
# 3 STEP GUIDE TO FORMULATING A SUCCESSFUL CUSTOMIZED NUTRITION PLAN FOR ATHLETES & FITNESS ENTHUSIASTS

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# STEP 1

## IDENTIFY YOUR BODY'S AVAILABLE ENERGY SYSTEMS

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## Step 1) Identify your body's available energy systems

Energy is an essential requirement for all living things (organisms). All forms of muscle movement like walking, running, lifting, etc., your body needs energy. And for that, your body can only use 1 energy source, which is called Adenosine Tri Phosphate or ATP. ATP is produced from the foods we eat, which is why a healthy, well-balanced diet is so important! It is also the reason why we start our 3-step approach to our nutrition plan by identifying the body's available energy systems.

So, ATP is the only energy currency for your body cells. Unfortunately, your body can store only a minimal amount of ATP within the muscles. And this ATP can only provide energy for 1 to 2 seconds of exercise.

Therefore your body has to continuously produce ATP to generate energy. During physical activity, 3 different processes work together to produce ATP molecules that can be used to release energy for muscles to use in contraction, force production, and ultimately sporting or fitness performance.

These 3 processes, or energy systems, as they are more commonly known act as energy pathways. The intensity and duration of the physical activity we are doing determines which pathway acts as the principal fuel source.
So, as soon as you start exercising, the small amount of ATP stored in our body gets used up and needs to be replenished to continue with the exercise, which is where the body's three different systems become active, ensuring a constant supply of energy.

All three energy systems are always active during exercise, however, the energy pathway you rely on most to produce that energy depends on the activity you are doing, or more specifically, its intensity and duration. Understanding exactly what those energy systems are and applying that knowledge to your nutrition strategy. And training plan will help you to improve your training results and elevate your performance.

**First,** there is Phosphocreatine (PC) which is immediately available and can deliver a lot of energy at once, but only for a limited time – up to 30 SECONDS – due to its small stores. ATP and Phosphocreatine or ATP-PC together are called the Phosphagen system or the IMMEDIATE ENERGY SYSTEM, and this is the dominant energy system during very high-intensity exercise for up to half a minute.

**Secondly,** we have anaerobic glycolysis, the breakdown of muscle glycogen (carbohydrates) WITHOUT the use of oxygen. It has a small delay before kicking in and can deliver a lot of energy too – but at a slower speed than the phosphagen system. It will limit itself after a few minutes due to lactic acid accumulation. The anaerobic system, or SHORT-TERM ENERGY SYSTEM, is the dominant energy system for exercise for up to 2 MINUTES, but it still can contribute for a longer time.

**Third,** there are two pathways together (glucose and fat) that form the aerobic system: the LONG-TERM ENERGY SYSTEM, with a slow start. For exercise longer than 2-3 minutes, the aerobic system is the dominant energy pathway, due to its large capacity.  Glucose, derived from glycogen or from the blood, can be broken down aerobically – with the use of oxygen. This can deliver a lot of energy, at a reasonable speed, for up to 90 MINUTES. Fat is a huge energy store, which can almost endlessly provide energy. But at a lower speed, and with a slow start.

**Summary:**

| ENERGY SYSTEM | COMPLEXITY | RATE OF ATP PRODUCTION | CAPACITY OF ATP PRODUCTION | LAG TIME TO ATP PRODUCTION |
|---|---|---|---|---|
| Phosphagen | Low, one-step process | Very fast | Very limited | Instantaneous |
| Anaerobic | Moderate, complex process | Fast (runs a close second) | Limited | Seconds |
| Aerobic | Very high, many steps and processes | Very slow (distant third) | Unlimited | Minutes |

# STEP 2

## DETERMINE YOUR ATHLETE TYPE

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## Step 2) Determine your athlete type

Different sporting situations have different energy demands. In some sports, energy must be supplied very quickly, whereas in other instances energy does not have to be provided at such a high rate, but must be supplied steadily over a longer period of time. Here are the 5 main athlete types along with the energy systems they are mainly using:

**1. Strength athlete:** A strength athlete is an athlete who uses explosive power. The performance takes place in only one or a few seconds. Performance for these types of athletes depends on their strength and ability to produce force in a short time period.

**2. Sprinter:** A sprinter also has to deliver a lot of power, but in general over a longer time period. So from a few seconds up to 20 seconds. Because exercise duration is longer than for explosive power sports, rapid delivery of energy to the working muscle is another crucial factor. The immediate phosphagen system will supply most of the energy, in particular via a compound called phosphocreatine.

**3. Power-sport athlete:** The power-sport athlete is active in the intense exercise of a few minutes duration. Think of rowing and track cycling, but also combat sports such as judo and wrestling have an exercise duration of 3 to 5 minutes. Typical of these activities is that the amount of work exceeds the energy stored in phosphocreatine. Energy is typically derived from the short-term anaerobic system.

**4. Endurance athlete:** The endurance athlete heavily relies on the long-term aerobic system. In general exercise of at least 10 to 15 minutes, up to multiple hours, is considered endurance exercise. The ability of the cardiovascular and respiratory systems to deliver oxygen and nutrients to the muscle plays an important role in fatigue and performance.

**5. Team sport athlete:** Characteristics of these sports are multiple sprints with limited recovery time combined with the long overall duration of the game. This challenges all energy systems of the body. The long-term aerobic system, combined with the immediate phosphagen system and short-term anaerobic energy system to fuel the sprints. Fatigue is linked to the depletion of energy stores. Most fitness enthusiasts also fall into this category.

# STEP 3

## BUILD YOUR NUTRITION STRATEGY

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## Step 3) Build your nutrition strategy

Now that you have identified your athlete type along with the corresponding energy system(s) that provide the energy, it's time to start formulating your nutrition strategy.

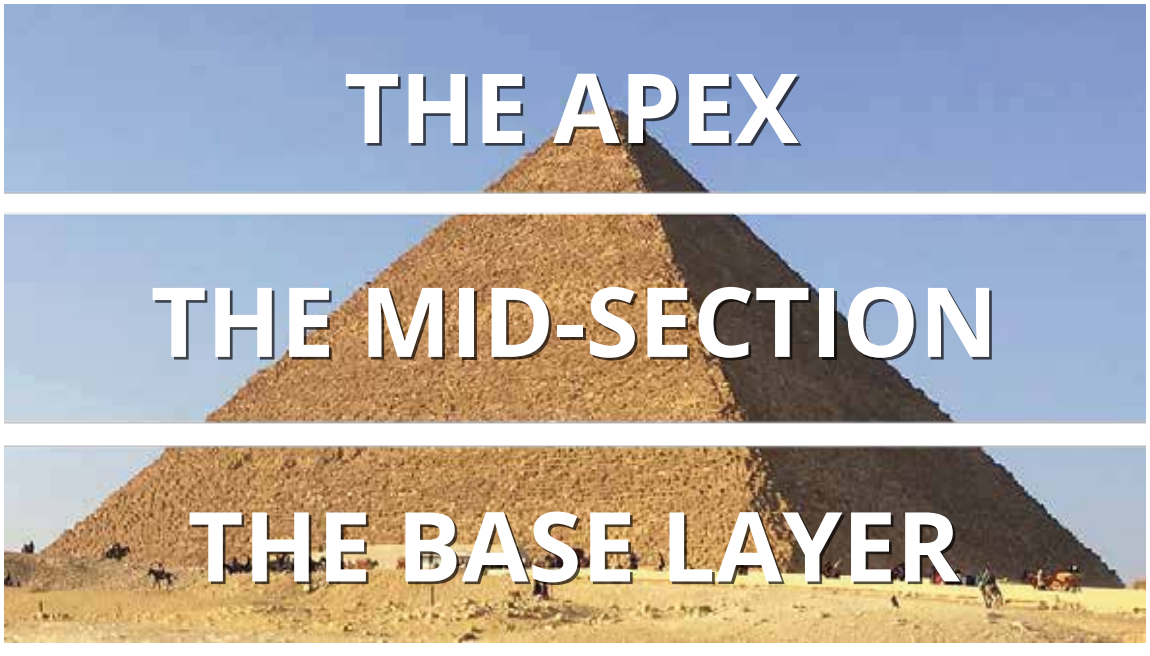
A great tool for that is using the sports nutrition pyramid. A nutrition pyramid is used to illustrate the different categories of foods and products used by athletes to meet their dietary requirements. The 3-layer pyramid is the most straight forward version and the 3 different layers are easy to remember. The idea behind this model is to help athletes to make proper nutritional choices.

The three layers are:

1) The base layer: A balanced diet that supports a healthy and active lifestyle.

2) The mid-section: Sport-specific nutrition to optimize performance and recovery for competition and training.

3) The apex: Supplements – the cherry on top to give you the final competitive advantage.



# THE BASE LAYER

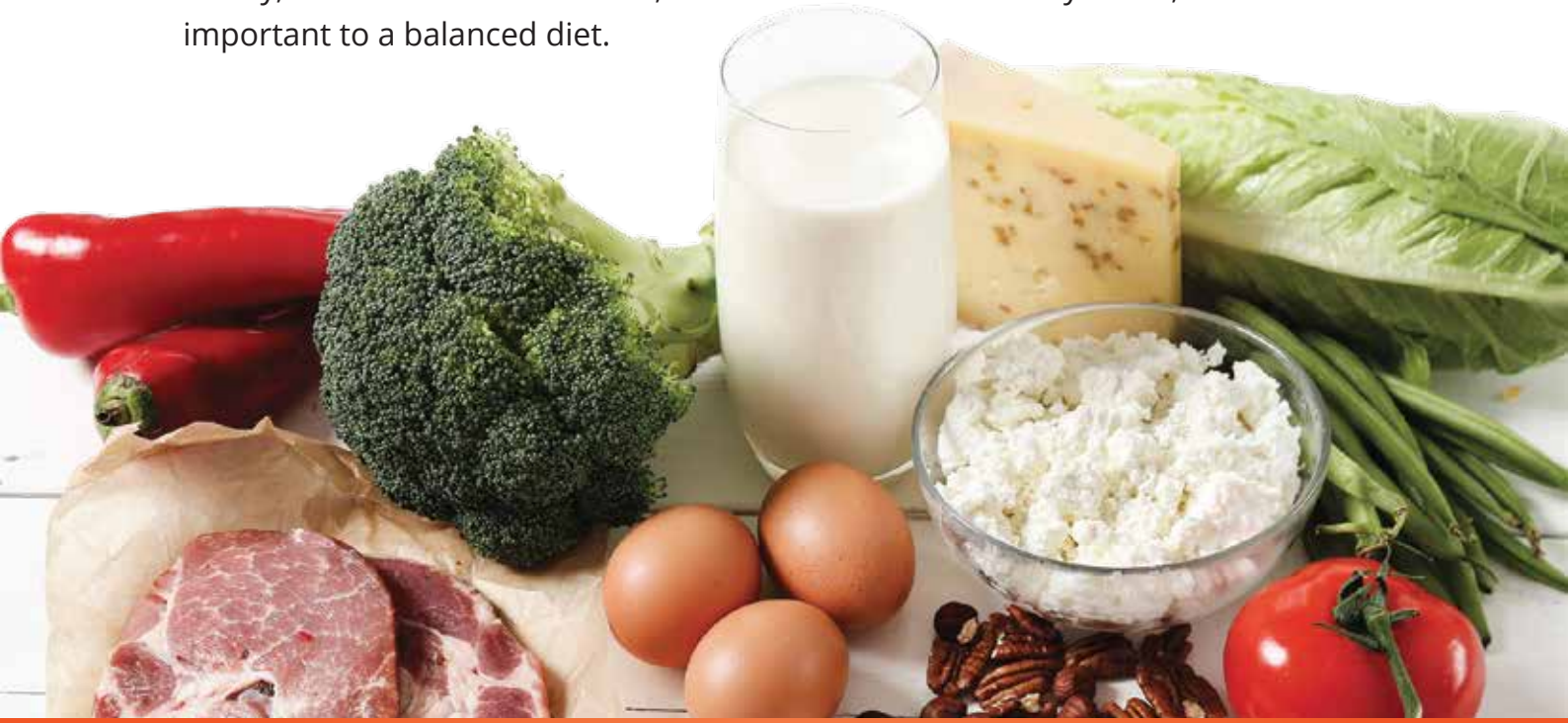
## 1) The base layer

Just like the recommendations for the general population, an athlete should eat a varied diet with fruit and vegetables, and limit the intake of added sugars, saturated fat, and sodium.

A well-balanced diet is and should always be the foundation of an athlete's diet. And energy intake is the cornerstone of such a diet. Being active, and doing exercise requires an optimal energy intake to support all body functions. Weight loss or changes in body composition may be a goal of an athlete's diet, but eventually, energy intake should balance energy needs.

A balanced diet also contains adequate macronutrients, like carbohydrates and proteins to allow daily exercise and sufficient fluid intake to stay hydrated. Also, an adequate intake of micronutrients is important. For some of the micronutrients, like for example iron or calcium, the need can be slightly higher for specific athletic or fitness populations.

However, because energy needs and intake are higher in athletes, a well-balanced diet will automatically increase the intake of micronutrients. Finally, other bioactive nutrients, like carotenoids and dietary fibers, are also important to a balanced diet.



# THE MID-SECTION

## 2) The mid-section

In the next step, consider sport-specific nutritional strategies, which include the timing of nutrient intake to optimize performance and recovery.
The second part of the pyramid consists of sport-specific nutrition to optimize performance and recovery for competition and key training sessions.
Think of specific macronutrient and fluid strategies on top of your balanced diet to meet training and competition goals. Timing is an important aspect of sport-specific nutrition.

For example, the ingestion of high-quality protein is most effective immediately after your workout. And ingesting carbohydrates during exercise will benefit endurance exercise performance.

This sport-specific nutrition can be consumed in the form of normal whole food products with the right amount of macronutrients, like bananas, dates or coconut water.

But, for your convenience, sport nutrition products are developed with the optimal composition that meets specific demands, like rehydration drinks, energy bars, energy gels, energy chews, and protein shakes.

# THE APEX

## 3) The apex

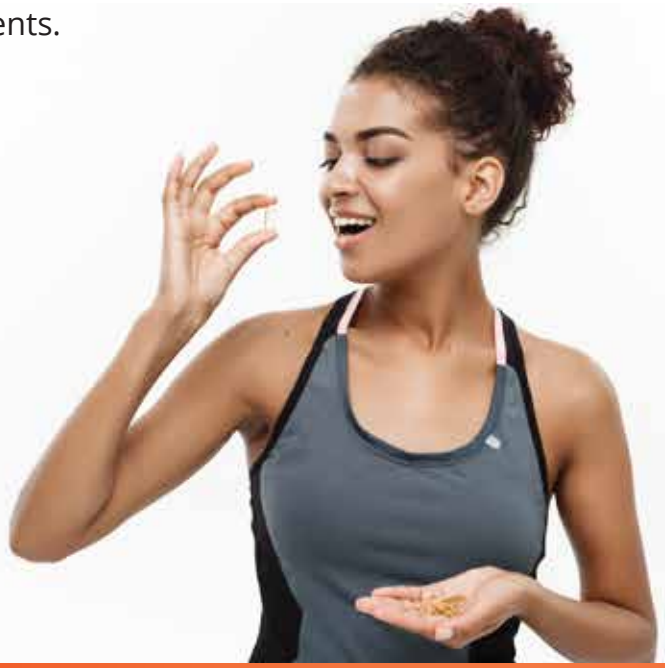
And finally, carefully decide whether adding supplements could work for you. So, when you have optimized the diet and incorporated sport-specific nutritional strategies the tip of the pyramid can be the addition of Supplements.

The definition of a supplement is: “something that completes or enhances something else when added to it.” So a supplement is something that should be added to your diet, not replacing it.

In practice, unfortunately, it is incredibly common that athletes pay more time and attention to supplements than to a balanced diet due to their own beliefs or as advocated by self-claimed experts. In such a way, athletes want to buy their way into an increased performance!

Some supplements, however, can give a minor – but still important - performance benefit. And in the sports world, marginal benefits are often the distinction between winning and losing a competition or race.

When deciding about supplements a general principle to go by is: ‘when it sounds too good to be true, it generally is too good to be true. Therefore, it’s important that you learn to think critically when it comes down to performance-enhancing supplements.



## General guidelines on sports nutrition and performance

A solid piece of evidence-based information on nutrition and athletic performance is the so-called position stand of the American College of Sports Medicine (ACSM).

Every couple of years, all the relevant nutrition research is systematically reviewed to “provide guidelines for the appropriate type, amount and timing of intake of food, fluids, and dietary supplements to promote optimal health and sports performance across different scenarios of training and competitive sport."

Of course, these general recommendations can and should be adjusted to the individual athlete. Considering important issues, such as the athlete’s health, nutrient needs, performance goals, physique characteristics, practical challenges, and of course food or diet preferences. Sports dieticians and nutritional experts are trained to help to achieve this.

If you are interested to read the entire position stand, just visit the ACSM website where you can download the paper for free.

# HOW THE SCHOOL OF SPORTS NUTRITION CAN HELP?

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## How the school of sports nutrition can help?

If you are anything like the thousands of athletes and fitness enthusiasts we've already helped (chances are that you are), there is a lot of low-lying fruits within reach!

We are offering a complete sports nutrition course we wherein explain all the ins-and-outs of sports nutrition. In the course you will learn:

- How to compose a nutrition plan that ensures a healthy lifestyle and optimum performance.
- How to fuel your body before, during, and after exercise and competition.
- About the optimum amount of protein you should consume for muscle adaptation and perhaps even more important when to eat those proteins.
- About the one critical reason why energy drinks will NOT help you on race day.
- How to defeat the supplement FAKE NEWS machine, powered by supplement producers.

So,
if you don't want to continue wasting much of your exercise efforts...;
if you don't want to train harder instead of smarter...;
If don't want to keep getting sub-optimal results out of your tough gym sessions....

sign up now and receive more than 7 hours of engaging digital sports nutrition learning so you will be able to adapt and fine-tune your diet and see your exercise performance improve without ever-increasing training time.

And of course, after finishing the course you will receive a certificate of completion!

Just visit our website at www.schoolofsportsnutrition.com and enroll in our course: SPORTS NUTRITION FOR ATHLETES AND FITNESS ENTHUSIASTS and develop your knowledge from zero to hero.

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