



What do I eat before and after I workout?

How you fuel your body is how it will respond under the pressure of exercise. Our bodies are some of the most powerful generators of energy on the planet, but we have our limits, and ways to optimize our efforts. We typically break it down into three phases:

- I.) Pre-Workout
- II.) Mid-workout
- III.) Post-Workout



First some global basic rules to follow:

- 1.) Physical activity can be strenuous, so make sure that you habituate new foods and only try foods that you are used to.
- 2.) Consume smaller amounts, the closer you get to the workout, whichever it is
- 3.) Avoid high fat / fiber foods pre-event as they can cause stomach cramping due to slower digestive process
- 4.) Mind “sugar alcohols.” While not sugar, nor alcohol in the conventional sense, they can cause cramping, bloating, and potential laxative effects. Some common SA’s are sorbitol & mannitol. These can be commonly found in sugar-free gum, toothpaste, and mouthwashes.

I.) Pre-workout

When we think workout, we have to also acknowledge what TYPE of workout we are engaging in? Is it a gym session? An endurance event? The duration and energy systems used, as well as what you are accustomed to are significant factors in how you will fuel yourself pre-workout

General Recommendations:

- 1.) Pre-hydrate several hours before your workout, or if you’re an early bird, as soon as you wake up
- 2.) If you have sensitive GI issues, consider eating several hours pre-workout to limit cramping/bloating, etc.
- 3.) Depending on how long before your workout, you should consider how much to consume beforehand, we’ve included a table on the next page to help you ballpark this with some examples of foods that could fall under those qualities
- 4.) **Glycemic Index:** a mix of High and Low GI foods can help. High GI to prompt fast-acting response of the pancreas, and Low GI to prevent a subsequent “sugar crash.”

* These are for example purposes to ballpark what certain macro recommendations look like. Food choice is very contextual to your goals, patterns, adherence, and relationship with it.

Time Before Comp	Macro Recs	Fluid Recs	Sample Meals	Macros of Samples
> 1 hour	0.5 g of Carb / Kg of Bodyweight		1 Banana 8 oz Sports Drink	37g Carb 8 oz Fluid
2 hours	1g of Carb / kg of Bodyweight	3-5 ml / kg of Bodyweight	2 mini bagels w/ 1 tbsp jam 8 oz Sports Drink	72g Carb 8g protein 8 oz Fluid
4 hours +	1-4g of Carb / kg of Bodyweight (more if big endurance event)	5-7 ml / kg of Bodyweight	Bowl of Cereal ¼ cup Raisons 8 oz of Skim Milk 14 oz Sports Drink	72g Carb 17g Protein 14oz Fluid

II.) Mid-workout

This is probably the most niche example of the three workout phases you'll encounter. Here are some examples of where that will be relevant:

- a.) Endurance events lasting longer than 45 minutes
- b.) Intermittent Activity Sports (think Football, Soccer, tennis lacrosse, etc)
- c.) When engaging in two-a-days



For most other goals (strength, hypertrophy, fat loss, etc), you'll probably just want to adequately hydrate mid-workout and then proceed to the following section on Post-Workout Nutrition.

General Recommendations:

- 1.) Consume 28-144g of multiple carbohydrate sources together (sucrose, fructose, glucose, maltodextrin) per hour of exercise based on intensity level, body weight and what you are accustomed to in training.
- 2.) Do not experiment with anything you haven't trained to do
- 3.) For sports drinks, aim for 460-690mg of Sodium / L of water and 78-195mg of Potassium / L of water (check the nutrition label for info on relative proportions)

III.) Post-workout

What's the purpose of post-workout nutrition?

What you take in after a workout is designed to help athletes rehydrate, replenish glycogen and repair muscle tissue.

1.) As far as the most efficient type of protein to enhance muscle synthesis, look for the Branched Chain Amino Acid (BCAA): leucine. Between **20-25g of protein** can be beneficial after a workout for stimulating muscle synthesis. May be higher for Strength/hypertrophy goals.

2.) Carbohydrate intake directly after a workout isn't always statistically necessary either. Our glycogen synthesis is pretty rapid for the 5 hours after a workout, so replenishing **1.5g of Carbohydrates/kg of body weight** would be a good starting point within that period.

3.) Hydration strategies should also be heavily individualized based on heat, sport, and pre-activity levels.

Let's also dispel a few common myths for your "post-workout" consumption.



The Anabolic Window

The anabolic window is the alleged magical period for muscle growth and protein synthesis that exists right after the workout where it's usually 30 minutes to properly fuel your body after the workout.

Studies show no direct correlation to significant long-term studies of this, but it does have one big benefit. Most people do not get adequate protein intake, so having a set "post-workout" consumption that is not a "breakfast/lunch/dinner" meal can habituate proper intake of protein and work into the biggest challenge for anyone exercising: habit formation.

Eating at Night

There are also studies that show when trying to "gain" weight, it's integral to eat a bunch at night, in the form of extra calories and "slow-release" protein such as Casein. The reality is that this can sometimes be counterproductive. While you won't "store food eaten late" as fat, it can raise your hormonal levels enough, especially if it's a fast-acting carbohydrate that can make restful REM sleep a little problematic to settle into.

The real key is to hit your **daily protein goal** and **daily caloric goal**, so for reference, we've left a table on the next page with more information on your pre- / mid- & post- workout looks like.

Goal	Pre-Workout	Mid-Workout	Post-Workout	Notes
<i>Aerobic Endurance</i>	0.5-4g / kg bodyweight of Carbs based on how long pre-workout consumption is	28-144g / hour of Carbohydrates 460-690 g Sodium / L of water 78-195 g Potassium / L of water	20-25g Protein 1.5g / kg in Carbohydrates after	1.0-1.1g / kg body weight in Protein daily 8-10g/kg bodyweight in carbs daily
<i>Strength</i>	0.5-4g / kg bodyweight of Carbs based on how long pre-workout consumption is	N/A	30-100g Carbs 20-30g Protein (high leucine)	1.4-1.7g / kg body weight in protein daily 5-6g / kg bodyweight in carbs daily
<i>Hypertrophy</i>	0.5-4g / kg bodyweight of Carbs based on how long pre-workout consumption is	N/A	30-100g Carbs 20-30g Protein (high leucine)	1.5-2.0g/ kg bodyweight in protein daily 5-6g / kg bodyweight in carbs daily
<i>Muscular Endurance</i>	0.5-4g / kg bodyweight of Carbs based on how long pre-workout consumption is	N/A	20-25g Protein Prevent >2% loss of bodyweight in hydration 1.5g / kg in Carbohydrates after	> 1.6 g/ kg Bodyweight in protein daily 8g/kg bodyweight in carbs daily