# CARBOHYDRATE: How to eat carbohydrates the smart way?

In this chapter, we will go over the much-debated topic of carbohydrates. A huge discussion has gone on for more than ten years about the need for and effect of carbohydrates. Some say they are vital; some say they are outright poisonous! I want to approach this topic with a clear mind and scientific evidence.

First off - what is the role of carbohydrates in human biology? Carbohydrates are the primary fuel for cell energy and they are the fastest source. So the organs and tissue that need it the most can’t function without carbohydrates. Most of all, I’m talking about our brain. Our brain must get around 125 grams of carbohydrates every day (this amount is less in ketosis, another topic entirely). What happens when we don’t offer this amount to our brains daily? No - we won’t get braindead. Instead, our liver starts to break down glycogen storage (which is around 400-700 grams of stored glucose in our liver and muscles) and use this. But what happens if those storages are depleted? Our brains still won’t suffer. Instead, our smart biology starts to turn our body's protein into glucose. This protein comes mainly from muscle and can lead to muscle wasting and lowered metabolic rate. That’s usually the problem with low carb diets - they don’t cover the body's need for extra protein to turn into carbohydrates.

So, we know that our body needs at least 125 grams of carbohydrates per day, but where else is carbohydrate needed?

As we’ve noted, glucose is the fastest energy source from the diet (compared to fatty acids and ketone bodies). That’s why our body's carbohydrate needs to go up the more intense physical activity there is. For example, our muscles can work fine with mainly fat energy while we sleep or sit or even walk. But when we lift weights, run, swim, or walk up the stairs, our muscle cells need that fast energy from carbohydrates. If it doesn’t get it, it starts to break down muscle protein and turn it into glucose, as we’ve discussed before (and raise cortisol levels simultaneously). So, the more active you are - especially higher intensity physical activity, where your heart rate goes up, the more you need dietary carbohydrate to fuel the muscles and prevent muscle protein breakdown. How much? It is quite hard to give you exact numbers as our metabolisms and physical activity levels differ much from person to person. A passive person can start somewhere around 40% of daily dietary energy coming from carbohydrates. A very active person - endurance athletes, for example - might have 70+% of their energy coming from carbohydrates. Most of us fall in the middle of that spectrum. 50% of daily energy coming from carbohydrates is a good starting point. But as I’ve said, it is an approximation and we’re all different. That means you’ll have to start from some point and test out what works for you.

How do you know if you are getting enough carbohydrates? It is quite a common problem and some signs can tell us if your body (brain) needs more carbohydrates, taking into account that you don’t lack other nutrients. The common symptoms are fatigue, dizziness, hunger for a short period after eating, problems in sleeping, risen heart rate, lowered physical and mental performance, and sometimes thirst. If you experience those symptoms for more than a couple of days, you should try to raise your carbohydrate levels slowly. I usually suggest raising them 10-20 grams per day to more precisely see the levels at which a person's well-being returns. This is this person’s carbohydrate intake target. There is no need for you to suffer from too little carbohydrate amounts and it won’t make you lose fat faster. Just the opposite - your metabolism will slow down.

But how do you know if you are getting too much carbohydrate? This one is tricky because your body won’t give you any clear signs of carbohydrate overdose. That’s why it is easy to eat oneself overweight over the years with carbohydrate overload without feeling any difference. But there is also an excellent side to this. As long as you are getting the right amount of overall calories per day, there is no problem at all if you are eating a little more carbohydrates than your body needs at that moment. All the extra carbohydrates will be used for fuel anyways, just like the fat you eat. There is no significant difference in getting 45% or 55% of calories from carbohydrates. My point is not to worry too much about eating carbohydrates a little over your minimal need so as long as they come from quality sources and your overall calorie consumption is in balance.

How to start? It’s relatively easy. The first step is to dump from your diet everything you don’t necessarily need, isn’t natural, or doesn’t add health benefits. What is left after that is often good enough? After that, it is time to add some good carbohydrate sources to your diet.

So, what are the good sources of carbohydrates that you should eat? They have two things in common: they are so-called slow carbohydrates and they contain good fiber. We’ll talk about fiber in a different video, but as for “slow” - it means that they take longer to absorb and won’t cause a spike in your blood sugar and insulin. It’s also known as a low glycemic index. Most natural carbohydrate sources have a low to the medium glycemic index. Fast absorbing carbohydrates are mostly in processed foods.

The best sources of carbohydrates are:

Fiber-rich vegetables are like broccoli, cauliflower, carrots, leek, spinach, asparagus, zucchini, brussels sprout, radishes, and so on. Be aware of high carbohydrate vegetables like potatoes. They aren’t restricted, but they don’t have as much “good stuff” for all the carbohydrates they contain. How many vegetables a day? Aim for at least 500 grams or 18 ounces. The more the better. Don’t worry, nobody in history has eaten himself fat from broccoli. 500 grams or 18 ounces fills the stomach very nicely, contains lots of fiber, slowly absorbing carbohydrates and other healthy nutrients. But of course, the other thing to consider is how your intestine can take those amounts. We’ll talk about the so-called side effects of diet change in another chapter.

Whole grains/cereals, like oat, buckwheat, quinoa, and rice. Wholegrains have a good composition of micronutrients like vitamins and minerals and different kinds of fiber. Whole grains are the best option to fill your daily carbohydrate need. They don’t have to be in a porridge/cooked form; for example, mysli or low carb oat bread or crispbread are great whole-grain foods to consider.

Fruits and berries. Fruits and berries contain amazing micronutrients and health-promoting flavonoids and antioxidants that you can’t get anywhere else. In general, they have the highest glycemic index of natural carbohydrate sources. That’s why they fit perfectly as pre or after workout meals, or as breakfast, after a fast.

So to sum up this topic: There is no need or sense in restricting carbohydrate consumption too much. It might cause more harm than good. You should aim to get the minimal needed amount of carbohydrates from the best sources. Usually, it is at least 40% of all calories. But we are all different and with different needs. If you don’t feel good or are more physically active, raise your carbohydrate levels depending on your physical activity levels. The best carbohydrates sources are low carb vegetables, of which you should get at least 500 grams or 18 oz a day; whole grains/cereals, fruits, and berries. Of course, some carbs come from protein and fat sources, like seeds and cottage cheese, so those make up some of the need. So don’t be afraid of carbs; besides fast energy, you’ll get many nutrients like fiber, vitamins, and flavonoids that you won’t get from other sources. The point is to eat enough, but not too much.