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High-School Football Athletes: A Proper Nutrition Guide

“Performance is about fuel. Longevity is about recovery”

Proper nutrition is extremely important for football players. This is especially so as football requires short bursts of energy. Therefore, knowing what to eat, and when to eat, is critical for your performance. Athletes are always looking for the edge over their opponents. Nutrition and proper supplementation is the edge. It does not only impact strength, speed and stamina, it impacts recovery as well. As athletes, you are responsible for taking control. You must provide your body with proper and efficient fueling to optimize your performance.

Athletes are unable to reach their full potential when they go to practice without eating breakfast or lunch, or skimps on fluid intake during hot summer practices, the athlete puts themselves at risk for injuries, and also ultimately affect the performance of the whole team. As athletes, you must know facts about diet and dietary habits in order to perform at your optimum level. You cannot run a high-performance racecar on kerosene. **Excess weight in the form of fat reduces speed and endurance of any athlete.**

Eat Quality Carbs, Lean Protein, Healthy Fats

Due to the stop-and-go nature of the sport, carbohydrates fuel these short bursts of intense energy. Ideally, football players require 50% – 55% of their daily caloric intake to come from carbohydrates, 25% from protein, and 20 - 25% from fat. Carbohydrate foods with lower fat should be emphasized, e.g. whole-grain bagels over doughnuts, mashed potatoes over fries, grilled chicken over fried, frozen yogurt over ice-cream (see attached list of foods). Increasing the amount of carbohydrates in your diet will provide you with more available energy during practice and games. Avoiding fried foods decreases the risk of an upset stomach, which hinders performance.

During two-days/pre-season, carbohydrates should be the main fuel source. Players will not recover in time for the next practice unless carbohydrate intakes are adequate. Watch your protein intake. While it's needed in an athlete's diet to build and maintain muscle mass, excess protein consumption will be stored as fat and may dehydrate the body. Good protein sources are turkey, chicken, lean beef, low-fat cheese, egg whites, whey protein.

Pre-Game Meals

The objective of pre-game meals is to fuel the body for competition. The best choice would be to choose lower-fat foods as fats take longer to digest, therefore would sit full and heavy in the stomach. This means that fried foods and processed fatty foods like bacon and sausage are out. Favor leaner proteins that are grilled, baked, or broiled, and carbohydrates (complex carbohydrates that are lower on the G.I. index) like breads, cereal, salads, and fruits. Stay away from creamy sauces as well.

Training Tips for Pre-event:

- High carbohydrate foods the day before the event:
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- Light, high carbohydrate foods 1 – 4 hours before competition:
 - E.g. bagels, bananas, fruit juice
 - Roughly 1 gram of carbohydrates per 2.2 lb body weight is recommended 1 hour before exercise, up to 3 gram of carbohydrates per 2.2 lb body weight/h if you eat 4 hours prior to exercise. (These amounts are appropriate to raise glycogen stores at the onset of exercise, and potentially, enhance performance).
 - Avoid high-fat foods, e.g. potato chips, donuts, and French fries

Tip for Great Pre-practice Snacks: whole wheat bread with natural peanut/almond butter and sugar-free jelly. Add 1 fruit if possible.

Hydration is Key for Performance

Fluids should be replaced during exercise as dehydration decreases exercise performance. Two hours before exercise, consume 400 – 600 ml of fluid (12 – 20 oz.) with your pre-event meal. Then 300 – 450 ml (10 – 15 oz.) within 15 – 20 min. prior the event, followed by 150 – 350 ml (5 – 15 oz.) of fluid during exercise every 15 to 20 min.

Sports drinks should include electrolytes, sodium, and potassium and chloride, which are lost in sweating. They should incorporate a combination of sugars that enables the drink to maximize absorption during exercise. (The combination of glucose and fructose is proven to allow for the best performance production.)

Post-Game/Lift – Meal/Shake

For optimal recovery after a game or lifting, you need to consume a protein-carbohydrate mix (remember to replenish your fluids immediately after game/lifting). The protein mix, whether meal or protein shake should be in a 2:1 ratio of carbs to protein. Carbohydrate amount should be 1 – 1.2 g of carbs plus .5 - .6 g of protein per kg of body weight and ingestion should be within 30 min. after game or lifting session. The timing is critical as this quick timeframe optimizes the absorption of all the nutrients into the body.

Tip: Drink fat-free milk after training. Researchers from Canada found that milk ingested after weight training promoted post-exercise protein synthesis.

Athlete's Eating Schedule for Game Day

Event time	
Morning	Force yourself to get up early enough to eat a high carbohydrate meal and have it be mostly digested before competition time. Be sure to include a good hydration routine as most of us are dehydrated in the morning.
Noon-ish	A good breakfast 3-4 hours before the event, then a light snack about 45 minutes before the event would top off your fuel stores and leave your stomach in a comfortable state.
Afternoon	An adequate breakfast and a good pre-game lunch are the right move to get the day running smoothly and have enough fuel on board. Then have a light snack before the game to top off your glycogen stores.
Evening	Breakfast and lunch as usual. The evening meal timing will depend on timing of the game. If you have 3 hours between the event and dinner, have a good pre-game meal. If you only have an hour or so before the event, make your meal more like a large snack. Then eat a meal right after you finish your activity to fully recover!

Packing It: Eating on the Run

Examples of Breakfast

- Egg sandwich on multigrain/whole wheat – no cheese
- Unbuttered English muffin, bagels, toast with natural peanut/almond butter and preserves, jelly or apple butter
- Low-fat or fat free yogurt with fresh fruit and a bagel
- Low-fat granola bar
- Pita bread stuffed with natural peanut/almond butter, cottage cheese and raisins
- Veggies and low-fat cheese
- Oatmeal with fruits and/or almonds

Examples of Lunch

- Vegetables or chili stuffed potatoes
- Salad bar: stick with low-fat dressings, beans, veggies, beets, carrots, pasta, add crackers, rolls or breads, add a protein (e.g. egg whites, grilled chicken breast, turkey)
- Pack lunches: Sandwiches of wholegrain/multigrain bread, fruit, fig bars, vegetables
- Pasta with meat sauce
- Baked, grilled or broiled meats – nothing fried!
- Fast-food restaurants: grilled chicken sandwiches, grilled hamburgers, roast beef sandwiches, baked potatoes, salad bars (no mayonnaise, “special” sauce, butter, croutons, sour cream, etc...)
- Thick-crust pizzas with veggies – easy on the cheese

Examples of Dinner

- Meats should be baked, broiled, grilled instead of fried
- Pasta with clam or marinara sauce
- Shellfish in tomato sauce or steamed, without butter
- Chicken/turkey breast without skin with brown rice and vegetables
- Stir-fry dishes with lean meats and lots of vegetables in minimal oil
- Grilled or broiled salmon, tuna, mackerel

Examples of Snacks

- Wholegrain crackers
- Graham crackers
- String cheese
- Low-fat yogurt
- Raw nuts
- Whole wheat pretzels
- Dry cereal – watch the caloric content
- Fresh fruits
- Dried fruits or trail mix
- Fruit juices
- Air-popped popcorn with butter
- Protein muffin
- Low-fat or skimmed milk
- Quality protein bar

Dr. Rob's Fab Four Supplements

Branched-Chain Amino Acids

Respect for the effectiveness of branched-chain amino acids (BCAA) has reached new heights due to the growing body of scientific literature on them. BCAA are known to enhance energy, reduce muscle breakdown, increase brain function, reduce body-fat, build-up immune function, blunt muscle soreness and recovery and, of course, help boost muscle growth.

While BCAA are composed of the amino acids leucine, isoleucine and valine, leucine appears to be the star performer. Studies show it is key to turning on the process of muscle protein synthesis, or muscle growth.

In a 2006 study, it was shown that a 1500 mg dose of BCAA reduced cortisol levels by 48%. Reducing cortisol is an effective way to enhance muscle recovery and growth. Try taking BCAA about 30 minutes before, and immediately, after workouts to inhibit cortisol and its catabolic effects and boost testosterone's anabolic effect. Take a dose of 1000 mg before and 2000 mg after a workout of BCAA. BCAA work best with co-ingestion with all the other amino acids.

Whey Protein

Whey is a unique (and impressive) protein in that it has shown to confer both performance-enhancing effects as well as an ability to help improve "health" under selective clinical conditions. Whey is a high quality, complete protein, with all the essential amino acids. It is also the richest known source of naturally occurring branch-chain amino acids (leucine, iso-leucine and valine). Additionally, whey is ranked the highest on the biological value scale (a measurement of protein quality) for protein. It has the ability to act as an anti-oxidant, anti-hypertensive, anti-tumor, anti-viral, anti-bacterial, and chelating agent.

Whey proteins have insulinotropic effects and reduce the postprandial glycemia in healthy subjects. (Allows insulin response to be high, yet has a lower blood glucose level, which afore-mentioned effect is excellent for an after exercise meal). Whey protein has exhibited benefits in areas of exercise performance and enhancement through many different studies. Approximately 30 – 40 grams after a workout is the *whey* to go.

Glutamine

Amino acids are the building blocks of protein. Glutamine is an intriguing amino acid; it is the preferred fuel source for two crucial body functions: the intestines and the immune system. Scientists have classified glutamine as a conditionally essential amino acid. That is, under certain conditions (severe stress), glutamine may be needed in much higher amounts. Data from studies in adults show that plasma levels of glutamine decline during acute stress and illness. Glutamine makes up roughly 60% of the amino acid pool and skeletal muscle.

Therefore, the regulation of intramuscular glutamine has significant effects on skeletal muscle metabolism. The loss of muscle glutamine may be a signal for muscle degradation, so it is essential that intra-muscular glutamine stores are maintained. Prolonged, exhaustive exercise can decrease the plasma level of glutamine, which is an important fuel for some cells of the immune system and may have specific immune-stimulatory effects.

Ingest glutamine dosage at about 3 - 5 g. per day if you're working out hard. Take glutamine with protein before carbohydrates with arginine, ornithine, lysine before sleep or after exercise for added growth hormone secretion.

Vitamin D – Definitely Important!

Vitamin D could be called "hormone D" due to its powerful effects. It regulates more than 2,000 of the 30,000 genes in the human body. Vitamin D is not only helpful in achieving optimum health, it is also essential for optimum athletic performance. It contributes to muscle strength and recovery, controls physical reaction time and aids in balance and coordination. Multiple studies have shown that vitamin D supplementation is associated with promoting lean body mass, muscle and strength. Additionally, studies have shown that vitamin D increases the size of fast-twitch muscles and muscular strength. Professionally speaking, the Chicago Black Hawks became the first modern sports team to supplement with vitamin D.

Dr. Rob's 5 Key Nutritional Take-Away

- 1) Formulate a hydration plan:
 - a. Drink early, and often
 - b. Hydrate before, during and after football
- 2) Fueling around football: fueling is like part of your football equipment:
 - a. Eat 30 – 60 min. before practice
 - b. Eat within 30 min. after practice
 - c. Fueling is the “parenthesis” around football/exercise
- 3) Eat like it is a part of the game-plan:
 - i. Consume 5 to 6 small meals throughout the day, at 3-hour intervals; small nutritious meals throughout the day provides sustained energy and promotes muscle growth
- 4) Composition of your plate – what does a “power plate” look like?
 - a. 1/3 carbohydrates, i.e. brown rice, pasta, sweet potatoes, yams
 - b. 1/3 vegetables/fruits, i.e. the more colorful, the more nutrition value
 - c. 1/3 lean protein, i.e. chicken/turkey (white meat, skinned), lean beef (loin or round), fish
- 5) Be consistent! If you are an athlete, you are an athlete 7 days a week. Therefore, eat like an athlete every day!

Complimentary

15-min. Bio-Impedance Analysis (BIA) and dietary assessment when you call the office to schedule an appointment.

The BIA is a method of assessing your “body composition” – the measurement of body fat in relation to lean body mass. It is an integral part of a health and nutrition assessment.