

GOOD QUESTION

What causes weight loss plateaus, and how can they be overcome?

By Alan Aragon

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Simple, but not easy

The occurrence of weight loss plateaus, defined as an extended period – about a month or more – of being “stuck” at a certain bodyweight, has a deceptively simple explanation. There are only two possibilities. Either there’s a lack of compliance to the program, or a new equilibrium (maintenance or zero-balance) point has been reached. What’s complex is trying to pinpoint the individual variables that drive noncompliance, and also isolating what occurs physiologically (and behaviorally) when the body is seemingly resistant to program changes. Let’s first look at the primary culprit, noncompliance.

Noncompliance – progress enemy #1

In the context of dieting, compliance and adherence are synonymous, so you’ll see those terms used interchangeably. However, it needs to be made clear that there are two types of noncompliance, conscious and unconscious. Noncompliance is automatically thought of as a pre-meditated rebellion against the prescribed diet and/or exercise protocol, but that’s not always the case. People often fail to comply without realizing it. Unconscious or unintentional noncompliance is likely a more common problem than conscious noncompliance.

Unconscious noncompliance is seen in a great multitude of diet studies that track self-reported intake (as opposed to lab-provided intake) and find a sort of “regression to the mean” or “drift toward the middle” occur over time, regardless of the diet treatment. A great example of this phenomenon is Gardner et al’s famous A to Z study, where the dietary adherence of all four groups gradually degenerated through the course of the 12-month trial.¹ Notably, during the initial 2 months, subjects assigned to the Atkins group consumed a macronutrient breakdown of 27.7% protein, 17.7% carbohydrate, and 54.7% fat (full table [here](#)). By month 12, these subjects consumed 20.6% protein, 34.5% carbohydrate, and 44.3% fat – amounting to what essentially is a Zone-type diet. Funny enough (but not surprisingly), subjects assigned to the Zone diet had the least amount of discrepancy from the prescribed macronutrient targets.

Noncompliance, whether consciously or unconsciously perpetrated, has been repeatedly demonstrated in the literature. A clear manifestation of this phenomenon is the misreporting of intake (and output). Obese subjects with a self-proclaimed history of ‘diet resistance’ have been shown to under-report food intake by an average of 47%, and over-report physical activity by 51%.² A related finding that aligns with my field observations

is that under-reporting intake might be greater among women than men (and to a greater degree in overweight women).³

Recent work by Thomas et al aimed to investigate the factors involved with weight loss stabilization in diet trials that commonly occur at the 6-month point, despite validated models of dynamic energy balance showing weight plateaus between 1 and 2 years.⁴ In order to do this, they developed separate mathematical models based on the first law of thermodynamics. One model was designed to determine the degree of metabolic adaptation required for the plateau to occur. A second model was designed to determine the degree of intermittent lack of adherence required to attain the plateau. These models were validated with four large-scale, long-term studies. What they found was rather interesting. Intermittent lack of adherence, rather than metabolic adaptation, was the factor capable of predicting weight loss plateaus. Quoting the discussion:⁵

“The evidence presented in this study indicates that even very high and unrealistic levels of metabolic adaptation do not affect the timing of weight plateaus. Rather, the seemingly innocuous intermittent loss of dietary adherence results in weight graphs with 6-mo plateaus, and these results point to the sensitivity of dietary adherence in determining the kinetics of weight loss”

On the note of intermittent noncompliance, uncontrolled or unbridled cheat meals (and certainly cheat days) can easily erase a week’s worth of caloric deficit. It doesn’t matter if compliance is perfect during the weekdays, if for example on the weekend an accumulated 3500 kcal deficit is completely nullified (and then some) by the addition of a couple of 2000 kcal “YOLO” meals. Caution is further cast to the wind when these meals are accompanied by enough alcohol.

Arrival at equilibrium – expect it, embrace it

An unfortunate yet familiar scenario is when uninformed dieters seek the next fad once they run into their first weight loss plateau. Reaching a point where an imposed energy deficit has finally diminished and closed up completely is something that people mistakenly consider to be some sort of failure. On the contrary, this is merely a “landing” on the way down the non-linear staircase of weight loss. Weight loss plateaus are supposed to happen, and when the weight loss goal is large enough, plateaus are unavoidable.

In the field, I’ve advised clients with substantial weight loss goals to be aware that several plateaus will occur before the goal is reached. Each new plateau will likely be longer than the previous one, but here’s the punch line: this is a good thing. After all, the end-goal is indeed a plateau of sorts. Plateaus are typically placed in a negative light, but I’ve found that it’s much more productive to frame them as opportunities to test the sustainability of the progress made up to that point. Therefore, I encourage dieters to view plateaus as “*maintenance practice periods*.”

The tendency is to keep pushing forward under the illusion that plateaus are something to immediately flee from. When a plateau has been reached, I have routinely challenged clients to sustain the plateau (that is, maintain and not regain any

significant weight/fat) for an additional few weeks, and in some cases months, depending on the individual situation.

Breaking through plateaus

It's appropriate to plan on breaking plateaus that occur en route to the end-goal. But before that, an honest, diligent assessment of compliance should be done. Once good compliance is confirmed, then a decision must be made of how to re-open the caloric deficit, and there are only three options: 1) decrease energy intake, 2) increase energy output, or 3) some combination of both. A fourth option would be to back away from the fire and simply maintain, realizing that weight loss maintenance is a legitimate goal, and a challenging one at that.

If the focus indeed is on re-initiating weight loss, then the individual's program must be carefully scrutinized to determine the most realistic and prudent plan of action. How much room does the individual have for increasing the intensity, duration, or frequency of training? How much room is there for reducing caloric intake? How aggressive, urgent, or time-sensitive is the goal? The answers to these questions will vary widely with the individual, making it impossible to issue a universal prescription. One thing is certain, however – the protocol must match the individual's physical and psychological tolerance, or it will end up being a recipe for either conscious or unconscious noncompliance.

It's important for the dieter to be aware of the body's homeostatic drive—in other words, its primal, hard-wired aim to preserve the status quo. The body strives to prevent weight change by either reducing or increasing non-exercise activity thermogenesis (NEAT), adaptive thermogenesis, and other factors I've discussed in-depth (see the June 2014 issue of AARR for the latest article on the CICO vs. anti-CICO camps, as well as the 3-part series on clearing up misunderstandings that plague the calorie debate, beginning with the July 2013 issue).

A final point I'd like to make is that monthly water weight fluctuations associated with the menstrual cycle need to be carefully considered when judging whether or not an actual plateau has been reached. Women should be wary of falsely identifying a weight loss plateau that is shorter than the approximate 4-week duration from cycle to cycle.

References

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