

# Nutrition Simplified

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As coaches of triathletes and other endurance athletes worldwide, we are flooded with questions on nutrition. The funny thing is, behind all the five-syllable biochemical names of nutrients, the keys to good nutrition are really very simple. Our goal in this article is to help you learn these simple fundamentals.

Each time you watch the evening news or read your local newspaper, you are informed of some new nutrition “discovery”. In reality, what we need to know about nutrition, to optimize our health, we already know. The “new discoveries” are mostly interesting bits of science, but knowledge of these bits is not needed to optimize your health. In reality, the keys to good nutrition lie in our evolutionary history and in nature.

Don’t fall into the trap of following the latest trends in nutrition attempting to gain a boost in performance. The truth is that the principles of solid nutrition have not changed in thousands of years. It is these principles that should guide you and not the conflicting 30-second soundbites you hear on the evening news.

Ok, to get right too it, lets look at what foods to eat, why to eat these foods, answers to common questions, and practical suggestions for how to gradually implement changes to your daily nutrition routine that will improve your health and performance.

## What Foods to Eat

A few very straightforward guidelines will help you determine what are the best foods to eat:

- *Any foods that would naturally occur in nature and that can be eaten by humans with minimal processing are good food for you to eat.* These foods that naturally occur fall into one of two categories: plants and animals. Think of it this way: If you were not a modern-day human with a car and a grocery store that provided hundreds of processed-food choices, what would you eat? You would eat plants and you would eat animals. More specifically, you would eat fruits vegetables, nuts, and seeds and the lean meat from animals like fish, red meat (beef, venison, buffalo, etc.), poultry, and eggs. Nature does not make mistakes. If you eat what is found in nature, you can rest assured of two things. First, you will be consuming everything that you need and second, you will not be consuming anything that you do not need.

- *The less it goes through before it goes through you, the better the food choice.* This means that just choosing naturally occurring foods is not enough. It means that you should also eat foods in as close to their whole state as possible. When a whole, natural food undergoes processing of any kind, its chemical structure is changed, thereby altering its nutritional value. Consider an apple. You could go to an apple tree, pick an apple and eat it. In this case, you consume the apple in its most whole state thus ensuring that you receive all the nutritional benefits of the apple. Then consider apple pie purchased at your local grocery store. This is what happened to the apples. First, their skin was removed. Then, they were chopped up and mixed together with many other ingredients for the pie including sugars and hydrogenated oils. Lastly, the mixture of apples and other ingredients were exposed to 350 degrees of heat for an hour. This processing alters the normal chemical structures of the apples in the pie thus dramatically reducing their nutritive power.

### **Why Eat These Foods**

As stated, whole, unprocessed food contains all the nutrients your body needs and does not contain any substances that could harm your body. But let's take a closer look at the properties of whole, unprocessed food:

- *Micronutrients:* Micronutrients are vitamins and minerals. These vitamins and minerals are essential enzymes and co-enzymes in the metabolic processes that occur within the body. Whole, unprocessed foods are the most nutrient-dense foods. That means that for each unit of energy you consume, you get the greatest amount of nutrients in the form of vitamins and minerals. Processed foods and refined grain products, on the other hand, are nutrient-sparse. They provide ample energy, but low amounts of vitamins and minerals. Consider the following example. Since the advent of agriculture, humans have used refined grains as an increasingly large component of their diet, replacing fruits and vegetables in the process. In 1997, an analysis of 4,500 research studies was performed (1) to examine the effects of certain foods as preventative cancer agents for 18 types of cancer. Vegetables were found to have a convincing preventative effect on 5 cancers, a probable preventative effect for 4 cancers, and a possible preventative effect for 7 cancers. For fruits, the analysis revealed 4 convincing, 4 probable, and 4 possible. Yet for grains, there were zero convincing or probable effects found and one possible effect (for cancer of the esophagus) (1). So although grains do contain micronutrients, fruits and vegetables appear to contain greater quantities of the specific nutrients that we are designed to eat and therefore exert a much greater effect on preventing disease and maximizing health. You give yourself the best chance of attaining adequate amounts of all required micronutrients by eating a variety of fruits and vegetables.
- *Fiber:* People who eat fiber rich diets have lower blood cholesterol levels, a reduced risk of several cancers especially cancer of the colon (2), and

they better regulate blood sugar levels (3). Whole, unprocessed plant foods like apples, pears, carrots, peas, almonds, and leafy greens are the best sources of fiber. Truly whole grains like wheat berries, quinoa, barley, millet, and other unrefined grains can also provide fiber. It is believed, however, that fiber from pre-agricultural foods is a better source of fiber because of their decreased association with phytic acid. Phytic acid, found primarily in grains, interferes with mineral (i.e. iron, zinc) absorption in the body (4).

- *Essential fatty acids:* Fat is not just OK to eat. Fat is not just good for you. Fat is essential! That is why dieticians term the acids derived from fats “essential fatty acids”. The richest source of essential fatty acids are naturally occurring plant foods like cashews, sunflower seeds, avocados, and olives as well as animal foods like the lean meat from wild-caught or naturally raised animals (especially cold-water fish). Not only does eating whole, unprocessed foods provide ample quantities of essential fatty acids, but it also promotes the critical balance of two essential fats in the body, the Omega-3 fatty acids and the Omega-6 fatty acids. The Omega-3 to Omega-6 ratio should be in the range of 1:1 to 1:4 for optimal health. The standard American diet of processed foods and refined grains often balloons this ratio to as high as 1:25 in many individuals. This is because our diets are typically too high in Omega-6 fatty acids which come primarily from vegetable oils and too low in Omega-3 fatty acids which come from fish, meat (5), and many nuts and seeds. A skewed Omega-3 to Omega-6 ratio leads to the development of a myriad of health problems including cardiovascular disease (6,7,8,9). To promote the healthy balance of fatty acids in the body, make sure to eat modest amounts of lean meat from wild-caught or naturally raised animals as well as plenty of fresh fruits, vegetables, nuts, and seeds (10).
- *Quality protein:* Protein is a major component in the structure of each cell in your body. Nature supplies the most complete protein in the shape of all forms of animal flesh. If the animals and fish are well-raised (no growth hormone, no antibiotics, ample room to roam, natural diet, and low stress) or better yet, caught in the wild, their meat is high in quality protein, low in saturated fat, and also provides essential fatty acids in the optimal balance. Including all forms of lean meat ensures that you consume quality protein.
- *Low-glycemic-index foods and meals:* The glycemic index is a measure of a carbohydrate-rich food’s ability to raise blood sugar levels. High-glycemic carbohydrates raise blood sugar rapidly and tend to leave people hungry again just a short time later. High-glycemic carbohydrates include refined foods like fruit juice, sweets, and refined flour products like bagels and pasta. Regular consumption of high-glycemic carbohydrates tends to produce blood sugar fluctuations, energy fluctuations, and mood swings. Carbohydrates that are lower in glycemic index release their energy more slowly and produce a greater feeling of satiety. These are whole foods like vegetables and fruits. To promote the utilization of fat as fuel (a

critical concept to triathletes and all endurance athletes), your daily diet must favor low glycemic carbohydrates and meals. The great thing is that nature takes the guesswork out of the glycemic index. There are very few high-glycemic foods in nature, and when eaten in combination and in a large variety, natural foods provide a very low-glycemic diet.

## Common questions

At this point, there may very well be several questions on your mind. Here are some common ones that we hear and their answers:

- *Shouldn't grains make up the majority of my diet?* We have been taught this for many years. As a result, you can still walk into any endurance athlete's kitchen and you will still find far too many relying on refined grains such as pasta, bagels, and cereal grains to support their training. But common sense and a little science should help show you that there is a better way. Anthropological research shows us that humans have only been eating grains of any kind since the advent of agriculture, which was about 10,000 years ago. This may sound like a long period of time, but considered in the total course of mankind, these years can be represented by eight minutes of a 24-hour day. This means that man has simply not had enough time to genetically adapt and evolve to a grain-based diet. There is no single nutrient that can only be found in grains. All of the nutrients found in grains can be found in more robust quantities in fruits, vegetables, nuts, seeds, and the lean meat from animals. Plus they can be eaten without processing, thus preserving their inherent vital nutrients. Truly whole grains (bulgur, quinoa, barley, etc.) that have not been refined can be a good part of your diet, but do not have to be the majority of your diet. Refined grain products (breads, crackers, muffins, pastries) have no place in the diet of a health-conscious/performance-minded athlete.
- *Won't I have less energy if I am eating more fat and less carbohydrates?* For some reason, we have been led to believe that carbohydrates are the only source of energy in the body. This is simply not true. Fat is actually a much better energy source for fueling endurance activity if your body is capable of using it. Through proper workouts, we are actually teaching our bodies to utilize fat as fuel. A diet that contains healthy fats has been shown to aid in this process (11). If fat is absent and carbohydrate is the only prevalent source of fuel, your body tends to utilize this easy to access substrate in place of fat. This substrate-utilization shift can lead to decreased fuel economy. Conversely, providing ample fat in your diet, together with an effective training plan will promote the use of fat as a fuel substrate. Creating an efficient fat metabolism is one cornerstone for any successful endurance performance. People sometimes feel that carbohydrates have to be a superior energy source to fats since the net ATP (most simple form of energy) yield from a gram of carbohydrate is higher than that of a gram of fat. However, this outlook fails to look at the

big picture, which clearly shows us that carbohydrates do not last for very long.

- *What about sports bars, gels, and drinks? They seem to defy the logic of eating whole foods?* This is very true. “Sports foods” are not whole foods. In fact they are often extremely refined. That being said, they are the ideal food choice when used correctly. What is correctly? That is when they are used for the purpose in which they are intended. These foods, broadly stated, are intended for use during very vigorous, very long workouts. Their composition is designed to take advantage of the unique hormonal states that our bodies encounter during prolonged, vigorous exercise. A full discussion of the use of sport-nutrition products is beyond the scope of this article. The key is to not fall into the trap of using these foods as replacements for real foods in your daily diet.

### **Practical suggestions**

Here are some practical tips for successfully implementing improvements to your daily nutrition routine:

- *Make slow, gradual changes.* When working to make improvements in your daily diet, it is best to make gradual changes and not try to do it all at once. Say, for example, that you have decided to add more fruits to your diet and you have set a goal of eating five fruits a day. You currently eat one or two. Rather than simply trying to eat five every day from here on out, start by seeing if you can consistently eat three fruits a day. Then gradually work towards your goal of five a day.
- *Think positive, not negative* Think about putting all kinds of great food into your body, and do not think about avoiding all kinds of bad food. Instead of thinking, “I can’t eat this and that,” try to think, “I get to eat this and that.” For example, if you are trying to eat less sugary sweets, instead of harping on missing that chocolate cake, think about the great banana/strawberry/mango smoothie you are going to make.

So when it comes time to eat, just think whole, real unrefined food and you cannot go wrong!

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