Exploding the Myth:
Dieting Makes You Thin

by Todd F. Heatherton, PhD, and Jennifer Tickle, BA

It is commonly observed that North Americans are obsessed with the pursuit of thinness, although actually obtaining thinness is an elusive goal for many. The percentage of American adults who are obese has increased markedly over the past few decades, with more than half now considered overweight or obese by medical standards. Paradoxically, this has occurred in spite of the fact that the majority of American women and many American men frequently diet to lose weight.

The desire to be thin results from the stigma associated with obesity. Fat people are viewed negatively, and experience discrimination in jobs, education, and housing. Obesity at all ages is associated with decreased social acceptance. The personal experience of obesity is generally one of dissatisfaction and people are motivated to lose weight, which they most often try to do through dieting.

Ineffectiveness of dieting

Unfortunately, dieting is a notoriously ineffective means of permanent weight loss. Although most people can initially drop a few pounds from even moderate dieting, losing more than 10 percent of one’s body weight and maintaining any of the weight lost is difficult. Of those who lose weight through dieting, almost all eventually regain the weight, and very often gain back more than they lost. A review by the National Institutes of Health of all published studies on the efficacy of weight-loss treatments revealed that people lost an average of only around 10 pounds over many weeks and months of dieting (note that for many of these individuals 10 pounds is a trivial amount of weight). Two-thirds of the weight lost was regained within 1 year and almost all of the weight, for all of the people, was regained within 5 years. Since the release of the NIH review, the prevalence of obesity has increased nearly 8 percent, in spite of ever-intensifying public health messages that encourage weight loss.

According to a recent update of the NIH report, no major advances in obesity treatment have been found: interventions continue to produce short-term weight loss and long-term weight gain. Even extreme measures, such as taking pharmacologic agents, are associated with mediocre weight loss outcomes. A 1997 review of pharmacotherapy by the National Task Force on the Prevention and Treatment of Obesity concluded that routine use of drugs for weight loss is not recommended. Weight loss from most drug therapies is modest (i.e., 5–20 pounds), and plateaus after approximately 6 months. Regain of body weight is common even if people continue the drug therapy.

It is important to recognize that almost all of the available data on weight loss have been obtained through people in formal treatment. Researchers over the past few decades have speculated that people who try to lose weight on their own might have greater success than those who elect formal therapy. The reason for this advantage is based on the idea that only those who are unable to lose weight on their own seek outside assistance. Indeed, individuals who have lost significant amounts of weight and have kept it off for many years do exist, but their numbers appear to be small. An examination of those who have maintained a 30-pound weight loss for more than 5 years finds that this group exercises vigorously and follows a low-fat diet. In general, however, studies of people who are dieting, but not in therapy, reveal very little weight loss, whether it be over 6 months or even over 10 years. For the vast majority, lost weight returns within months, and over time most dieters gain rather than lose weight.

Why diets fail

Why are people so bad at dieting? Most diets fail for two primary reasons. The first is because of the body’s natural defense against weight loss; body weight is regulated around a set point that is determined primarily by genetic influence. Various family and adoption studies indicate that approximately half of the variability in body weight can be considered the result of genetics. One of the best and largest studies found that the body mass index (BMI) of adopted children was strongly related to the BMI of the biologic parents and not at all to the BMI of the adoptive parents. Studies of identical and fraternal twins provide even stronger evidence of genetic control of body weight, with the heritability estimates ranging from 60 to 80 percent. Moreover, the agreement for body weights of identical twins does not differ between twins raised together and twins raised apart, which suggests that the different environments have little effect on body weight.
If body weight is determined primarily by genetics, why are Americans becoming heavier over time? The percentage of Americans who are obese has doubled over the past few decades and it is unlikely that there have been dramatic changes in the gene pool. Albert Stunkard, a leading researcher on human obesity, points out that genetics determine whether a person can become obese, but the environment determines whether that person will actually become obese. Consider a study, by Bouchard et al., in which identical twins were overfed by approximately 1000 calories each day for 100 days. Most of the twins gained some weight, but there was great variability in how much was gained (ranging from 4.3 to 13.3 kg). However, there was a striking degree of similarity within the twin pairs in terms of how much weight they gained and in which parts of the body they stored the fat. Thus, genetics determine sensitivity to environmental influences and predispose some individuals to developing obesity. Genes predispose people to obesity when they are in environments that promote overfeeding, such as contemporary Western societies.

A second reason that diets tend to fail is related to episodes of overeating. The eating habits of chronic dieters (called restrained eaters) have been studied in the laboratory by Polivy and Herman. If dieters believe they have eaten high calorie foods, they subsequently abandon their diets, eating a great deal of whatever food the experimenter has to offer. This has been called the “what the hell effect”; the mindset of the dieter is, “I’ve blown my diet, so I might as well just keep eating.” This increased eating by restrained eaters depends on their perception of whether their diet is broken or not. If restrained eaters are given milkshakes that are very high in calories, but they are told that the milkshake is low in calories, they do not become disinhibited. Conversely, if they are given a low calorie milkshake but are told it is high in calories, they become disinhibited and eat a great deal. Restrained eaters rely on cognitive control of food intake, which is prone to break down when they eat high calorie foods or feel emotionally distressed. Although dieters manage to restrict intake temporarily, episodes of overeating sabotage the diet and also may contribute to weight gain.

Evolutionary big picture
Let’s step back to look at the larger picture. At the evolutionary level, obesity is a new problem that has emerged because of the current ease of access to high calorie food with little nutritional value. Genes predispose obesity that occurs when people are exposed to the abundance of good tasting and nutritionally void food found in modern Western society. For most of human evolution, people died from lack of food rather than from eating too much. The storage of adipose tissue allowed humans to survive and reproduce when food was scarce, but today food is seldom scarce and people store more fat than is necessary for survival. Dieting goes against millions of years of evolutionary pressure.

In addition, the sedentary lifestyles of most people do not reflect our evolutionary heritage. Children who sit at home and watch television are much more likely to become obese than those who are active in sports and outdoor activities. The latter behaviors are more consistent with the daily activities of our ancestors, who spent most of their days actively hunting or gathering food.

Even though strict dieting does not lead to thinness, common sense dictates that following a nutritionally balanced diet, avoiding excessive consumption of high calorie junk food, and engaging in a moderate level of physical activity will help most people control body weight, and indeed this is probably the best advice for everyone to follow.

References

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