

Marijane Hynes, MD
Weight Management
Program, The George
Washington University
Medical Faculty Associates,
Washington, DC

mhynes@mfa.gwu.edu

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10 proven strategies to help patients maintain weight loss

Patients' chances of keeping off weight long-term improve with evidence-based interventions, such as a sound diet, more exercise, and attention to more thoughtful eating habits.

PRACTICE RECOMMENDATIONS

- › *Encourage patients to lose more weight early in their effort, which is predictive of successful long-term maintenance.* **(B)**
- › *Support patients' efforts to maintain weight loss by encouraging them to consume fewer calories and eat more nonglycemic fruits and vegetables **(A)**, eat at home and avoid processed foods **(B)**, work with you in addressing mental health concerns **(B)**, and increase time spent exercising **(A)**.*
- › *Consider the potential value of prescribing a US Food and Drug Administration–indicated medication for weight maintenance.* **(B)**

Strength of recommendation (SOR)

- (A)** Good-quality patient-oriented evidence
- (B)** Inconsistent or limited-quality patient-oriented evidence
- (C)** Consensus, usual practice, opinion, disease-oriented evidence, case series

New studies show that many people who lose weight can maintain that loss for longer than a few months by utilizing strategies that can be undertaken upon your recommendation and with your ongoing support. In this article, I review the evidence that supports the effectiveness of those interventions and activities for helping patients keep off the weight they've lost.

Prolonging the duration of weight maintenance

Until recently, most studies that focused on weight maintenance after weight loss followed subjects for only a few months or a year after the goal was achieved. With that limited window of follow-up, the belief arose in weight-loss medicine that most people gain back lost weight within 2 years. Findings that are emerging from recent studies with longer follow-up, however, suggest that weight loss can be maintained for as long as 8 years.¹

The National Health and Nutrition Examination Survey² and the Action in Health for Diabetes (Look AHEAD) trial^{3,4} reported that, among adults who lost 10% or more of body weight, approximately 60% maintained that weight loss at 1 year. Look AHEAD had a much longer duration: 42% of participants who lost at least 10% of body weight by the end of Year 1 maintained at least that 10% loss by the end of Year 4.⁵ In addition, Look AHEAD demonstrated that extended provision of maintenance interventions after weight loss can facilitate clinically meaningful weight loss for as long as 8 years—2 or 3 times longer than what was reported in earlier randomized trials.⁴

We have evidence-based guidance for achieving long-term weight maintenance and good reason to believe that success is achievable for patients. The 10 strategies that follow can help you to guide patients to become successful “maintainers.”



These 10 strategies can help guide patients to become successful "maintainers."

1. Emphasize more weight loss in the first 3 months of a program

Losing more weight initially seems to point to more success in relation to maintenance. This suggests that more intensive help, such as more frequent visits with a physician and a dietitian during the first 3 months might be an important step to help patients lose and maintain weight.

Much of our information on successful maintainers comes from the National Weight Control Registry (NWCR) at the Warren Alpert Medical School at Brown University.¹ This research study has gathered information from more than 10,000 people who successfully lost ≥ 30 lb (average, 60 lb) and kept it off for at least 1 year. To challenge the widespread belief that only a few people who attempt weight loss succeed long term, the NWCR identifies and investigates the characteristics of individuals who *have* succeeded.

A new and encouraging finding is from a small study that showed that people can maintain weight loss brought about by either medical or surgical means: Those who lost $> 15\%$ of their starting weight and were followed closely by health care professionals maintained their weight loss at 1 year.⁵

2. Advise patients to consume fewer calories and eat more nonglycemic fruits and vegetables

When a person loses weight, their basal

metabolic rate drops; to maintain their new weight, they need to consume fewer calories. That person must continue to have a calorie deficit, which varies individually but is often about 500 kcal/d. There is no formula for this; at our clinic, when a patient achieves goal weight, we have them increase intake by 100 kcal/d/wk in nutritious food until they start to gain weight. When they start to gain weight, we have them decrease intake by 100 kcal/d until they do not gain any longer.

Many patients complain of hunger after they lose weight because of an increase in the body's level of ghrelin, the hunger hormone, and a decrease in the level of leptin, which is associated with satiety. Many achieve a lower calorie count *and* fight hunger by increasing fiber intake.

In a 24-year study that looked at weight change, researchers noted a strong inverse association between increased intake of higher-fiber, lower-glycemic fruits and vegetables and weight change.⁶ Lower-glycemic vegetables include most vegetables (exceptions are corn, potatoes, and peas, which are associated with weight gain). Benefit was strongest with berries, apples, pears, tofu or soy, cauliflower, and cruciferous and green leafy vegetables.⁶ Adding 1 serving a day of nonstarchy fruits and vegetables was associated with less weight gain over time.

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> Losing the most weight and making frequent office visits to a physician and dietitian early in weight loss can determine the success of maintenance later.

The order in which food is eaten might be important, as evidenced by a small study⁷ that focused on patients with diabetes. Investigators found that subjects who ate vegetables first, protein second, and grain third had fewer fluctuations in blood glucose level than those who ate carbohydrates first—suggesting that this order might be a good way for patients to eat at least some of their meals. The reduced insulin excursions observed in this experimental setting suggest that the vegetable–protein–grain meal pattern can improve insulin sensitivity and help with blood glucose control.

3. Encourage patients to eat at home and to avoid processed foods

In a small, randomized controlled study⁸ in 2019 at the National Institutes of Health, 20 inpatients were fed an ultraprocessed diet that was matched, in calories and macronutrients, in an unprocessed diet fed to controls. Subjects in the ultraprocessed food group ate, on average, 500 kcal/d more and gained 2 lbs in 2 weeks. An ultraprocessed breakfast might consist of a bagel with cream cheese and turkey bacon; the unprocessed breakfast was oatmeal with bananas, walnuts, and skim milk. Notably, the ultraprocessed diet was cheaper; nonprocessed foods cost 50% more.

A retrospective review of a sample of US adults' caloric and nutritional intake determined that eating at a full-service restaurant is *not* associated with consumption of fewer calories than eating at a fast food restaurant: Eating at either type of restaurant was associated with excess (approximately 200 kcal/meal) caloric intake.⁹

4. Emphasize the importance of eating breakfast and increasing protein intake

Increased protein throughout the day, particularly at breakfast, has been suggested to help with weight maintenance. In a large European study,¹⁰ even slightly increased protein intake (approximately 1.2 g/kg of body weight and of low glycemic index food) was associated with weight maintenance. In another review,¹¹ researchers concluded that 25 to 30 g of protein at each meal can provide improvement in appetite and weight man-

agement, although they cautioned that further research is needed. A study that looked at increasing intake of protein at breakfast to 35 g in adolescent females resulted in less snacking later in the day.¹²

In the NWCR, successful maintainers had breakfast daily, a lower fat diet, and fewer calories (approximately 1500 kcal/d)—routines that were all associated with greater success.¹ Therefore, eating protein at approximately 1.2 g/kg of body weight (possibly, even more [35 g] at breakfast) and ingesting less fat and fewer calories all contributed to successful maintenance. Eating nuts and legume-based proteins, such as beans and tofu, should be encouraged.

Only a few studies have looked at dairy protein intake and weight maintenance. In one study, consumption of dairy proteins was not associated with a change in body weight or other metabolic risk markers during weight maintenance.¹³ Yogurt, because of its probiotic content, might be good for weight maintenance, but this has not been studied well, and studies that have been conducted are inconclusive.¹⁴

Another study looked at consumption of protein supplements. It found no improvement in body composition over a 24-week period when protein intake was increased to 1.45 g/kg when compared to 1.16 g/kg in controls. Although subjects felt less hungry, this was not reflected in a reduction in caloric intake.¹⁵

Most patients do need counseling on whole grain intake: Explaining that a bagel is the same as 4 servings of toast and that a cup (ie, a fistful) of cooked pasta is 3 servings of grains is helpful. Patients should aim for 1 serving of grain at each meal; when shopping for grains, they should choose those that have the “whole” first on the list of ingredients because whole grain, rather than refined grain, intake is associated with less diabetes and colon cancer.¹⁶

5. Underscore the importance of self-monitoring

Self-monitoring is key to weight maintenance. This can mean weighing oneself or tracking one's food intake (or both). *Daily* weighing is important: A study showed that

patients who decrease how often they weigh themselves were likely to eat more and thus gain weight.¹⁷

Monitoring intake is also important. Recommended online calorie counters (eg, myfitnesspal.com, loseit.com), tools such as a Fitbit, or even keeping a food diary to help patients track intake. In a review of technology-based interventions to maintain weight loss, the use of apps was variable and effectiveness of devices was mixed. The authors recommended that physicians complement Web-based applications with personal contact.¹⁸

6. Encourage patients to spend more time exercising

After weight loss is achieved, maintaining a high level of activity is important. Recommendations focus on moving about 1 hr/d or 200 to 300 min/wk.¹⁹ A program of several daily “bouts,” or episodes of moderate-to-vigorous physical activity, is recommended in the new Centers for Disease Control and Prevention guidelines¹⁹ and might be preferable, or equivalent, to a concentrated expenditure of energy. Patients might consider, for example, a 10-minute session, 4 times a day, 5 days a week, instead of a single, 40-minute session, 5 days a week.¹⁹ Furthermore, to sustain weight loss, moderate exercise might be more effective than exercise of vigorous intensity or extended duration.¹⁹ Most patients in the NWCR report that walking is their principal form of activity.¹

Resistance training, which improves muscle strength and endurance, with or without diet restriction, has not been shown to be effective for weight loss but might help with weight maintenance and might improve a patient’s lipid profile, insulin resistance, and blood pressure. In obese adolescents, resistance weight training led to positive changes in body composition, such as decreased waist circumference.²⁰ Resistance training likely enhances weight maintenance and should be encouraged because of its effect on increasing lean muscle mass, the most important factor in determining basal metabolic rate.

7. Work with patients to ensure sound sleep hygiene

Short sleep duration (< 6 hours a night) is as-

sociated with obesity. There are few studies on weight maintenance and sleep; a study that was reviewed by the NWCR found that people who are highly successful at both weight loss and long-term maintenance are more likely to (1) be categorized as a “morning-type” chronotype (ie, getting up early), and (2) report longer sleep duration and better sleep quality, compared to treatment-seeking overweight and obese subjects. Furthermore, these NWCR subjects were more likely to report shorter sleep latency (time required to fall asleep) and were less likely to report short sleep, defined as < 6 to 7 hours a night.²¹

Patients should strive for 7 to 8 hours of sleep a night; sleep apnea should be addressed as necessary.¹⁷ It is important for doctors to encourage patients to go to bed and get up at the same times every day (eg, 10 pm to 6 am daily).

8. Start a trial of medical therapy

Weight-loss medicines are beyond the scope of this article but worth discussing. In accordance with obesity guidelines, if a patient responds well to a weight-loss medication and loses $\geq 5\%$ of body weight after 3 months, continue prescribing the medication. If the medication is ineffective or the patient experiences adverse effects, stop the prescription and consider an alternative medication or approach to maintenance.

The US Food and Drug Administration has approved 5 medications for long-term use in weight maintenance: the 2 combination formulations bupropion-naltrexone and phentermine-topiramate, as well as liraglutide, lorcaserin, and orlistat. A review of the use of these drugs over 1 year showed that they provide a modest favorable effect on cardiometabolic outcomes that vary by drug class.²² In particular, liraglutide has been shown to reduce the risk of cardiovascular disease outcomes in patients with diabetes who have a history of atherosclerotic disease or heart attack and stroke.²³ Further research is needed to evaluate the long-term impact of these drugs on cardiovascular risk.



Counsel patients to eat fewer calories, avoid highly processed foods, and increase protein intake—preferably by preparing food at home.

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➤ **A retrospective review determined that eating at a full-service restaurant is not associated with consumption of fewer calories than eating at a fast food restaurant.**

9. Address mental health challenges
Certain personal traits and behaviors appear to help people lose weight: In a study, maintainers were more likely to be characterized as being good problem-solvers, having hope, and having a more positive mood.^{24,25}

Addressing mental health issues, especially depression, is paramount in patients with obesity. Treating patients with depression and hopelessness, as well as helping them with problem-solving, should be the focus of weight-management care.

Choosing an antidepressant not associated with the adverse effect of weight gain is important. Almost all selective serotonin reuptake inhibitors and tricyclic antidepressants are associated with weight gain; bupropion is weight neutral and should be first-line treatment for patients who are overweight and obese.²⁶ If using an antidepressant associated with weight gain, initiate weight monitoring if the patient gains 3% of body weight in the first month of therapy. When caring for a patient who takes an antipsychotic, consider consulting with their mental health professional to determine the value of prescribing metformin, which has been shown to decrease weight gain associated with antipsychotics.²⁷

Because depression, anxiety, and attention deficit-hyperactivity disorder are all associated with obesity, it is important to work with obese patients' mental health care providers to design ways to improve their care.

10. Encourage patients to modify old habits and adopt new ones
Focusing on establishing good habits can be helpful. In Great Britain, a program focused on forming new healthy habits and breaking old unhealthy habits by restructuring daily routines and increasing mindfulness was successful in keeping weight off in 65% of participants—an impressive degree of success.²⁴ Successful maintainers were sent daily text messages requesting that they interrupt their routines, which shifted their attention away from eating. Some of these distracting tasks included driving to work by a different route or volunteering for a charity. Such small changes helped improve weight maintenance.

Intuitive eating and mindfulness can help. New concepts that focus on healthy eating without caloric restriction are also emerging; one such approach is intuitive eating, which promotes eating that is based not only on cues connected to hunger and fullness, but also on enjoyment of food, such as eating slowly and savoring every bite.²⁸ Techniques such as sipping water or resting the fork between bites of food has been helpful with some patients. More research in the area of intuitive eating is needed.

Recognizing true physiologic hunger distinct from emotional hunger can improve with mindfulness training. This practice might provide a better way to help the so-called yo-yo dieter and binge eater to reach metabolic health. Interestingly, successful weight maintainers who allow themselves less restriction on weekends maintain weight better than those who try to restrict diet every day, according to a recent study.²⁹

Recommend a support group. Accountability is important: Group therapy in obesity treatment may be more effective than individual treatment.³⁰

The support of a group and the regular attendance at group meetings are connected to further significant weight loss in the weight-loss period and, later, during maintenance. Monthly meetings seem to help patients with weight maintenance but more research is needed to determine what interval of support-group meeting attendance is most effective.

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CORRESPONDENCE

Marijane Hynes, MD, The George Washington University Medical Faculty Associates, Fifth Floor/Internal Medicine, 2150 Pennsylvania Avenue NW, Washington, DC 20037; mhynes@mfa.gwu.edu.

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