

Noom

Noom is a high-intensity, application-based weight-loss program that utilizes a traffic light system to tailor users' dietary intake based, in part, on food density. Members are provided with individualized coaching and an online group-based curriculum.

Of note, we are aware of no published RCTs reporting outcomes with Noom at 12 months in the general population. A small cohort study of Noom users reported significant weight loss from baseline body weight (5.2% at 12 months)(38), and a large retrospective cohort of Noom users found that a majority achieved a 5% weight loss at 6 months (68.8%)(39). A pilot study of Noom integration into the National Diabetes Prevention Program reported a significant mean weight reduction from baseline of over 6.0% at 65 weeks (40–41). Attrition ranged from 16–32%. An RCT has examined the addition of Noom to therapy in the treatment of eating disorders (42). There are several ongoing registered clinical trials investigating Noom, including an RCT testing a virtual DPP among patients with prediabetes (NCT03865342), and these studies may further inform the role of Noom in the management of obesity.

In summary, current evidence regarding weight-loss efficacy and safety with the use of Noom is limited. An ongoing RCT may improve the quality of evidence to evaluate the role of Noom in weight management among patients with prediabetes.

Omada Health

Omada Health is a high-intensity program that integrates wireless technology with individual coaching to support weight loss, and is a digital translation of the DPP lifestyle intervention. Members track their weight and blood glucose readings with digital, internet-enabled wireless scales and glucose meters and receive individualized coaching based on their transmitted data. Omada Health additionally offers physical activity tracking, weekly interactive educational sessions and participation in an online support community. Omada Health is offered directly to consumers through online and mobile app platforms. Costs of membership may be covered by individual employers or through certain health insurance plans.

There are no prior published RCTs that have evaluated weight loss outcomes in Omada Health participants. Results from a prospective cohort of individuals with prediabetes participating in Omada's web-based DPP program have been published (43–45). Among individuals with prediabetes, participants achieved a mean weight loss of 4.7% at 12 months and 4.2% at 24 months (43). Mean A1c also decreased by 0.4% at 12 months, and was sustained at 24 months. Continuation of this study to 36 months has been reported and showed sustained weight and A1c improvements (44); however, the loss to follow up at this time point was substantial. Another prospective cohort of Medicare beneficiaries with prediabetes showed mean weight loss of 7.5% at 12 months and decrease in A1c by −0.14% (45). A 12-month RCT of Omada is currently ongoing (NCT03312764), which will likely provide additional insight into the efficacy of Omada.

In summary, current evidence regarding weight-loss efficacy and safety with the use of Omada Health is limited. An ongoing RCT may improve the quality of evidence to evaluate the role of Omada Health in weight management.

Other Programs

Taking Off Pounds Sensibly (TOPS)

TOPS is a high-intensity national nonprofit organization that incorporates nutrition education and group sessions to support weight loss. While this program is not a traditional commercial weight-loss entity, it bears discussion given its widespread availability. TOPS members receive a 1-year subscription to an informational newsletter and a 6-week lesson plan that includes information on healthy eating, physical activity, and behavior change. Members additionally participate in in-person or online group sessions. Members who achieve their goal weight are invited to participate in a weight loss maintenance group – Keep Off Pounds Sensibly.

There are no prior published RCTs that have evaluated weight loss outcomes in TOPS participants. Results from a retrospective cohort analysis of 42,481 TOPS members showed that participants with consecutive membership renewals lost 5.9–7.1% of their body weight over a period of 1–3 years (46). Within the analyzed study population, 94%, 41% and 15% of participants consecutively renewed their memberships at 1, 2 and 3 years, respectively. Serious adverse events were not reported. A 12-month RCT of TOPS among low-income, older African-American women is currently ongoing (NCT03843190), and may provide additional insight into the efficacy of TOPS.

In summary, current evidence regarding weight-loss efficacy and safety with the use of TOPS is limited. An ongoing RCT may improve the quality of evidence to evaluate the role of TOPS in weight management, particularly in low-resource settings.

Limitations Relevant to Clinical Practice

Physicians should be aware of limitations in the literature base for commercial weight-loss programs. First, these programs are continually evolving and the version of a program assessed in RCTs may not be the same version currently available to patients. Given the proprietary nature of these programs, it can be difficult for clinicians to determine whether “new” versions of a program reflect substantial differences from the evaluated version that demonstrated efficacy. Second, systematic reviews have commonly noted biases in study designs, including selection, detection and attrition biases, that may limit confidence in this evidence given the high risk-of-bias (16,18). Clinicians should also be aware that the commercial programs themselves have often directly provided support to many of the trials examining their efficacy. Finally, weight loss and A1c outcomes achieved by study participants do not necessarily represent the expected outcomes among patients in clinical practice. Research participants may represent an activated sample, and many trials offer incentives to participants through waiver of program fees or other methods. Program fees, and particularly the costs of meal replacements, can be financially prohibitive to many patients. Clinicians should be aware of these limitations when counseling patients on weight loss and recommending a commercial weight-loss program.

Clinical Considerations regarding Meal Replacements

Meal replacements, typically provided as shakes, bars or prepackaged meals, assist with weight loss efforts through an overall reduction in caloric intake, portion control, as well as improved satiety and stimulus control by limiting dietary variety (47). Beyond costs, clinicians should be aware of several practical considerations for programs that incorporate the use of meal replacements such as variety of meal items offered, nutritional content, and patient tolerability. Variety and tolerability are most relevant to patient preference. Jenny Craig, Nutrisystem, HMR, and Medifast offer dry pre-packaged and/or frozen meals as well as meal replacement bars and shakes; whereas OPTIFAST only offers bars, shakes, and prepackaged soups. While meal replacement products are generally well tolerated, constipation is common with the use of higher protein products, particularly in the setting of low overall dietary fiber content. Whey, which is protein derived from milk, is used in many meal replacement products, and patients with lactose intolerance may be unable to tolerate these dairy-containing products. Clinicians should discuss these factors when counseling patients on meal replacement programs as dissatisfaction with meal replacement product may contribute to discontinuation.

With respect to nutritional content, sodium and saturated fat content may be of particular interest to clinicians given the effects of these nutritional components on blood pressure and lipid measures. Food items have variable amounts of sodium and saturated fat. For example, Mehta and colleagues reported the following nutrient ranges for commercial meal replacement programs (48): "*Jenny Craig – sodium range per item: 30–660 mg; saturated fat range per item: 0–4.0 g. Nutrisystem – sodium range per item: 0–600 mg; saturated fat range per item: 0–7.0 g. HMR – sodium range per item 110–600 mg; saturated fat range per item: 0–4 g. Medifast – sodium range per item: 0–490 mg; saturated fat range per item: 0–4 g. OPTIFAST – sodium range per item: 180–600 mg; saturated fat range per item: 0–3 g.*" Clinicians may need to recommend to their patients with underlying hypertension and dyslipidemia to examine the nutritional information on their meal replacement products to ensure that they are not exceeded recommended sodium and saturated fat intakes, respectively.

Conclusions

Weight loss is key in the prevention and management of obesity-related conditions, and multiple guideline statements recommend participation in a high-intensity comprehensive lifestyle program as a first-line measure in adults with obesity. The National DPP is an evidence-based program available in many communities across the US that is available to patients with overweight/obesity and prediabetes. This program is also a covered benefit for some insurers, which makes the National DPP an ideal option for eligible patients. Evidence regarding web-based or virtual DPP is emerging, and ongoing RCTs that test these platforms offered by Noom and Omada Health should provide new evidence regarding outcomes for remotely delivered DPP. For patients who are not eligible to participate in a National DPP, do not have a DPP available in their area, or lack insurance coverage for this program, traditional commercial weight-loss programs may be an alternative. Clinical practice guidelines support clinician referral to these programs as long as there is peer-reviewed

evidence demonstrating their efficacy and safety. We have identified several commercial weight-loss programs that help patients achieve safe, long-term weight loss: WW, Jenny Craig, Medifast and OPTIFAST. Clinicians could consider referring patients with obesity to these programs. Clinicians should take into account patient preference, including mode of delivery and membership cost, when guiding patients in the selection of a commercial weight-loss program.

Funding:

This work received no direct funding support. ML is supported by a training grant from the National Heart, Lung and Blood Institute (T32HL007180-44). KAG was supported from a grant from the National Institute for Mental Health (P50MH115842). The content is solely the responsibility of the authors and does not necessarily represent the official views of the National Institutes of Health.

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Table 1.

Components and outcomes of commercial weight-loss programs

Program	Components					Relative Monthly Costs*	12-Month Weight Loss in RCTs	Commercially Available Delivery Modalities†	Delivery Modalities Tested in RCTs	Ongoing RCTs
	High Intensity	Diet	Exercise	Behavioral Strategies	Support					
National DPP[8–10]	Yes	Low-calorie, low-fat conventional foods	Encourages increased activity; Activity tracking	Self-monitoring; Goal setting; Problem solving	Group sessions; 1-on-1 coaching	*$*	7.2%	In-person	In-person‡	Yes
WW[16–26]	Yes	Low-calorie conventional foods; Points Tracking	Activity tracking	Self-monitoring	Group sessions; 1-on-1 online coaching; Online community forum	*$$*	3–5.5%	In-person; Virtual	In-person‡; Virtual	Yes
Jenny Craig[16–18,27–28]	Yes	Low-calorie meal replacements	Encourages increased activity	Self-monitoring; Goal setting	Group sessions; 1-on-1 counseling; Online community forum	*$$$*	7.1–10.9%	In-person; Virtual	In-person‡; Virtual	Yes
Nutrisyste m[16,18,28]	Yes	Low-calorie meal replacements	Exercise plans	Self-monitoring	1-on-1 counseling; Online community forum	*$$*	No 12-month outcomes	Virtual	Virtual	Yes
HMR[16,29]	Yes	Low-calorie or lower-calorie meal replacements	Encourages increased activity	Goal setting	Group sessions; Telephone coaching; Medical supervision	*$$$*	No 12-month outcomes	In-person; Virtual	In-person; Virtual	Unknown
Medifast[16–17,30–32]	Yes	Very-low-calorie or low-calorie meal replacements	Encourages increased activity	Self-monitoring	1-on-1 counseling; Online coaching	*$$$*	4.2–7.8%	Virtual	Virtual‡	Unknown
OPTIFAST[16,28,34]	Yes	Very-low-calorie or low-calorie meal replacements	Encourages increased activity	Problem solving	1-on-1 counseling; Group support; Medical supervision	*$$$*	8.6–10.5%	In-person	In-person‡	Unknown
Lose It![16,35]	No	Calorie tracking	Activity tracking	Self-monitoring	Online community forum	*$*	No 12-month outcomes	Virtual	Virtual	Unknown

Program	Components					Relative Monthly Costs*	12-Month Weight Loss in RCTs	Commercially Available Delivery Modalities†	Delivery Modalities Tested in RCTs	Ongoing RCTs
	High Intensity	Diet	Exercise	Behavioral Strategies	Support					
My Fitness Pal[36–37]	No	Calorie tracking	Activity tracking	Self-monitoring	Online community forum	*$*	2.2%	Virtual	Virtual	Unknown
Noom[38–42]	Yes	Calorie tracking	Activity tracking	Self-monitoring; Goal setting	Group sessions; 1-on-1 coaching	*$$*	No RCTs	Virtual	None	Yes
Omada Health[43–45]	Yes	Calorie tracking	Activity tracking	Self-monitoring	1-on-1 coaching; Online community support	*$$*	No RCTs	Virtual	None	Yes
TOPS[46]	Yes	Nutrition education	Exercise plans	Self-monitoring; Goal setting	Group sessions; Online community support	*$$*	No RCTs	In-person; Virtual	None	Yes

Abbreviations: DPP – Diabetes Prevention Program; HMR – Health Management Resources; RCT – randomized controlled trials; TOPS – Taking Off Pounds Sensibly; WW – program formerly known as Weight Watchers. For each program described, we captured evidence from several sources including a pr viously published systematic review as well as an updated MEDLINE keyword search using the program name to identify randomized controlled trials in adult subjects. Similar to the prior systematic review, we did not include trials performed in special populations such as cancer survivors or patients post-bariatric surgery. We also searched program websites for citations and contacted all programs via email o request results. Finally, we searched clinicaltrials.gov to identify ongoing randomized controlled trials of programs. We used program website to identify information about components included.

*Magnitude of costs have been inferred from information available online --

$ indicates no cost program or covered by insurance for some patients

$$ indicates monthly costs less than $100 per month

$$$ indicates monthly costs of $100 or more.

Clinicians should be aware that cost of participation in National DPP is covered for Medicare beneficiaries and may be covered in some states through Medicaid or private insurers. Costs of other commercial programs may be covered by some insurance companies or through individual employers. Costs of commercial programs may vary by modality.

†Virtual delivery modality may consist of a remote web-based platform, online components, and/or telephone delivery of services.

‡Modalities with demonstrated weight-loss efficacy greater than comparator at 12 months in an RCT published in a peer-reviewed publication.