Intra-workout Carb

How many times have you found yourself crushing your workout for the first 45 minutes and then all of a sudden you feel like a ton of bricks just smacked you in the face during a set? Your intensity starts fading, you start needing longer rest periods, and worst of all the pump that you had been chasing slowly starts to get away from you! Sound familiar? Naturally we understand this as fatigue and we do our best to push past it, but once it sets in we don’t last long. Similar to how when a car runs low on gas you fill up the tank again, when we run low on energy, we can fill up our tank with intra-workout carbohydrates!

**Why Carbohydrates?**

Intra-workout carbohydrates are an excellent source of immediate energy when your pre-workout carbohydrates get used up or simply cannot be in high abundance, like for morning workouts, as well as when daily carbohydrate intake may be low as when in a caloric deficit. This is because carbohydrates are the main fuel source muscle uses to contract and are the primary fuel source for high intensity training that requires short burst of energy like bodybuilding, powerlifting, and CrossFit.

When carbohydrates are ingested, they become digested, and enter the bloodstream. This increases blood glucose levels, initiating a release of insulin which helps pull the carbohydrates into muscle and fat cells and store them as glycogen.

**What Type of Carbohydrates?**

While carbohydrates are the primary fuel system to fuel our bodies during physical activity, not all carbs are optimal for intra-workout use. Carbohydrates can range greatly in how quickly they are digested and readily available for use, dependent on the source you are consuming them from. Carbohydrates are rated and ranked on what’s called the Glycemic Index. The Glycemic index classifies carbohydrates based on the affect they have on blood glucose levels. High glycemic carbohydrates digest quickly, providing a large insulin spike which creates rapid spurts of energy with a short life. Low glycemic carbohydrates provide a low insulin spike that give a steady input of energy as they take longer to digest.

While low glycemic carbohydrates are typically from more nutrient dense foods like sweet potatoes, brown rice, rolled oats, and whole wheat breads, we want high glycemic sources for intra-workout carbohydrate intake to provide immediate energy! This is a great time to have a little fun with your diet as you can consume carbohydrates from sources like your favorite sports drink, and even candy! While fruit can be a high glycemic food, it is not recommended for intra-workout carbohydrate use as the type of sugar it’s composed of will store in the liver and not muscle.

**Types of Sugar**

Sugar is simply a carbohydrate made up of short-chains allowing for quick digestion. I think many people forget that every carbohydrate eventually gets broken down into a simple sugar. Sugar is infamously known from the media as “evil” and often gets associated with scary phrases like “insulin spike” and diseases like cancer and diabetes that makes us feel guilty for having anything that contains it. While a diet in high simple sugars is not ideal for overall health and can cause unhealthy eating habits, simple sugars can be optimally used for enhanced performance when taken at the right time.

Sugars are broken down, pun intended, into 3 groups; monosaccharides, disaccharides, and polysaccharides. For today, we will focus on just the first two. Monosaccharides, or one sugar, includes glucose (also called dextrose), fructose, and galactose. Disaccharides, or two sugars, include sucrose, maltose, and lactose.

Keeping it simple, utilizing monosaccharides like dextrose will be your best source for intra-workout carbohydrate intake since it’s the most readily available for energy use. As mentioned earlier, consuming fruit will be broken down and stored in the liver. This is why fructose, sugar from fruit, is not recommended. Galactose, common from dairy products, is not ideal as dextrose as it has to be converted into glucose before utilized.

**How much Dextrose and When?**

Now that we have established dextrose to be the best intra-workout carbohydrate source, you may still be confused on what products contain mostly dextrose, how much you should consume, and when during your workout is best to consume it!

Sources:

Foods such as honey, candy, cereals, and starchy carbohydrates like white bagels and bread all have a high dextrose content. While these foods might be more enjoyable to consume than a liquid, liquid forms of dextrose are superior as they can avoid any form of mechanical digestion, and immediately enter the bloodstream. This is why a sports drinks like Powerrade and Gatorade are excellent sources, or even straight dextrose powder which can be found at your local supplement store. If you are an advanced athlete looking to really bring your intensity up and have extra income to invest into your sports performance, look into cyclic dextrose, which is a unique molecular form of the sugar that allows for rapid gastric clearance, with no stomach discomfort. I mention stomach discomfort because while intra-workout carbohydrates can be helpful, if consumed too quickly or too much at one time, you can risk stomach discomfort. This is why I recommend eating over the course of the workout and not all at once, or if you are drinking your carbs to sip throughout your workout while making sure to consume enough water. To find out exactly what works best will be individualized for you and should be tested to find out what method you prefer.

How Much & When:

For a general guideline, consume 20-30 grams for every 45 minutes of high intensity training. Again, this is a general guideline and should be taken into consideration for overall activity intensity, length of training, and daily carbohydrate allowance. The first 45 minutes of a workout should be adequately supplied with enough energy from previous meals. I recommend to begin consuming your intra-workout source after the first 45 minutes and take at least 15 minutes to eat or drink it.

**Final Notes:**

If you have never consumed intra-workout carbohydrates, you may not know what to expect. The change in endurance and power output can be subtle or a big change, but regardless will provide benefit. Whether that be just pushing yourself for an extra few reps, sets, or making you able to do another exercise, cumulatively the change can pronounced. Intra-workout carbohydrates should be used for high endurance exercises where short bursts of energy and muscle breakdown is occurring. Going on a 45 minute power walk or a performing a 30 minute full body workout should not require additional carbohydrate use more than the carbs prior to your activity.

When it comes to getting the most out of your time and effort in the gym, I highly recommend intra-workout carbohydrates if your daily caloric allowance allows you to do so as the increase in performance, delay in mental fatigue, fighting off of catabolism, can all aid in better body composition.