



Should Young Athletes Even Be Taking Supplements At All? **Dr. Chad, PhD**

Background/Introduction

This is a topic in which the answer depends greatly on the specific situation. Many health care providers including dietitians and physicians as well as many coaches, parents, nutritionists and fitness professionals who may interact with young athletes may all have a different answer. It is safe to say that a majority of these people would lean towards suggesting that if possible supplement use should be minimized to avoid their use taking the place of otherwise healthy snacks and meals. This perspective is strongly supported as well by the TD1 program and for this reason a “food first” philosophy will be promoted. A few situations commonly arise that can tilt the scale towards using a high-quality nutritional supplement, but even then these situations can be satisfactorily met by a family and athlete that are committed to planning the necessary foods each day. Regardless, the decision to use any form of nutritional supplement is a personal decision and is something that should consider input from the athlete, parents, coaches and a dietitian with knowledge of sports nutrition.

Priority #1 – Improve A Low-Quality Diet

As highlighted above, the quality of an athlete’s diet is an important part of the athlete’s program and is something for many athletes is a work in progress at best. In no situation should a nutritional supplement be used in place of a meal or other healthy foods. The definition of the word supplement (www.dictionary.com) is “something added to complete a thing, supply a deficiency, or reinforce”. By virtue of this definition a nutritional supplement should be looked upon as something you add to the diet to make it more complete, to help correct or prevent a deficiency or to reinforce the diet. From this perspective, establishing a healthy diet or improving a low-quality diet should be the athlete’s first priority. In this regard, a supplement is best employed as part of a healthy diet and a regular strength and conditioning program. What is a good diet or a bad diet? Everyone knows what foods are junk (usually the ones that taste really good, right?).

Characteristics of a Good Diet

A good diet starts by getting enough calories day in and day out to match the amount of calories your body is expending to keep you alive, to allow for normal growth and development and to also power you through your workouts. How many calories are needed is addressed a little more closely below and in other articles provided on the TD1 website. For exercising athletes, adequate amounts of carbohydrates are absolutely necessary! It’s safe to estimate that half to two-thirds of your diet should be sources of carbohydrates. Foods such as potatoes, bread, pasta, bagels, fruits, etc. Carbohydrates are critical for an exercising body because they provide glucose, the preferred source of fuel for your brain and working muscles. Without enough of this fuel when it’s needed and these parts of your body can’t perform as good as they normally could. Another key nutrient is protein. Protein, particularly for athletes who desire to gain muscle mass, is extremely popular. A number of studies indicate that athletes who exercise a great deal have increased protein needs and this topic will be discussed in more detail in other article on the TD1 website. In general, a good guideline is for protein to provide around 20% of your daily calories. Excellent protein sources are anything that comes from an animal: milk, eggs, beef, chicken, turkey, fish, etc. while some nuts, nut butters (peanut butter) and plants do provide good amounts of protein. Lastly there is fat, another nutrient with great importance. Fats are needed by your body and without enough of them the body can struggle to complete some basic functions. Some fats can be good for you while some are

thought to negatively impact your health. Fats have more than two times the number of calories as carbohydrate and protein which means it's easy to eat too many.

Challenges of Increased Dietary Requirements

It's safe to estimate that the typical non-athlete high school male requires somewhere between 2,000 and 3,000 calories each day from their diet. These numbers however grow considerably when calories are added to account for calories burned during exercise, recovery, etc. For example, a safe estimate for a high school athlete could be between 3,500 and 5,000 calories each day (Harris 1919). The wide range of numbers is attempting to account for the many different shapes and sizes high-school aged athletes can be. It's important to realize these numbers are only provided as a guide or a starting point as a number of factors impact how many calories are needed on a daily basis. For example, the amount of calories you need will be drastically different on a day where you don't complete any exercise in comparison to a day when you have a two or three hour practice. A key point is that these amounts of food are significant and unless significant efforts are made in planning healthy snacks and meals, it can be a challenge for some athletes to get all of the calories they need.

This is one instance in which various forms of nutritional supplementation can be employed. Oftentimes, athletes who are engaged in heavy training and are living busy schedules forget to plan ahead, don't know how to do it or because of the amount of training and heat and humid conditions their overall appetite may not be that great. While few people would argue against a turkey sandwich with cheese, tomato and whole wheat bread with a piece of fruit and a large cup of milk or fruit juice as a healthy snack, what is they leave it in fridge or don't have time altogether? The body still needs fuel and that doesn't change whether you brought your snack or not. Research has indicated it is preferable to provide fuel of some kind, so in these instances it can make sense to utilize some forms of nutritional supplements versus not eating anything. In this respect, some forms of nutritional supplements can be considered as a convenient, safe and nutrient dense food that can be an important consideration in the big picture of an exercising athlete.

Nutrient Timing

Another factor to be considered is that of nutrient timing. Scientific research in the last several years has indicated that when foods are consumed may hold importance (Kerksick 2008). For example, an early study using cyclists that exercised to exhaustion found that when nutrients were provided within 30 minutes after exercise the body's ability to recovery lost fuel was improved when those same nutrients were ingested two hours after the same exercise bout (Ivy 2002). A number of studies involving resistance training have shown that consuming a small combination of carbohydrates and proteins in liquid supplemental form before and during exercise may help promote favorable adaptations to the resistance training. Moreover, a number of studies have also reported that consuming nutrients after exercise can favorably impact resistance training adaptations (Esmarck 2001; Cribb 2006).

Considering these findings, utilization of a nutritional supplement that delivers a balanced array of nutrients at opportune times is an important consideration for exercising athletes. This is not to say that an athlete couldn't choose to ingest traditional foods that deliver similar levels of nutrients, but practical factors such as convenience, storage, preparation, and spoiling, etc. make some forms of nutritional supplementation a realistic option.

Summary/Conclusions

The decision to use any form of nutritional supplement is a personal decision and one which should be made with the support of parents and coaches. In situations where daily efforts are made to prepare and delivery required foods, it stands to reason that supplementation is not required. Practical considerations, however, that presents themselves each day create situations in which using a nutritional supplement may offer necessary convenience in addition to providing the valuable nutrients required by the body. Moreover, athletes who lead extremely busy lives and train a great day, particularly if they have large body frames, can require massive amounts of calories that on a daily basis can be a challenge to provide through traditional feeding mechanisms. These instances and the recent literature supporting the concept of nutrient timing add additional considerations when deciding to use a nutritional supplement.

References

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