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0 Comments

Enjoy your carbs. Especially at night!

Why what you've been told your whole life is factually inaccurate, and why you should eat your carbs in the evening.

This one's going to be a doozy. And it's been known to ruffle some feathers in the "health and fitness" community.

For as long as you care to remember, I'm sure you've always been told "Never eat late at night", and heaven forbid you eat CARBS before bed!

I can hear it now. All the meatheads at the gym, mindlessly touting, 'BRO! Don't you know if you eat late your body stores it all as fat as soon as you go to bed!'

How many times have you heard that gem? Probably so much, its been ingrained into your normal psychological processes. This is probably followed up by how you should eat 7 meals a day to keep your metabolism "rev'ed up" for the day.

Everyone seems to say it and believe it, so it must be true!
(There's a psychology case study about how if something is repeated with enough frequency at a high enough volume, people believe it to be true, with no explanation necessary, but I digress.)
But it seems logical, right? And if by logical, I mean completely made up with no factual or scientific studies to support this claim, then YES, extremely logical.

This old adage doesn't hold true, for multiple reasons.

I'm working on an article explaining the actual metabolic processes that do occur when you consume ANY macro-nutrient throughout the day, and I promise I'll keep it condensed and easy to understand. I'll also include a model of how to implement this protocol and make it a part of your flexible dieting program. (#DayOfTheShred)

For now, I'd like to share a few articles from John Keifer (Author of Carb Backloading and Carb Nite) and Dr. Layne Norton about why it's perfectly fine to eat your carbs in the evening.

In fact, on a personal note, I've made a lot of extraordinary gains in my training by eating so called "junky carbs" before bed, and there's a method to this madness that I'm going to ruminate on in the next few upcoming blogs.

Whether you want to buy into all this, eating your carbs in the evening, or not, it's all copacetic with me because I ain't sellin' it. There's numerous scientific studies published (and cited at the bottom on the article) validating the claims made.

And as the saying goes, "The wonderful thing about science is it's true, whether you believe in it or not."

Now, for your reading and educational pleasure, Mr. John Keifer and Dr. Layne Norton:

![Carbs are a hot topic. Everyone's eating them first thing in the morning, or cycling them, some people are going anabolic — having carbs just on the weekend — and still others are having just one Carb Nite® a week. But why isn't anybody back-loading?](articles.elitefts.com/nutrition/carb-back-loading)

Not everyone's concerned about their carbs, as some people eat them at-will without affecting strength, muscle mass or waistline. That's not me. It's not most of the people I work with. Like them, I want all the benefits carbs have to offer without the disadvantages; I want to get muscular and stay lean; or get muscular and get lean. That's why I discovered back-loading, the best dietary method to achieve both at once.

One thing the industry has realized over the past few years is that carbs need to be cycled for goals beyond day-to-day leaving. Losing weight, building muscle and increasing endurance benefit from cycling carbs; making weight for a powerlifting meet benefits from cycling carbs; even trying to tighten up...
Why all this fuss over carbs? Carbs cause hormonal and metabolic changes in the body beyond the capability of any other nutrient and if a pharmaceutical company discovered carbs today, glucose would probably cost $100 per gram. Eating carbs regulates growth in the body directly and indirectly by affecting over a dozen hormones. There is wisdom in spending so much time deciphering the perfect carb-intake formula for various goals.

The one formula that’s eluded the industry is how to gain muscle while minimizing fat, or even possibly losing fat. I’ve seen this claim many times in many magazines and on many websites for various workout and diet plans. Most fit under the philosophy of, “do ridiculous workouts that last hours and eat very little.” A couple noticeable exceptions exist: Dr. Mauro Di Pasquale’s Anabolic Diet and Shelby Starnes’ concept of carb cycling. Programs similar to these two exist (my Carb Nite® diet is a refined version of the Anabolic Diet), but all float the concept that carbs should be cycled on a day-to-day or weekly basis. Recent research contradicts these strategies for gaining muscle. The body needs two things everyday to grow muscle, a lot of calories and a lot of carbs.

I’ve eaten a lot of calories and a lot of carbs everyday while training and I did grow muscle, but I also got fat. The current school of nutrient timing says eat most of your carbs early in the day and few at night. So I switched to eating most of my carbs first thing in the morning and fewer with each meal until bedtime. Again, I gained muscle and got fat. At this point, I was frustrated as hell. It took me a few years to learn how exercise changes skeletal muscle at the cellular level and how to use this information to time carbohydrates during the day for muscular gains and fat obliteration.

Ingesting carbs—most types of carbs—releases insulin, the body’s utmost signaler of growth. Insulin sensitivity is highest in the morning and, as it’s often understood, this means that cells of the body absorb carbs better in the morning than the evening. Thought of in this way, only skeletal muscle and fat cells matter, as most other tissue—nervous system cells, kidneys, the liver, the small intestines, etc—can use carbs with or without insulin. Fat and muscle respond stronger to insulin levels in the morning than the evening.

It is true that eating carbs in the morning allows both fat and muscle to grow more than eating carbs at night. But exercise changes this. Exercise changes everything, even the way skeletal muscle responds to insulin and blood sugar. Resistance training triggers two important changes in muscle tissue regarding carb metabolism. First, heavy resistance training increases sensitivity to insulin in muscle for up to 48 hours post-workout. Second, for a few hours post-workout, muscle cells can use carbs without insulin.

Resistance training, therefore, dissects the day into pre- and post-workout, expanding these concepts from the hour before and after training to the part of the day before training and the part of the day after.

Imagine waiting until 3 or 4 in the evening to lift. Not eating carbs up to this point, neither fat nor muscle has had much of a signal to grow. After training, the consumption of carbs begins en masse, starting with the post-workout shake containing copious amounts of a simple carbohydrate powder. A massive growth signal ensues, but in the evening after lifting, only muscle can take advantage of the signal and not body fat. This effect continues on through the night until bedtime. No more back-fat growth; no more beer-belly expansion; no more second chin. Back-loading carbs in the day tunes the body to grow primarily muscle.

The pre-workout part of my day consists, for me, of ultra-low carb. I consume 30 grams or less of carbohydrates in the first half of the day, excluding fiber. Some people can handle more, and I’ve worked with people who can eat up to 100 grams spread over three to four meals before the training session. I am not one of these people, and before experimenting, I suggesting starting at the 30 gram level or less.

After training, the only meal I keep low-fat is my post-workout shake, which is zero fat. It contains 50 grams of protein, 100 grams of a glucose-based carb powder with no other caloric nutrients. Otherwise, the latter half of the day is filled with high-carb meals, but not necessarily low-fat. The sharp spike in metabolism that accompanies the rush of carbs helps burn the dietary fat through the hours of sleep.

If muscle gets the largest signal to grow after the workout, what’s happening before and during the workout without all the carbs? That’s a fair question. Without dietary modification, before lifting, the body balances the anabolic and catabolic signals within skeletal muscle. To shift this signal in favor of anabolic signaling requires regular ingestion of a fast-absorbing protein, such as whey or casein hydrolysate, together with a few grams of the branched-chain amino acid leucine.

During the workout, glycogen stores and ketone metabolism fuel muscles. As long as glycogen reserves stay full, there’s plenty of fuel for lifting without compromising muscle tissue. Keeping carb stores full is one of the primary goals of the post-workout feedings.

Back-loading carbs runs against every dietary recommendation to guarantee a solid, strong workout. The body needs carbs to lift heavy, or so the advice goes. In most situations, assuming adequate nightly carb intake, strength, nevertheless, increases when back-loading carbs. This may sound counter-intuitive but not when considering the drug-like effects of carbs.
Optimum strength is a balance between muscle size and neural efficiency. On a daily basis, muscular size can be taken as constant. Neural efficiency depends on several factors that are daily considerations and even hourly, such as the ingesting of carbs, which actually puts a stress on the body, knocking it from homeostasis.

Carbs can be one of the strongest disruptions of homeostasis, so if meal timing isn't exact come workout time (along with a myriad of other factors) not only is the body fighting against the iron, but it’s fighting to achieve balance. Carb timing—or mistiming—may be the most common cause of a crappy workout and missed lifts.

Too many grams of carbs may be consumed too close to training time, causing a hyperglycaemic state in which nervous system cells begin firing inefficiently, blowing through calcium reserves. Too few carbs and glycaemic distress occurs, sweat starts pouring despite chills and strength dissipates. As a result, assuming glycogen stores were sufficiently replenished the night before, strength often increases and stabilizes—is more consistent from day to day—when forgoing carbs before lifting.

Granted, back-loading carbs requires effort. I have a flexible schedule, as do most of the athletes I work with, which makes planning the day around diet and workout feasible and necessary. Maximum gains require planning life around training. But it’s not always possible to get a training session in at 3 or 4 pm. Maybe training time is 7pm. Used with resistance training, no matter what time during the day, back-loading carbs always provides maximum anabolic signals to the muscle, while increasing fat burning, even if post-workout doesn’t occur until 9pm.

There’s a lot to consider and I understand not wanting to go through with all that’s required, but the payoff, for those who accept the challenge, is high. In the past two decades, after working with countless athletes at all levels, back-loading carbs is the only dietary technique I’ve seen that consistently produces strength and muscle gains while limiting—and sometimes even eliminating—body fat.

Carbs At Night: Fat Loss Killer Or Imaginary Boogeyman?
Written by Layne Norton

There are quite a few things that everyone in the fitness industry KNOWS. You have to eat 8 meals per day, consume 400g+ protein per day, do fasted cardio, use heavy weights to bulk up, and light weights with high reps to tone up… oh wait, those are all BROSCIENCE!

Don’t get me wrong, bodybuilding and fitness have been on the cutting edge of many dietary and training interventions that mainstream science is only now catching up. Unfortunately, the vetting process for many of these protocols isn’t exactly stringent. Thus, many things become accepted as fact, when in reality they are BROSCIENCE. The debate about whether or not it’s ok to have carbs at night has been all but settled in the fitness industry. You simply can’t consume a shred of carbohydrates at night or you will store fat faster than vampire rises after the sun sets!

That is, according to many fitness ‘experts’ out there, most of whose credentials are worth about as much as a thin sheet of slightly used one ply toilet paper. In this article I will look into this fitness factoid to determine if eating carbs at night was actually detrimental to your body composition or if it was all broscience.
So where did this ‘no carbs at night’ thing come from? In order to properly assess this fitness ‘fact’ we need to understand why limiting carbs at night is recommended in the first place. Most ‘experts’ who recommend limiting carbs at night do so because their assertion is since you will be going to sleep soon, your metabolism will slow down and those carbohydrates will have a greater chance at being stored as fat compared to if they were consumed earlier in the day where they would have a greater probability of being burned. Seems reasonable, but broscience always ‘sounds’ reasonable. They also often assert that insulin sensitivity is reduced at night, shifting your carb storing directionality towards fat and away from muscle.

Let’s tackle the issue of metabolic rate slowing down at night time first. The logic behind this theory seems reasonable enough: you lie down in a bed and don’t really move, just sleep, so obviously you are burning less calories than if you are awake doing stuff, even if you are just sitting in a chair or couch resting, you have to burn more calories than just sleeping right?

At first glance this seems to jive with work from Katoyose et al. which showed that energy expenditure decreased during the first half of sleep approximately 35% (1). However, these researchers did show that during the latter half of sleep energy expenditure significantly increased associated with REM sleep. So, there are rises and falls in sleeping metabolic rate (SMR), but what is the overall effect? Interestingly, at the very least it does not appear that the average overall energy expenditure during sleep is any different than resting metabolic rate (RMR) during the day (2, 3). Additionally, it appears that exercise increases sleeping metabolic rate significantly leading to greater fat oxidation during sleep (4). This seems to be in line with data from Zhang et al. which demonstrated that obese individuals had sleeping metabolic rates lower than their resting metabolic rates, whereas lean individuals had sleeping metabolic rates significantly greater than their resting metabolic rate (3). So unless you are obese, not only does your metabolism NOT slow down during sleep, it actually increases!

The idea that you should avoid carbs at night because your metabolism slows down and you won’t ‘burn them off’ definitely doesn’t pass the litmus test.

So the whole ‘don’t eat carbs at night’ thing is definitely broscience right? So far, the fear of carbs at night certainly smells like broscience, but before we render a verdict, let’s examine things further. There is also the issue of insulin sensitivity and glucose tolerance to address. This is where things get interesting. Compared to morning meals, levels of blood glucose and blood insulin definitely remain elevated longer with evening meals (5, 6). Ah ha! There it is, proof, that you shouldn’t consume carbs at night right? Not so fast. Though insulin sensitivity and glucose tolerance appear to be worse at night compared to a morning meal, it is important to keep in mind that a morning meal is after an overnight fast and the fast may improve insulin sensitivity. Perhaps a more fair comparison is a mid day meal vs. a night time meal. In this case there is actually no difference in insulin sensitivity or glucose tolerance (5).

Therefore, it appears that insulin sensitivity and glucose tolerance are not necessarily impaired and night, but rather are merely enhanced by an overnight fast.

Does any of this science mumbo jumbo actually make a difference? While it is great to talk about mechanisms and nitpick every intricate detail about metabolism, at the end of the day, we have to examine whether or not any of this stuff makes any difference. Fortunately for us, a recent study published in the Journal of Obesity examined this very question (7). These researchers from Israel put people on a calorically restricted diet for 6 months and split them into two groups, a control group and an experimental group. Each group consumed the same amount of calories, protein, carbohydrates, and fat but they distributed their carbohydrate intake very differently. One group (control) ate carbs throughout the day, whereas the experimental group consumed the majority of their carbohydrate intake (approximately 80% of the total) at the night. What they found after 6 months may shock you.
Not only did the experimental group consuming the majority of their carbs at night lose significantly more weight and bodyfat than the control group, they also were better satiety and less hunger!

Whoa hold up... less hunger? I don't buy it. You heard me right, they were less hungry. Now I'm sure all of you that have been following typical fitness protocols where you eat 6 times per day and have most of your carbs earlier in the day are thinking “man if I went more than 2-3 hours without carbs I’d be starving!” Well my friends you are buying into a vicious cycle I’m afraid. Let me explain: when you eat small amount of carbs frequently you are basically titrating in glucose to your system. To dispose of this glucose your body releases insulin to drive blood glucose into cells. Over-secretion of insulin however may cause hunger to rise (typically about 2-3 hours post meal, the approximate time course of an insulin response), but no problem, you are eating every 2-3 hours anyway right? Just titrate in some more glucose. Unfortunately this makes you crave and consume glucose like clockwork and tricks many people into thinking that they NEED carbs every 2-3 hours or they would be hungry when in fact the opposite is true. If you ate carbs less frequently with further time between carb dosings, you would be less hungry because your own body would ramp up systems that deal with endogenous glucose production, and keep your blood glucose steady. When you consume carbs every 2-3 hours however this system of glucose production (gluconeogenesis) becomes chronically down regulated and you must rely on exogenous carb intake to maintain your blood glucose levels. Now if you transition from eating carbs every 2-3 hours to further apart for the first few days you may be hungry until your body has adjusted to using gluconeogenesis to maintain blood glucose rather than just eating carbs every 2-3 hours, but once you do adjust, you will find that you are far less hungry.

Bringing things full circle, this is exactly what the researchers found! These subjects were hungrier in the first week of the diet compared to 90 and 180 days into the diet where they were much more satiated.

Control groupSo what’s the explanation for the night time carb group losing more body fat and being more satiated than the control group (maybe we should call them the ‘bro’ group)? The researchers postulated that more favorable shifts in hormones may be the difference. The baseline insulin values in the experimental group eating the majority of carbs at night were significantly lower than those eating carbs during the day (7). So much for carbs at night decreasing insulin sensitivity huh? Additionally, the experimental group had much higher levels of adiponectin, a hormone associated with increased insulin sensitivity and fat burning. They also had a trend for slightly higher leptin levels. Furthermore, the night time carb munchers had lower levels of LDL (bad) cholesterol and higher levels of HDL (good) Cholesterol.

Overall the people eating the majority of their carbs at night lost more bodyfat and had better markers of health by the end of the study than those who ate more of their carbs during the day time.

So what’s the verdict? I am not ready to say that we should all be eating the majority of our carbs at night. I would like to see this study repeated but with a bolus amount of carbs eaten at one meal in the morning to properly compare it to the single high carb meal at night, whereas the previous study compared a bolus night time carb meal vs. several feedings of carbs throughout the day. It may very well be that the beneficial effects of the diet in this study was more associated with limiting carb dosing (and insulin secretion) to a single bolus rather than spreading them throughout the day.

However, I think what can be said with relative certainly is the notion that consuming carbohydrates at night will lead to more fat gain, or impair fat loss compared to consuming them at other times of the day. So write it down “Don’t eat carbs at night bro” has officially been BUSTED as BROSCIENCE!

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I hope you all made it through all that information. I know it can be a lot to swallow at once, but this is the principle foundation of how I've managed to attain an easy to follow nutrition program that fits my busy lifestyle.

The bottom line here is there is a lot of benefit from eating your carbs before before, or at the very least, it won't somehow magically turn into fat.

So once again, enjoy your foods and enjoy your life.

#DayoftheShred program coming soon.

0 Comments
But eating protein supports your muscles. "During and after exercise, your muscle cells break down and rebuild," Cohen explains. The right proteins contain the amino acids your muscles need to complete that cellular rebuilding process. But if you eat a variety of those food sources, you can skip the meat and still get all the amino acids you need, she adds. As for post-workout food, Cohen suggests eating or drinking more protein an hour or two after lifting weights for bodybuilders and athletes.

According to Dr. Rob Danoff, an Aria Health System physician with a focus on sports medicine and nutrition, your body—and especially your kidneys—can only synthesize so much protein. When you eat crackers, dry cereal, bread, or rice cakes alone, your body converts the carbs to simple sugars and sends it directly into your blood stream. In response to the sugar rush, your body produces extra insulin, which helps your body absorb the sugar ASAP. The problem: You end up with low blood sugar and the same hunger pangs that led you to carb it up in the first place. Eat This Instead: Snacks that
contain a combination of carbs, healthy fats, and protein. They take longer to digest, and will, therefore, tide you over for longer. (Another thing: When you treat snacks as balanced mini meals, they contribute to a balanced diet instead of just holding you over between meals.) You can eat 6 meals a day or you can eat 1 meal a day. In the end, as long as your calories add up the same then it doesn't matter. But don't I need to eat at least 6 meals a day to keep my metabolism revving? Nope, this is another diet myth that just can't seem to die no matter what. Your metabolism doesn't slow down if you don't eat every 2-3 hours. But Dr. Oz said you should become vegetarian. Here's some advice – never take nutrition advice from Dr. Oz. On my list of “famous fitness people on TV I hate”, Dr. Oz is on top. On the other hand, if you love those foods, then I encourage you to eat carbs on a regular basis. Don't let anyone tell you that you shouldn't eat carbs when trying to lose weight since it promotes fat storage and whatnot. Just watch your calories, and you'll be fine.