



E - B O O K

**THE ULTIMATE
NUTRITION
GUIDE FOR
MAXIMAL
PERFORMANCE:**

ENHANCE YOUR
STRENGTH AND
ENDURANCE WITH
DIET

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Let's get started and become the best version of yourself!

Introduction

What do weekend warriors, recreational lifters, varsity athletes, and Olympians have in common?

That's right-they can all benefit from optimizing their diet to help their sports performance. No matter their body type or level of exercise, all athletes may benefit from a good diet.

When trying to maximize your performance, whether it's endurance or strength, cookie-cutter diet plans just won't cut it. Instead, you need to understand the underlying principles behind the nutrition you need and individualize accordingly.

Since I don't think I need to convince you of how big of a role proper nutrition plays in sports, let's get right down to business.



BASIC NUTRITION.



Protein 101

When you exclude water and fat, our body is mostly comprised of protein.

Protein is the main component of all tissue, including muscles, bones, organs, skin, ligaments, tendons, and nails. It's the primary building block in our body and allows us to grow, repair, and build all tissues.

Protein can be broken down into amino acids. There are two types of amino acids: non-essential and essential.

Since your body can create non-essential amino acids, they don't need to be absorbed through diet.

That being said, you must get the essential amino acids from your food.



You can get all of the essential amino acids through animal foods like meat, poultry, fish, eggs, dairy, and other animal-based foods. These foods are excellent sources of protein since they contain all of the essential amino acids and a lot of protein.

Although it is a bit harder to get the essential amino acids, vegans have options too.

Various plant protein sources, including beans, lentils, nuts, seeds, and soy, as well as smaller amounts in grains, vegetables, and fruits, can provide you with the right amino acids.

1 gram of protein has exactly 4 kcal.



Carbohydrates 101

Although they have gotten a bad rep over the past years, carbs are a major energy source in our body. They also help us synthesize certain amino acids.

Two types of carbs exist, simple and complex carbohydrates.

Simple carbs get easily broken down and turned into glucose by our body. They are usually found in sweet foods, such as fruit, sugar, honey, milk products, etc.

They are further separated into two groups called monosaccharides and disaccharides, which are then separated into three more groups each.



This isn't vital knowledge, but you've probably heard about fructose and lactose, two of the six monosaccharide and disaccharide subtypes.

Complex carbs take more time to get broken down by your body since they contain more than two sugar molecules.

They are present in foods like grains and starches, including starchy vegetables like potatoes and corn, bread, pasta, and rice. Although in smaller quantities, other plant-based foods like seeds, nuts, and beans also contain complex carbs.

Complex carbs contain fiber unless they are artificially processed. This is achieved by removing the outer coating of the grain, and that's how we get foods like white bread, white rice, and white pasta.

Although making complex carbs easier to digest, this process reduces a lot of their nutrients.

1 gram of carbohydrates also has 4 kcal.

Fat 101

Fat, among other things, is used to store energy, produce certain hormones, protect our organs, keep us warm, and absorb fat-soluble vitamins.

There are three types of fat: saturated fat, unsaturated fat, and trans-fat.

Saturated fats in large amounts can increase your risk for heart disease. Decreasing the amount of saturated fat you consume can be beneficial.

Unsaturated fats are referred to as the "good fat" since they can help lower the risk of heart disease. They are found in nuts, avocados, seeds, olives, and oils (olive, canola, etc.)

Unsaturated fats are split into two groups—monounsaturated fat and polyunsaturated fat. Although slightly different, consuming both types can help improve your heart health and blood cholesterol levels.

Trans fat should be eliminated from your diet completely. They can be found in foods such as margarine, anything fried, doughs, etc.

Fat contains 9 kcal per gram, which is one reason it gets a bad reputation.

The truth is we need fat to keep our bodies functioning correctly.



**ENDUANCE
NUTRITION.**



Now that we got the boring stuff out of the way, it's time to get to the meat and potatoes of this guide. We will cover everything from macronutrient ratios to meal timing.

The general rule of thumb regarding the ratio of macronutrients is that you should consume 55% of your calories from carbs, 20% from protein, and 25% from fats. Of course, this can change based on the individual and most definitely changes during the carb loading protocol.

Your daily caloric needs will depend based on the phase of training you're in.



Protein Recommendation

Even though carbs and fats contribute to the biggest amount of energy provided during exercise, protein isn't just for bodybuilders.

Endurance athletes need anywhere from 1.2 - 1.4 to 1.5 - 1.7 grams of protein per kilogram of body weight, depending on the study. Athletes competing in more extended events need more protein, so they may even have to go up to 2 grams per kilogram.

After about an hour and a half, endurance athletes almost completely deplete their glycogen stores, making protein/muscles a target for energy production.

After two hours of an endurance event, 15% of all energy consumption is handled by protein.

This means that adding protein to your drinks or snacks during the event can be helpful. However, even though all of this is true, carbs need the most replenishment during long endurance bouts.

Aim for about 5 grams of protein every hour if you are training or racing for more than 4 hours. Sports drinks, energy bars, and complete food substitutes like turkey jerky and peanut butter sandwiches are familiar protein sources for endurance athletes.

Try to consume 10 to 20 grams of protein immediately after finishing the race.



Carbohydrate Recommendation

Physical activity requires glucose, which is stored as glycogen in the liver and muscles.

The body's glucose reserves are heavily taxed during vigorous activity of all intensities, and exhaustion results from the depletion of these reserves.

Besides consuming around 55% of your daily caloric goal from carbs, there's also a technique called carb loading, which increases your glycogen reserves and improves endurance. If done correctly, it can decrease the time to exhaustion by up to 20%. The protocol is done as described below.

If you're seven days away from a race, cut out the high-intensity exercise in your routine and consume around 50% of your calories from carbs.

You should cut the intensity of your training in half during the next two days, but you should still aim to consume 50% of your daily calories from carbohydrates.

Reduce your exercise intensity even further two to three days before the competition while increasing your carbohydrate intake to make up 70% of your daily calorie intake.

Completely stop training the day before your competition while consuming 70% of your calories as carbohydrates.

While it does not affect high-intensity bouts lasting up to 30 minutes, carb loading significantly affects events lasting more than 90 minutes.



Although the low-carb diet may make you feel lethargic for the first few days, you must go through that phase to get your glycogen reserves properly loaded up.

After the first hour of an endurance event, you should get around 100 to 250 calories or approximately 25 to 60 grams of carbs per hour.

You should get around 50 to 100 grams of carbs when finishing the race. The best option would be to consume them in liquid form. That way, they'll get into your system quickly.

Fat Recommendation

While our glycogen stores run out fairly quickly, our body fat stores can provide more than 70 thousand calories. Although fat is abundant, its metabolism is much slower than carbohydrate metabolism. This explains why we can't sustain a sprint for too long—the metabolism of energy from fat is too slow to maintain such speed and high intensity.

Endurance athletes are more efficient in energy metabolism from fat compared to the average person, meaning they will spend less glycogen for the same intensity.

According to recent studies, endurance athletes should continue to eat higher fat diets while training before they shift to higher carb diets before competitions. These studies have demonstrated that the higher fat oxidation capacity induced by a high-fat meal lasts throughout the duration of carb loading.

Like strength athletes, endurance athletes should get most of their fats from monounsaturated and polyunsaturated fats.

Besides the performance benefits of eating good fats, we must ensure enough fat for our hormones to function properly.



Hydration

Lack of hydration during a long run can have a seriously detrimental effect on one's health and performance. This effect is even more magnified when training or competing in a hot and humid climate.

On the contrary, drinking too much water will dilute the sodium in your blood, decreasing performance.

On the day before your competition, you should try to consume 2.5 to 3.5 litres of fluids to guarantee optimum hydration. The same amount applies during your training days.

Since we sweat a lot during exercise, electrolytes are also essential for endurance events. Electrolytes play a role in metabolic processes and are necessary for all cells to operate normally, including muscles. Like dehydration, an electrolyte imbalance has been linked to symptoms like nausea, vomiting, muscle weakness, cramping, and others.



The hyper-hydration protocol is a strategy you might use as part of your pre-competition diet since it will ensure you are loaded with electrolytes. This will support your thermoregulatory and cardiovascular response during the competition.

On the night before and the morning of the competition, consume a sodium-rich beverage with 1 to 1.5 grams of sodium.

If you have a history of kidney problems, trying this probably won't be a good idea.

Supplements

Caffeine

It has been found in some studies that it increases energy levels and lessens fatigue.

3 mg per kilogram of body weight seems effective for endurance, with 6 mg/kg not showing any additional benefits.

Long-term exercise (2+ hours) may benefit from it, but high doses can negatively affect the digestive system. Your best bet is to gradually determine your body's tolerance by starting out slowly.



Electrolytes

With the importance already discussed, I'll give you some great options for electrolyte supplementing.

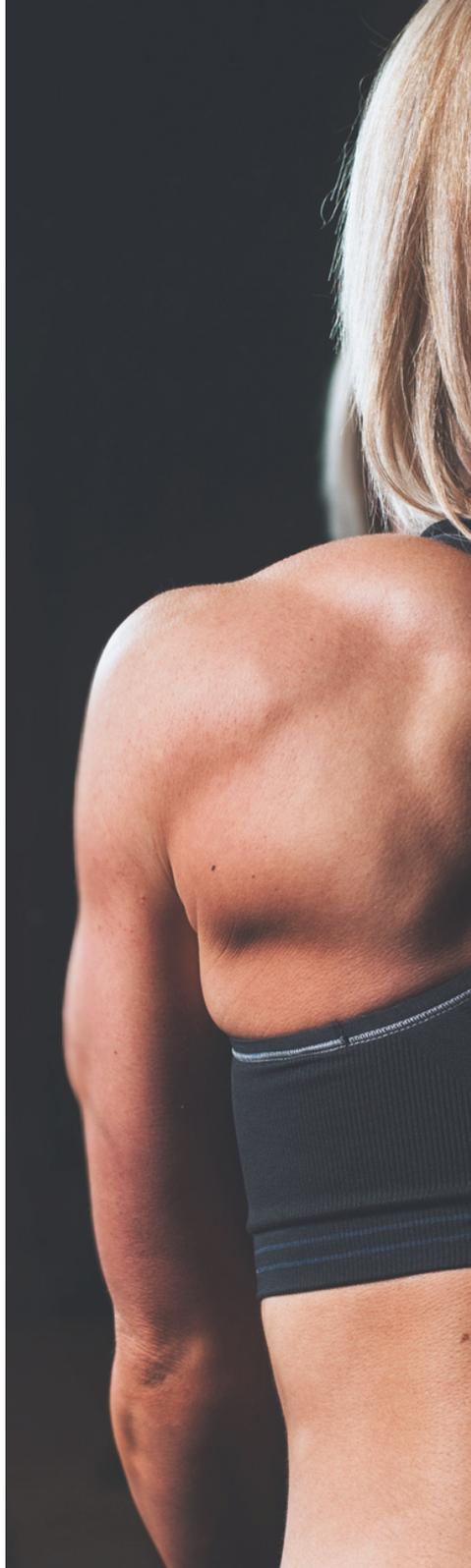
Besides sports drinks and electrolyte tabs, crackers and pretzels are high in sodium, while bananas and citrus fruits are high in potassium.

Nuts like almonds, cashews, peanuts, and spinach are excellent sources of magnesium.

Broccoli, kale, sesame seeds, and almonds are high in calcium.

Chloride can be found in olives and celery.

**STRENGTH
NUTRITION.**



Although strength training differs from endurance training, some nutritional facts remain true.

Proteins are vital in gaining and keeping muscle, carbs are a great fuel source, and fats are crucial in the proper functioning of our body.

According to the NSCA, strength and power athletes should get around 55-60% of their daily caloric needs from carbs, 12-15% from protein, and 25-30% from fats.



Protein Recommendation

Protein is even more important to strength athletes than it is to endurance athletes because one of their goals is to increase muscle size.

Strength athletes should get around 1.5 to 2.0 grams of protein per kilogram of body weight, with the recommendation increasing while in a caloric deficit.

The strength/power athlete can get their protein from various food sources. Several protein supplements are also explicitly targeted toward this athletic population. However, it's important to remember that not all proteins are created equal.



The source, amino acid composition, and processing techniques of proteins vary.

The speed of amino acid absorption varies based on the type of protein. Studies have shown that dietary protein absorption is faster with whey compared to casein protein.

Protein supplements are a great way to increase your total daily protein consumption, with the best time to take them being immediately after a workout. Keep in mind that you won't die if you don't drink a protein shake immediately after the last rep of your workout.



Carbohydrate Recommendation

For strength and power athletes, the ideal carbohydrate intake has sadly not yet been established, but somewhere around 5 to 6 grams per kilogram of body weight should suffice.

Even though we can be sure that a post-workout meal rich in carbs will aid us in recovery from the workout, refilling our glycogen storage.

The carbs you should consume before your training session or competition should be complex carbs, but the post-exercise meal should consist of simple sugar. This way, we are ensuring that sugar travels to the blood faster.

Strength athletes currently in a hypertrophy phase of training tend to affect their glycogen reserves much more compared to low volume phases.



Fat Recommendation

Strength athletes are typically advised to consume about 30% of their daily calories from fat, with 10% or fewer of those calories coming from saturated fats.

The general population is advised to limit their intake of saturated fat, but strength and power athletes should include some saturated fat in their diets. This advice relates to the finding that higher-fat diets appear to maintain circulating testosterone concentrations better than low-fat diets.

Monounsaturated and polyunsaturated fats should make up most of the fat in the diet of strength/power athletes. About 10%-15% of daily calories should be made up of monounsaturated fats, and another 10%-15% of calories should come from polyunsaturated fats.



These healthy fats may aid in disease prevention and even improve athletic performance.

Olive, canola, and peanut oils, as well as nuts and avocados, are all excellent sources of monounsaturated fats. Safflower, sesame, canola, soy oils, nuts, and seeds, are excellent sources of polyunsaturated fats. Flaxseed, walnuts, and cold-water fish like herring, mackerel, salmon, sardines, and tuna are the best sources of omega-3 polyunsaturated fatty acids.

Your post-exercise meal shouldn't be too high in fat so it can get digested faster.



Supplements

Even if your diet is on point, supplementing with the correct supplements may help you increase your performance in the gym or on the field.

Creatine

One of the most well-researched supplements on the planet, creatine is a “must-take” for strength and power athletes.

Without going into the physiological mechanisms that creatine works through, you should know that it positively affects strength, power, muscle mass, recovery, and brain trauma.

You should take around 0.1 gram of creatine per kilogram of body weight, but try not to take more than 5 grams at once because it may cause your stomach to act up.

A loading protocol is frequently used but isn't necessary, as the only benefit it brings is faster creatine saturation in your muscles. If you decide to load with creatine, take 25 grams daily for a week, making sure you space out the doses throughout the day.

You don't need to take breaks from consuming creatine, as long-term consumption is proven to be safe.



Magnesium and Zinc

Zinc and magnesium are both necessary for healthy hormonal function.

If you lack either of these micronutrients, your testosterone levels will suffer.

Although consuming them would be the best through whole foods, over-the-counter supplements will surely help.



Caffeine

One of the best-known drugs, caffeine, is great when it comes to getting you ready for a workout.

Studies have shown that doses of 3 to 6 mg per kilogram of body weight can increase your maximal strength by 3-4%.



Thank you

Lee Webb

www.bodyfirstpt.co.uk

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