

Carbohydrate Cycling for Fat Loss

By Jill Coleman

Ahh, carbs—your best friend or your worst enemy? One of the three macronutrients along with fat and protein, carbohydrate recommendations fit prominently into any diet plan, and different manipulations of carb consumption may cause a dieter to lose weight, gain weight, plateau or simply dive off the dieting deep end and land head-first in a bag of oreos. “Carb cycling” is one such manipulation, that if performed correctly, can help most people burn fat effectively, maintain muscle mass and cure the perennial sweet craving.

What is “carb cycling” and why do it?

There are mixed feelings in the nutrition world about the correct amount of carbohydrates to eat, when to eat them, what types are best and how to “have your carbs and lose weight too.” The concept of cycling carb intake has been around in the body building world for years and has helped many a competitor get effectively lean, while also maintaining his or her sanity. Though it is true that many of us do not want the physique of a bodybuilder, we can appreciate the will power, dedication and inevitably lean results accomplished by this way of eating. The idea behind carb cycling is that it not only keeps the body guessing from an avoidance-of-plateau perspective during fat loss efforts, but it alters the body’s hormonal environment. This alteration allows for efficient fat burning and muscle sparing through delicately balancing anabolism and catabolism. There are three different “days” outlined in any carb cycling program: high-carb, low-carb and no-carb. Using these three daily eating protocols, one can manipulate hormones to achieve the desired fat loss effect. In short, carb cycling is a way of eating that calls for variation in amount of carbohydrate consumed from one day to the next. If done traditionally, the program will yield significant fat loss, while maintaining muscle; though it can be tweaked to achieve other goals such as hypertrophy or performance.

How carbohydrates affect hormones

Many of us are familiar with the effect that carbohydrate intake has on the hormone insulin, and the potential for fat storing and insulin resistance if carb intake is consistently overindulged. One hormone, however, that many may not have heard of is leptin. Leptin is a hormone produced mostly by the fat cells, and is a regulatory hormone for hunger and satiety. Leptin is released in response to “re-feeding,” defined as a time period of 12-24 hours of increased carbohydrate and caloric intake. Thus, leptin does not increase significantly as a result of a single meal, like insulin, but instead creeps over a sustained time period of increased carbohydrate consumption. Once released from stored fat cells, leptin moves into the blood stream and crosses the blood-brain barrier. Here it acts as a feedback mechanism in the hypothalamus to tell the body to stop eating: there is enough energy (fat and carbohydrate stores). Thus, leptin effectively signals that there is enough fat on the body and acts as an initiator of a cascade of secondary hormones that decrease hunger and bring on the feeling of satiety. Through these secondary hormones, leptin also signals to the body to begin burning fat and to increase energy expenditure.

Conversely, very low levels of leptin, as would occur on a chronically low calorie and low carbohydrate diet, give the body the opposite message: eat, conserve, don’t build muscle, slow down. This is a

concept that many of us have heard before—restriction of calories or carbohydrates for an extended period of time will cause the metabolism to slow. It is by this way of balancing the release and opposing lack of leptin that carb cycling works. Strategically scheduling high-carb, low carb and no-carb days will vary leptin levels to achieve the highest metabolic rate possible, while maintaining muscle anabolism and avoiding fat storage.

Many may have also heard of the feel-good hormone serotonin. It is a neurotransmitter that boosts mood and is often manipulated by drugs for those suffering from depression. It is no surprise that eating carbohydrates boost our mood, and the reason for this is that it boosts serotonin production. Interestingly, low serotonin has been associated with increased cravings for sugar and chocolate. This makes sense from a biochemical standpoint. Tryptophan, an amino acid precursor to serotonin production, competes for entry into the brain at the blood-brain barrier with many other amino acids, thus the amount of serotonin produced is limited by the amount of tryptophan that can enter the brain. When sugar is consumed, released insulin forces many of the competing amino acids to enter cells along with carbohydrates for energy production, cellular metabolism and storage. As a result, tryptophan is left with little competition and is able to enter more freely, consequently increasing serotonin production. Thus, when a diet restricts carbohydrate intake for long periods of time, and especially when combined with strenuous exercise, serotonin production plummets and manifests itself by way of increased cravings and hunger; the physical sugar craving is the body's way of forcing the dieter to eat carbohydrates, increase insulin and therefore increase serotonin production. Carb cycling is a way to maintain normal serotonin levels and as a result curb cravings. Also, from a psychological perspective, carb cycling encourages a stricter adherence since carbs are never eliminated completely for long periods of time.

The final hormone that is manipulated through carb cycling is cortisol. This stress hormone is released when the body is in a fasting state, most notably when you wake up in the morning. During an overnight fast, cortisol is released to tell the body to start breaking down stored fat and muscle to use for energy in this carb-depleted state. Along with adrenaline, cortisol mobilizes stores from fat and muscle tissue to be used for energy; however in short term fasting like an overnight fast, a greater amount of muscle is used than is fat, thus it would be beneficial to shut off cortisol circulation to spare muscle. Eating a meal containing carbohydrates will essentially shut off cortisol production; this is why many bodybuilders will eat a meal containing carbs and protein immediately upon waking. By carb cycling, excess cortisol production is avoided. At just about the time that cortisol production begins to become excessively catabolic following no- and low-carb days, a high carb day is in place to reset this hormone and avoid muscle detriment.

The How-To

Now that you know a little bit about the why, let's get down to the how. This diet plan should not have you counting calories so much as eyeing portion sizes of the three macronutrients: fats, protein and carbs. Fat and protein intake will remain relatively constant every day, while your carbohydrate intake will vary. As stated, there are three types of days included in this plan: no-carb, low-carb and high-carb.

On a no-carb day, you will eliminate all starchy carbs and fruit from the diet and focus exclusively on lean protein and green leafy vegetables. You will eat 5-6 times per day, each small meal consisting of a significant protein source and green leafy veggies like spinach, kale, lettuce, asparagus, bell peppers, broccoli, chard, etc. Lean protein sources include white fish, tuna, chicken breasts, turkey breasts and lean ground turkey, bison, egg whites and whey protein powder. Attempt to consume 25-30 grams of protein at each small meal, which is approximately the amount contained in a medium sized chicken breast or 1 scoop of whey protein powder. Eat green leafy vegetables liberally.

On a low-carb day, you will incorporate 1 serving of a good starchy carb into each of your 5-6 small meals consumed before 2pm, along with one lean protein source amounting to 25-30 grams of protein. Examples of good starchy carbs include old-fashioned oatmeal, oatbran, sweet potatoes and yams, brown rice and starchy veggies like corn, peas, squash turnips, beans and beets. A serving of each of these should amount to 25-30 grams of carbohydrates each (e.g. ½ sweet potato, ½ cup brown rice, ½ cup oatmeal made with water, etc). Eat green leafy vegetables ad libitum with any meal throughout the day. Eating starchy carbs earlier in the day will increase fat burning at night and throughout sleeping. Eating a large carbohydrate meal close to bed will blunt growth hormone release during sleep and thus blunt the potential to burn fat.

Finally, on high-carb days or “re-feeding” days, the focus is again on lean protein first and foremost, followed closely by 1 serving of starchy carbohydrate at every meal throughout the day. Consuming 1 serving of starchy carb at each of the 5-6 small meals throughout the day should approach a daily carbohydrate intake of approximately 250-300 grams.

Strategically cycling no-carb, low-carb and high-carb days will minimize muscle break-down and fat storage. Just when you are about to enter chronic catabolism, indulge in your high-carb day to completely reset the hormones leptin, cortisol and serotonin to help burn fat, boost mood and hinder cravings. Here is an example of how to cycle carbs to harness these effects:

Monday: No-carb

Tuesday: No-carb

Wednesday: High-carb

Thursday: Low-carb

Friday: No-carb

Saturday: High-carb

Sunday: Low-carb

Regarding the rules for carb cycling, avoid two or more high-carb days in a row since this can begin to cause an overflow into fat storage once glycogen stores are filled. Likewise, do not go more than two days in a row on no-carb since stress hormone levels will rise detrimentally, as well as slow the metabolism. Do not increase exercise duration on high-carb days since this will blunt the hormonal impact of the carbs. However, it may be beneficial to perform one of your heavier or tougher lifting routines on a high-carb day to increase performance and use the insulin to facilitate muscle building even more. For those whose goal is to build muscle, pay close attention to the post-workout meal. As

always, the protein source is front and center, however, a serving of naturally high glycemic index carbohydrate is also recommended post-workout, as insulin helps shuttle protein into the muscles for muscle building. Try honey, a banana, white potato, grape juice or white rice.

For endurance athletes, no-carb days are off limits since these athletes need constant access to glycogen for training; instead use only low-carb and high-carb days. For these exercisers who want to use carb cycling to increase performance, it will be most beneficial the week before a competition. Begin with low-carb days early in the week and progress to high-carb days as the event approaches (this is the familiar concept of “carb-ing up” before a performance event). In general, the leaner the athlete, the more frequent the high-carb days can be.

Conversely, many obese trainees will be resistant to leptin (similar to insulin resistance, as a result of chronically high leptin levels) and will need to endure several days of no-carb and low-carb protocols to become resensitized to leptin to begin being able to burn fat efficiently again. For these folks, I recommend just 1 high-carb *meal* per week until enough a significant amount of body fat percentage is lost.

All in all, carb cycling is an alternative to traditional dieting and calorie counting that can yield great fat loss results if strictly followed. Strategically altering no-carb, low-carb and high-carb days will not only positively influence powerful fat burning and muscle building hormones, but will also be psychologically easier for many dieters. Knowing that a high-carb day is right around the corner will make it easier to stay strict on no- and low-carb days. Perhaps we can finally have our cake and eat it too!