



A GUIDE TO  
**AVOIDING  
& BREAKING  
PLATEAUS**

## OBJECTIVES

After completing this section, the health and fitness professional will be able to:

- Suggest appropriate goals within lifestyle and genetic parameters.
- Assist clients in reaching weight loss and weight gain goals.
- Confidently express the scientific rationale behind plateaus.

## INTRODUCTION

Hitting a plateau is a common occurrence as a person progresses through a weight loss program. Although some weight loss clients will report very low caloric intake and what appear to be adequate or high levels of activity, some clients will simply stop progressing and may even regress. Individuals may want to blame this lack of progress on a genetic predisposition to remain overweight or to impaired hormone function, but the bottom line is that no human being is resistant to the first law of thermodynamics. The human body will lose mass if caloric intake is consistently below caloric expenditure. It should be noted that, though rare, if a medical issue is suspected, always refer the client back to his or her physician for proper testing. The following sections will address some common *nonmedical* causes for plateaus and some strategies to avoid and break plateaus.

## HOW DOES A PLATEAU OCCUR?

The physiology behind a plateau can be explained by the first law of thermodynamics. Energy cannot be created or destroyed, only transferred from one form to another. The human body is constantly striving to be in energy balance, and a plateau represents this balance. In simple terms, the calories taken in match the body's daily expenditure.

## BREAKING THE WEIGHT LOSS PLATEAU

There are many factors that contribute to obesity, but the main reason is too many calories being consumed compared with the amount of energy that the body expends. The exact role of genetics and its influence on obesity is not fully understood, but research in this area remains very active. However, regardless of a genetic component, behavior needs to be modified if a client is experiencing a plateau. What we know is that for the weight loss client, caloric intake must remain below daily energy needs if weight loss is to continue. The common contributors to a weight loss plateau are the following:

1. Physiological adaptations to the prescribed physical activity program
2. Noncompliance to the prescribed program — both nutrition and exercise components

In terms of physiology, when a new client starts getting regular exercise, the body will initially expend more calories during exercise. This is due to the body's inefficiency to meet the demands of the working muscles, but this inflated rate of caloric expenditure will gradually decrease as the body becomes somewhat accustomed to regular exercise. This is one reason why it is important to monitor clients with several anthropometric measures.

In addition to tracking weight loss using a scale, it is imperative that other measures of body composition are used to assess changes in lean mass and fat mass. A true weight loss plateau should not be confused with continued changes in body composition. For example, if a client is losing body fat and gaining lean mass, the scale will remain largely unchanged. However, if a calorie deficit is maintained over time, the scale will eventually capture fat loss as muscle gain tapers. Additional assessments should include circumference and body fat measurements along with regular weigh-ins. Basically, a person may be getting “smaller,” and the scale may not reflect these changes in the short term. The next thing to consider is that as a person experiences a change in body composition and loses weight, that person’s daily caloric need may decrease. So if caloric intake remains the same, but the individual’s needs are reduced, not only can a plateau occur, but weight gain may soon follow. The human body strives for efficiency and will constantly make adjustments to find the lowest cost of an activity. Therefore, the human body actually “seeks” equilibrium. However, plateaus can be avoided if measurements are taken in regular increments and program adjustments are made accordingly.

Another common reason that a weight loss plateau occurs is client noncompliance, whether intentional or unintentional. This can be in the form of underreporting caloric intake or overreporting physical activity. It has been well documented that an individual is more likely to underreport calorie intake than to be suffering from low energy expenditure (1-4). Identifying and understanding the caloric value of food and drinks can be challenging for many individuals. This task becomes even more difficult when meals are not prepared in the home. Without measuring and weighing food items, clients may underestimate the actual portion size, leading to an underreporting of calories. Another problem is forgetting to record food and drink consumed and trying to recall exact items and portions from earlier that day or over several days. It is important for the health and fitness professional to teach a client how to track food intake, and not assume that portion sizes and caloric values are understood.

Another challenge is the reporting of more physical activity than is actually occurring (5). This can be an error in how much and how often cardiorespiratory exercise is being done (frequency and duration) and the intensity at which it is performed. Without a physiologic measure of intensity, such as monitoring heart rate during exercise, it is difficult to determine how many calories are being expended. Heart rate monitors, accelerometers, and other body-monitoring devices have become readily available and mostly affordable, and they have proved to be valuable tools for avoiding and overcoming a plateau (6, 7).

## TRAINER TIP!

Health and fitness professionals should plan on assessing their clients every four weeks. This will help them identify the stages leading up to a plateau. When they begin to see clients’ weight loss slow down, the health and fitness professionals should start adding some extra exercise, cardio assignments, or recommend supplementation assistance to help clients battle the plateau.

The key to helping clients overcome plateaus is to always keep in mind that a weight loss plateau results from calorie intake equaling calorie expenditure. Therefore, regardless of the number of calories, amount of food, or exercise a client reports, adjustments must be made in order to make continual progress. Simple changes tend to be most effective, including reducing portions of the foods the client normally consumes, and incorporating lifestyle activity into a daily routine, such as short walks, house chores, taking stairs, standing or pacing during commercials, and overall less time spent being sedentary. Health and fitness professionals should continue to help clients adjust their intake and activity level until progress resumes, and remember that suggested changes should be tailored to each person's lifestyle, preferences, and willingness to make these changes.

## STRATEGIES IN AVOIDING AND BREAKING PLATEAUS

Plateaus can be avoided if the health and fitness professional remains attuned to the progress of a client. This includes having a clear plan that includes both long-term and short-term goals with regular assessments of progress.

The weight loss client needs to put his or her body back into an energy deficit, meaning more calories are expended than are taken in. This can be achieved by decreasing caloric intake, increasing physical activity, or a combination of the two. Even though a plateau has occurred, changes can be implemented to restart fat loss. It still takes a deficit of 3,500 calories to lose 1 pound of body fat; that value does not change. With this in mind, the following strategies may be useful for breaking a weight loss plateau.

**Re-assess daily caloric need.** As a client loses weight/body fat, daily caloric need is decreased. If a person is "smaller," he needs fewer calories throughout the day than the individual did as a "bigger" person. If a client is losing too much lean body mass, an intermittent caloric reduction instead of daily caloric restriction may help to maintain lean mass, which will help keep metabolism high (8).

Using gadgets such as heart rate monitors and pedometers that can be tracked helps the fitness professional receive an objective measurement of a client's daily movement. This, in turn, can help the professional and client quantify the reason for a plateau. With objective facts, clients will not be able to overestimate their movement.

**Have client measure and write down every bite of food and drink consumed.** Sometimes the amount of food and drink consumed is difficult to estimate, and the only way to determine daily intake is to assess exactly what is being consumed. The only way to do this is to measure and/or weigh all food items and write it down at the time of consumption. The simple act of keeping a food log enhances weight loss and weight loss maintenance. This act of recording food intake creates greater awareness of what is consumed and can be used to the client's advantage to work through a plateau (9-11).

**Have the client take 1 week off of training (only if a lapse in training has not occurred during the past 10-12 weeks).** If the body has grown accustomed to a vigorous and regular exercise routine, a few days off may be in order to let the body “decondition” slightly. When vigorous exercise is reintroduced after a few days, the body will respond with additional calories burned for the same amount of work done just a week earlier. This time off also may provide the client with a chance to fully recover. Overall fatigue may have affected intensity if there were no other breaks in the routine, and a client may return feeling rested and energized.

There are very few excuses for not being able to track calories consumed — it just takes time and determination.

Measuring calories is not as hard as it once was, thanks to technology. Many smart phones have Web-enabled services that allow clients to hop online and find the caloric content of their meals. In addition, websites such as CalorieKing.com have specialized software for cell phones so clients can track their meals while they eat. Sites such as these also have abundant databases that contain the calorie content for food from fast-food chains and popular restaurants. Many restaurants carry calorie menus for the consumer to read or take home.

**Implement significant changes to exercise routine, including cardiorespiratory and resistance training components.** Increase the overall intensity of the exercise routine. This can be accomplished by introducing a different mode of cardiorespiratory training, having a client take a group exercise class, implementing interval or circuit training, increasing resistance used during strength training, or increasing overall training volume (sets and reps). This is also a good time to try new activities that require a new skill, which could additionally challenge the neuromuscular system.

**Move more.** Do not just move during exercise sessions. Have a client wear a pedometer or accelerometer and increase daily steps to at least 10,000 steps/day. The health and fitness professional should encourage clients to walk whenever possible, including parking farther away, walking on a lunch break, walking before and/or after work, not sitting for more than 30 minutes at a time during the workday, and taking stairs instead of elevators.

**Increase water intake.** Sometimes thirst is mistaken for hunger. Health and fitness professionals should encourage clients to increase water intake throughout the day and be sure that water is consumed before a meal. Research shows that increasing water intake, especially around a meal, can reduce overall caloric intake, aiding in achieving a caloric deficit (12, 13).

**Reassess long- and short-term goals and make adjustments.** It may be time to revisit initial goals. Use this as an opportunity to refocus on original goals or make changes so that written goals reflect current objectives, including a specific plan on how to achieve those goals and an accountability plan.

**Increase social support.** The health and fitness professional should encourage clients to involve family members, friends, and coworkers in their new routine. This includes making others aware of short and long-term goals and the plan to achieve goals. The client should also reiterate lifestyle changes, such as new food choices and time needed to exercise, so that people in the support circle can help with healthy choices and have a better understanding about the time commitment for regular exercise. A solid social support system will also help with accountability while working through a plateau.

## ENCOURAGE A SELF-MONITORING SYSTEM

Even though self-reported physical activity and food intake come with some error, evidence clearly supports the strategy of self-monitoring for weight loss (14). Deciding which variables to monitor and how to monitor should come with client input. Some suggestions are diet, exercise, and self-weighing, or a combination of the three. Recent data suggests that electronic monitoring may be more beneficial than keeping a paper log for weight loss clients. However, either method can be effective, making a client's preference key (15, 16).

## PHARMACOLOGY AND DIETARY SUPPLEMENTS FOR WEIGHT LOSS

The goal of incorporating a dietary supplement or drug into a weight loss program is to assist the participant in complying with a plan or program that leads to weight reduction.

Research has shown that individuals who incorporated weight loss drugs along with adjustments to their lifestyle (such as diet or physical activity) lost more weight in comparison to those who only made modifications to their diet and/or physical activity and the placebo group (17).

With this being said, prescription weight loss drugs elicit known side effects and should not be used for long periods of time. However, there are safe substances in the form of dietary supplements that can assist in increasing daily caloric burn and decrease appetite to hasten weight loss (17-23). Dieters should cease supplementation once the weight goal is reached or when they have their daily routines under control to continue making progress without the supplements. Finally, supplements can interact with prescription drugs. Therefore, clients should work with their physicians to determine the most beneficial route to maximize results toward long-term weight loss.

Fitness professionals should make sure they thoroughly understand their clients and how supplements work so that they may provide clients a program that complements their supplementation.

## SUMMARY

Aiding clients through a body composition plateau is paramount to their long-term success. Half the battle when attempting to overcome a plateau is identifying the true underlying cause of it. Although plateaus occur for various reasons, they are all a result of calories in equalling calories burned. Although nutrition counseling for a medical diagnosis or disease should be strictly avoided by fitness professionals (and referred to a registered dietitian or other qualified medical provider), there is an enormous amount of nutrition education that is ideally suited to the partnership between the fitness professional and client.

## REFERENCES

1. Abbot JM, Thomson J, Ranger-Moore PJ, et al. Psychosocial and behavioral profile and predictors of self-reported energy underreporting in obese middle-aged women. *J Am Diet Assoc.* 2008;108(1):114-119.
2. Martin LJ, Su W, Jones PJ, Lockwood GA, Tritchler DL, Boyd NF. Comparison of energy intakes determined by food records and doubly labeled water in women participating in a dietary-intervention trial. *Am J Clin Nutr.* 1996;63(4):483-490.
3. Lichtman SW, Pisarska K, Berman ER, et al. Discrepancy between self-reported and actual caloric intake and exercise in obese subjects. *N. Engl. J. Med.* 1992;327(27):1893-1898.
4. Weinsier RL, Nagy TR, Hunter GR, Darnell BE, Hensrud DD, Weiss HL. Do adaptive changes in metabolic rate favor weight regain in weight-reduced individuals? An examination of the set-point theory. *Am J Clin Nutr.* 2000;72(5):1088-1094.
5. Tucker JM, Welk GJ, Beyler NK. Physical activity in U.S.: adults compliance with the Physical Activity Guidelines for Americans. *Am J Prev Med.* 2011;40(4):454-461.
6. Feito Y, Bassett DR, Thompson DL. Evaluation of activity monitors in controlled and free-living environments. *Med Sci Sports Exerc.* 2012;44(4):733-741.
7. Feito Y, Bassett DR, Thompson DL, Tyo BM. Effects of body mass index on step count accuracy of physical activity monitors. *J Phys Act Health.* 2012;9(4):594-600.
8. Varady KA. Intermittent versus daily calorie restriction: which diet regimen is more effective for weight loss? *Obes Rev.* 2011;12(7):e593-e601.
9. Boutelle KN, Kirschenbaum DS. Further support for consistent self-monitoring as a vital component of successful weight control. *Obes Res.* 1998;6(3):219-224.
10. Akers JD, Cornett RA, Savla JS, Davy KP, Davy BM. Daily self-monitoring of body weight, step count, fruit/vegetable intake, and water consumption: a feasible and effective long-term weight loss maintenance approach. *J Acad Nutr Diet.* 2012;112(5):685-692.e2.
11. Trabulsi J, Schoeller DA. Evaluation of dietary assessment instruments against doubly labeled water, a biomarker of habitual energy intake. *Am J Physiol Endocrinol Metab.* 2001;281(5):E891-E899.
12. Dennis EA, Dengo AL, Comber DL, et al. Water consumption increases weight loss during a hypocaloric diet intervention in middle-aged and older adults. *Obesity.* 2010;18(2):300-307.
13. Stookey JD, Constant F, Popkin BM, Gardner CD. Drinking water is associated with weight loss in overweight dieting women independent of diet and activity. *Obesity.* 2008;16(11):2481-2488.
14. Burke LE, Wang J, Sevick MA. Self-monitoring in weight loss: a systematic review of the literature. *J Am Diet Assoc.* 2011;111(1):92-102.
15. Burke LE, Conroy MB, Sereika SM, et al. The effect of electronic self-monitoring on weight loss and dietary intake: a randomized behavioral weight loss trial. *Obesity.* 2011;19(2):338-344.
16. Conroy MB, Yang K, Elci OU, et al. Physical activity self-monitoring and weight loss: 6-month results of the SMART trial. *Med Sci Sports Exerc.* 2011;43(8):1568-1574.
17. Douketis JD, Macie C, Thabane L, Williamson DF. Systematic review of long-term weight loss studies in obese adults: clinical significance and applicability to clinical practice. *Int. J. Obes.* 2005;29(10):1153-1167.
18. Zheng G, Sayama K, Okubo T, Juneja LR, Oguni I. Anti-obesity effects of three major components of green tea, catechins, caffeine and theanine, in mice. *In Vivo.* 2004;18(1):55-62.
19. Tucker LA, Cook AJ, Nokes NR, Adams TB. Telephone-based diet and exercise coaching and a weight-loss supplement result in weight and fat loss in 120 men and women. *Am J Health Promot.* 2008;23(2):121-129.
20. Bracco D, Ferrarra JM, Arnaud MJ, Jéquier E, Schutz Y. Effects of caffeine on energy metabolism, heart rate, and methylxanthine metabolism in lean and obese women. *Am J Physiol.* 1995;269(4 Pt 1):E671-E678.
21. Diepvens K, Westertep KR, Westertep-Plantenga MS. Obesity and thermogenesis related to the consumption of caffeine, ephedrine, capsaicin, and green tea. *Am J Physiol Regul Integr Comp Physiol.* 2007;292(1):R77-R85.
22. Koot P, Deurenberg P. Comparison of changes in energy expenditure and body temperatures after caffeine consumption. *Ann Nutr Metab.* 1995;39(3):135-142.
23. Bérubé-Parent S, Pelletier C, Doré J, Tremblay A. Effects of encapsulated green tea and Guarana extracts containing a mixture of epigallocatechin-3-gallate and caffeine on 24 h energy expenditure and fat oxidation in men. *Br J Nutr.* 2005;94(3):432-436.