

Why Do Weight-Loss Programs Fail?

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Around this time of year, many patients decide to pursue a weight-loss program. If you have a program in place in your practice or have patients who are participating in other weight-loss programs, you will notice that in the majority of cases, initial weight loss is rapid and motivation is high. Some patients may even reach their weight-loss goals. However, over time, there is often gradual weight regain to previous levels or even higher. In fact, evidence suggests there is a [greater than 80 percent recidivism rate](#) to pre-weight-loss levels after otherwise successful weight reduction.¹

The obvious question is, why do most weight-loss programs fail in the long term? One of the main contributors to failure involves changes in resting metabolic rate (RMR). As a patient loses weight, their energy expenditure requirements also decrease. This process is called [adaptive thermogenesis](#): "The decrease in energy expenditure (EE) beyond what could be predicted from the changes in fat mass or fat-free mass under conditions of standardized physical activity in response to a decrease in energy intake."²

Adaptive Thermogenesis in Action



A patient presented to my office for weight-loss recommendations. We calculated her resting metabolic

rate to be 1,800 calories a day. By adding in calories burned from normal physical activities, her total energy expenditure (TEE) was 2,500 calories per day. That's the number of calories she required to neither gain nor lose weight. We placed her on a 1,500 calorie daily diet, whereby she began to lose 2 pounds per week. She lost her target weight of 20 pounds over the course of 12 weeks. By including exercise (vibration) in her program, there was minimum loss of fat-free mass.

We recommended that she continue her physical activity; advice she largely ignored. She returned to the office four weeks later after regaining 10 pounds. We evaluated her calorie intake and determined that she was consuming approximately 2,000 calories a day, which was still significantly less than what she had eaten prior to initiating her weight-loss program. However, her resting metabolism had dropped to 1,200 calories a day. Any attempt by her to go back to a regular diet was met with weight regain because her new "set point" was lower.

Most people know that metabolism is based on the amount of muscle mass. Any weight-loss program will facilitate some loss of muscle mass. It is only be logical to assume that the metabolism drop is based on the drop in fat-free mass. However, people with large amounts of weight loss have had declines in their RMR greater than accounted for by the loss of fat-free mass, which is further evidence of the concept of adaptive thermogenesis. Knowing this will allow you to adjust your patient's weight-loss program after they have achieved their goal.

Adaptive thermogenesis persists even in people who maintain reduced body weight. Once a patient loses weight, there is a tendency to think that if you gradually increase caloric intake, the RMR will also gradually increase. However, studies have shown this not to be true, suggesting that there is a sustained depression of the resting metabolic rate after massive weight loss. A study by Elliot, et al., showed that a sustained reduction in RMR accompanied weight loss and persisted for eight or more weeks despite caloric consumption and body-weight stabilization.³ Likewise, [a study by Rosenbaum, et al.](#), showed that the RMR was significantly lower in those who maintained weight loss of greater than 10 percent over a year. The authors concluded: "Declines in energy expenditure favoring the regain of lost weight persist well beyond the period of dynamic weight loss."⁴

Other Factors Influencing Long-Term Weight Loss: Patient Compliance

People know that they will have to eat less to maintain their new weight. However, many patients ignore this recommendation. This is not solely an issue of willpower; it can involve many other factors. You may have a patient who has lost weight and is now educated on the fact that their new energy intake will be significantly lower than what it was prior to going on a weight-loss program. This wouldn't be an issue if the person actually reduced their energy intake. However, the opposite appears to happen.

According to a recent study, reduced body-weight maintenance [is accompanied by increased energy intake](#) above that required to maintain reduced weight.⁵ This reflects decreased satiation, and according to the authors of the study, "perception of how much food is eaten and multiple changes in neuronal signaling in response to food, which conspire with the decline in energy output to keep body energy stores (fat) above a CNS - defined minimum (threshold)."

Secrets to Long-Term Success

When we educate patients on metabolism and its effect on weight regain, we get questions such as,

"How about people who have maintained their weight loss? How are they successful?" When examining why some are successful and others are not, you only have to look as far as the [National Weight Control Registry](#) to see that the reduction in energy expenditure is offset by an increase in physical activity. In fact, over 90 percent increase their physical activity to one hour per day to help maintain this weight loss.⁶

If your patients are reaching their weight-loss goals, but are finding it a challenge to maintain weight loss, you should educate them on the impact of resting metabolic rate and how exercise can offset changes in RMR attributable to weight loss. Simple activities such as walking or other aerobic activities for one hour a day should be *mandatory* to maintain long-term weight loss.

Strength training has also been shown to be effective in increasing RMR. (Bear in mind that [according to one study](#), this may be influenced by gender. Both young and old individuals increased their RMR by 7 percent; however, men increased by 9 percent, while there was no effect for women.)⁷ Some form of consistent strength training is recommended to offset the reduction in energy expenditure that occurs following weight loss, particularly weight loss accomplished by calorie reduction alone.

Having a motivated patient who is committed and providing them with the right support is usually effective in weight reduction. The most difficult part of the program is maintaining the weight loss. The body is continuously in a state of denial, unwilling to give in to the new weight. That's why exercise is the one critical factor that is not only important in the weight-loss process, but may be even more important in the weight-maintenance phase.

Educating patients on the benefits of exercise long after they have finished their weight-loss program is critical to success. This may not be easy, particularly if the patient is losing weight with calorie reduction alone. However, if long-term exercise habits are not ingrained, weight regain will usually be the final outcome.

References

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