



## Carbohydrates 101 - Are all carbs the same?

Carbs. We all love them. They're usually really tasty, filling, comforting and remind us of a Sunday lunch at grandma's house. Whatever the reason is, it is important to note that carbohydrates are NOT essential to the human being. Unlike protein and fat that have essential amino acids and fatty acids respectively, CHO is not vital to the human body for survival. That said, they are an extremely effective tool for exercise/sport when used as the primary energy substrate. Also, they can be a fantastic aid during a fat loss or body re-composition diet when used intelligently.

### What happens when I consume carbohydrates?

All food is insulinogenic to some degree but carbohydrates have the greatest influence on how much insulin the body produces and even that depends on the type of CHO. When we eat a food source rich in carbs, our bodies break it down into glucose, insulin is released and the glucose is then stored as glycogen in the muscle tissue first and then the liver. Any excess will be stored long term – you guessed it, as body fat. Now, it is not carbs alone that cause the addition of body fat, just be aware of that, but that's another article altogether. For now, excess kcals, some of which will be carbs, will be stored as fat to be used in the future during carbohydrate/calorie sparse periods of time (as a survival mechanism).



When glucose is being stored as glycogen in the muscle cell, any free amino acids that happen to be in the bloodstream will also be forced inside the cell. This is highly advantageous for the active individual, as it is partly this process that helps rebuild and repair damaged muscle cells (NB: amino acids can make their way into the cell as protein is insulinogenic in itself). It is this reason why we are advised to eat a meal rich in carbohydrates, with moderate protein after an intense bout of exercise.



## How much carbohydrate should I include in my diet?

The only real answer to this, as with a lot of questions in fitness/health/performance is: it depends. It depends on your goals at any moment in time. Training for an intense sport such as triathlon, strongman, rugby or hockey will require a higher carbohydrate intake than that of individuals wanting to lower their body fat percentage, or training for a less intense sport (I won't name any of these to avoid insulting any readers). It also depends on your current Fat-Free Mass (FFM), current body fat percentage, daily calorie expenditure (how active day-to-day life is) and then the daily exercise expenditure on top of that.

From the recent literature of scientific studies and depending upon the type of exercise completed, 1g-1.2g/kg of carbs should be consumed within the first 30mins of exercise completion and then the same for every 2 hours up to 6 hours post exercise. These will generally be of higher GI post training, and then lower GI further away from the training.

For example, a 100kg male rugby player may take 100-120g of carbs post training in the first 30 mins and then a further 100-120g CHO in each meal over the following 6 hours, therefore having around 400-500g of CHO post exercise.

Please take into consideration that these studies look at athletes working towards increasing performance and not the everyday fitness enthusiast wanting to shift some body fat and become fitter. This is where it becomes tricky to give general guidelines. That said if performance is what your goal is then these amounts will be adequate if total carbohydrate intake is circa 40-50% of total caloric intake. Those individuals looking to become leaner may take a significantly lower amount of carbohydrates, or adopt a carb-cycling protocol to reduce the total amount of CHO intake over a given week. You can start to see just how specific the demands for carbohydrates are when we start to look at all the criteria of the individual. It is nearly impossible to prescribe amounts in a single article, which is why cookie-cutter plans from websites rarely work.



## Sources of carbohydrates.

Carbohydrates are found in a wide variety of foods, too long to simply list. Below is a list of just some of the options available to us, split into high GI and low GI.

### High GI Carbohydrates:

Sugars (Maltose, Glucose, Sucrose), Honey, Puffed/Flaked Cereals, White Rice, Couscous, Wheat, Corn, Rice Cakes, White Pasta, White Potatoes, Candy, Carrots, Corn, Peas.

### Low GI Carbohydrates:

Nuts, Legumes, Fructose (basic sugar found in fruits), Brown Pasta, Dairy, Plums, Peaches, Apples, Oranges, Grapes, Pears, Grapefruit, Brown Rice, Sweet Potatoes, Oats, All-bran, Most Vegetables, Quinoa.



### Take home points:

- If you are very active and/or play a rigorous sport – increase CHO intake.
- If you have less body fat you MAY increase CHO intake if you desire.
- Do not completely eliminate CHO from your diet, as it is fantastic for recovery for your next training session.
- High GI intake close to training, low GI/higher fat intake further from training.

### References

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