

Don't Train on an Empty Stomach to Lose Weight

I've read recently in a couple of different articles where people are recommending riding before breakfast to force themselves to burn more fat. There are two problems with this approach and I'll discuss them in this article. But first, let's look at how the body produces energy. At all times, your body is burning both fat and sugars along with a minimal amount of protein. Your body only burns sugar in the form of glucose, which is derived from dietary carbohydrates (starches, sugars). However, the proportion of the contribution of fat and sugar to your overall energy varies with the intensity of your activity. When you are at rest, you produce a majority of your energy from the burning of fat. When you start becoming more active, you begin burning more sugar for energy. When you are riding your bike at an easy to medium pace, you are generating calories in approximately equal proportion from fat and sugar. As you pick up the pace, you begin obtaining a higher proportion of energy from sugar and a lower proportion of calories from fat. There is a general belief that to burn body fat, you must keep intensity down to keep the proportion of fat calories up. However, the fallacy of this is that proportions don't burn fat, the absolute amount of calories you burn versus consume is what will trim body fat. To lose fat most effectively, you should burn as many calories as possible and cut back on eating. It doesn't really matter if you burn fat or sugar during exercise, if you burn more calories from any source than you consume, the net result is your body will eat into its own fat stores over time.

There is also the fallacy that riding with low sugar reserves will force your body to burn more fat. Here's what happens when you train on an empty stomach. Let's say you get up in the morning and head out for a ride before eating anything. Your body's reserves of sugar is already somewhat depleted from your night's fasting since dinner the evening before. Your body can store about 2000 calories worth of sugar as glucose and glycogen. These are found in your blood, muscles and liver. As you train with depleted sugar reserves, if you ride hard enough or far enough, you will completely deplete your sugar supplies. When this happens, marathoners call it 'hitting the wall', whereas cyclists, because we are cool, have a better name for it: "bonking". When you bonk, you have depleted your blood sugar and body's reserves of glycogen. Your body needs to have some glucose at all times to function, namely your brain. So when you deplete your stores, your body has to manufacture it. The way it does this is by breaking down protein, from your muscle tissue, into amino acids which it can then convert to glucose, using a process called gluconeogenesis. Doing this is destructive to your hard-earned muscle tissue, but it is a survival mechanism to keep your brain, and therefore your body functioning in the absence of adequate dietary glucose.

Another thing happens when you bonk. You are forced to rely almost completely on fat metabolism to generate your energy needed to keep moving. Fat releases a large amount of energy and your body has tens of thousands of stored calories as fat. But the downside is fat metabolism is slow and cannot keep up with the demands of vigorous exercise, so you are forced to slow down. If you have ever bonked, you know this feeling. You become lethargic quite suddenly and it is all you can do to get home from a ride. Not a pleasant experience. In addition, although you are relying to a high degree on fat burning when bonking, your total calorie expenditure goes way down due to the slow nature of calorie release. So if you are trying to lose weight by riding without eating first, it turns out to be a bad idea. Let's say you typically burn 600 calories per hour of moderately intense riding. If you bonk halfway through your ride, you may be reduced to burning 150 calories during the last half hour, so you end up burning only 450 calories during this ride, not to mention having a fairly unpleasant half hour of riding as well, and burning up your precious muscle tissue in the process.

Also, if you are trying to train to improve your cycling performance, you need to train at an intense level. There's no way you can do this with depleted sugar reserves. You need to have adequate sugar in your body to make it through a productive and hard training session.

You would be better off eating enough prior to your ride so you avoid the dreaded bonk and are able to maintain a vigorous pace during the entire ride. You will end up burning more calories during the ride, some more following the ride due to EPOC (excess post-exercise oxygen consumption), and you save burning muscle tissue for energy. You are much better off eating enough to have a good ride where you

will be able to enjoyably burn a lot of calories, then trying to ride in a sugar-depleted state and ending up burning less overall calories and consuming muscle tissue for fuel.

If you are trying to lose body fat, cycling is a great way to do it. But make sure you are eating some carbohydrates prior to your rides to have ample energy to have a good, energetic ride, and eat some carbohydrate and protein following your rides for refueling and recovery. Then cut back on eating at other times of the day to create an overall calorie deficit. Cutting back on eating prior to a ride is not the best way to lose fat and maintain lean body mass.

All the best in training, eating and fat burning,
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