

# Not all Carbs have the same effect in the body!

Success in endurance activity is a result of a multitude of genetic and physiological factors. While many of these factors are out of our control, one major player in the success of the endurance athlete is fluid and nutrient intake in and around training and competition.

Human body needs carbohydrate as they are the body's ideal fuel for most functions. The **World Health Organization** advocates the consumption of low fat and about 60% of carbohydrate based diet. The key to good health is choosing the good carbs which have low Glycemic Index (GI).

Glycemic index ranks foods on how they affect our blood glucose levels and is about the quality of carbohydrates not the quantity. Low GI carbs slowly trickle glucose into the blood stream keeping your energy levels balanced and provides feeling of fullness.

Research has shown that very high glucose levels after meals, called glucose spikes, are damaging to our arteries and various blood vessels, and they promote far too much insulin to be around.

Eating low-GI foods means you avoid those spikes and dramatic falls in blood-glucose so you get a much steadier stream of energy. You, therefore, reduce your risk of heart disease and other chronic diseases that are implicated by those blood-glucose spikes.

<b>Low G.I. Foods</b>	<b>below 55</b>
<b>Intermediate G.I Foods</b>	<b>55 to 70</b>
<b>High GI Foods</b>	<b>above 70</b>

There are times when low G.I. foods provide an advantage and times when high G.I. foods are better. For best performance a serious athlete needs to learn about which foods have high and low G.I. factors and when to eat them.

## ➤ How much carbohydrate do you need?

Scientific studies suggest that athletes should get 55-70% of their energy from carbohydrate (7-10g per kg of body weight per day). Your daily carbohydrate requirement depends on the weight as well as the training hours.

Weight (Kg)	Training Hours			
	1	2	3	4
50	150g	300g	400g	500g
60	200g	400g	500g	600g

<b>70</b>	<b>250g</b>	<b>500g</b>	<b>600g</b>	<b>700g</b>
<b>80</b>	<b>300g</b>	<b>600g</b>	<b>700g</b>	<b>800g</b>
<b>90</b>	<b>350g</b>	<b>700g</b>	<b>800g</b>	<b>900g</b>

➤ **How to choose carbohydrates before, during and after workout?**

For athletes seeking peak performance in events, there are times you need low GI carbohydrate (before a workout for events lasting more than 90 min's) & times when a high GI carbohydrate will be beneficial (during & after workout).

**Before workout:**

*Research studies have proven that athletes consuming low GI carbohydrate 1-2hrs before workout can maintain their intensity for 20 min longer than those who take high GI food.*

**Examples of Low GI carbohydrates:**

- Spaghetti whole wheat, cooked (140g) : GI - 32; GL - 11
- Wheat tortilla (50g) : GI - 30; GL - 8
- Skimmed milk (250ml) : GI - 32; GL - 4

**During workout:**

Carbohydrate ingested during exercise can indeed be oxidized at a rate of roughly **1g per minute** (supplying approximately **250kcal per hour**) and a number of studies subsequently showed that this could be supplied and absorbed well by **drinking 600-1,200ml of moderate to high GI** carbohydrate solution.

**What's not in a sports drink is almost as important as what is in it.**

Researchers from University of Florida claims that sugars & artificial sweeteners in sports drink depletes fluids, which can be detrimental to performance & sends a wrong biochemical message to the body.

An ideal carbohydrate solution (homemade/commercial) should contain:

**14-20 grams of carbohydrate (glucose, sucrose, maltodextrin) per 250 ml + approximately 100 mg sodium per 250 ml.**

**Examples of suitable drinks:**

- Orange juice (250ml) : GI - 52; GL - 12
- Peach juice (250ml) : GI - 50; GL - 11
- Glucose/dextrose (18g dissolved in 250ml water): GI - 99; GL - 12

## After workout:

**Following exercise**, a high GI carbohydrate has the ability to shuttle glycogen into the cell quicker and more efficiently than low or moderate GI carbohydrates and this determines the readiness for next day's workout. Remember, it takes up to **24 hours to replenish** body glycogen stores fully, but storage rates are enhanced in the first couple of hours after exercise. Therefore, the timing of carbohydrate is just as important as the amount & type of carbohydrates. Try to consume about **1g/kg body weight of high GI carbohydrate within 2 hrs** of your workout.

### Examples of High GI carbohydrates:

- Oats, cooked (250g) : GI - 66; GL – 17
- Baked beans (240g) : GI - 48; GL – 25
- White bread (1 slice) : GI - 70; GL – 9
- Honey (1 tbsp) : GI - 87; GL – 10
- Baked potato (180g) : GI - 85; GL – 31
- Muesli (55g) : GI - 55; GL – 23
- Banana, ripe (100g) : GI - 51; GL – 13
- Corn flakes (30g) : GI - 92; GL – 22
- Rice (150g) : GI - 69; GL – 30

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