



Best Practices from Sports Nutritional Experts

Technical/Tactical/and mental training are all crucial to player development, and equally important is nutrition. At the highest level of play the margin of difference between player's abilities is slim, and nutrition is the only difference between victory and defeat. It is important that players understand from an early age the benefit and importance of good nutrition in any sport.

Following is a compilation of nutrition best practices from Ben Mackenzie, Master of Science, as well as some tips on what types of foods (and how much) players should be eating before, during and after matches.

Enjoy! – Gary White, Technical Director

Sound nutrition is crucial to a youth player's success. Leading nutritionists, coaches, and professionals are increasingly recognizing the importance of sports nutrition to any training program. A player's diet will affect their performance. Successfully combining a sensible and healthy diet with training and competitive matches will help the player maximize their abilities to fulfill their potential, and additionally will provide a nutritional foundation to make for a healthier lifestyle.

Diet is just one of many factors involved in the development of soccer players, but it is the most overlooked throughout all levels of soccer. A successful diet will enable players to train and play effectively as well as aid them with their recovery following strenuous exercise.

PARENT'S ROLE

Parents play a critical role in the player's nutrition. Small, frequent meals will assist the player in achieving a high carbohydrate intake without the discomfort of overeating. This can be achieved through speaking to the player and organizing a routine of meals and snacks to meet their individual preferences, timetable and appetite. Parents should also ensure the player has adequate amounts of carbohydrate solution to top-up muscle glycogen stores during exercise (e.g. Isotonic sports drink).

CARBOHYDRATES

Carbohydrates serve several important functions related to exercise performance:

- Energy source. *Carbohydrate is the only macronutrient that contributes energy under anaerobic conditions (Football specific).*
- Protein Sparer. *Carbohydrate preserves tissue protein ensuring maximal performance from various muscle groups. Metabolic primer. Carbohydrate acts as a primer for fat metabolism allowing footballers to access additional energy stores when required.*
- Fuel for central nervous system. *The brain uses blood glucose, derived from carbohydrates, almost exclusively. Good blood glucose levels should ensure greater awareness, an improved ability to make appropriate decisions, and lengthened periods of concentration.*

PRE-MATCH NUTRITION

Appropriate carbohydrate consumption previous to competition is vital to optimize game performance. If a player does not eat enough carbohydrates previous to the game they will feel the effects near the end of the game when the body relies on food for extra energy. The type of carbohydrate consumed is also important as different carbohydrates release energy at varying rates. The Glycaemic Index below highlights various carbohydrate rich foods with each food being given a value of 0 to 100. The greater the value, the quicker the effect of the food on blood sugar levels.

Prior to competition, a player should aim to consume 1g carbohydrate per Kg body weight. So, for example, a player weighing 165 pounds should aim to consume 75g of low Glycaemic Index carbohydrate foods. This small meal is best taken roughly 1 hour before a game. Any larger meals should be eaten 2-4 hours before a game and again should consist of low Glycaemic Index foods. Not all players will feel comfortable eating an hour prior to kick-off, and not all will want a large meal 2 hours before playing. Therefore it is vital that the player experiments to find the exact quantity of food or drink, and the timing that works best for them.

Food	Portion Size Providing 75g Carbohydrate
Dried Apricots	1 Large Handful (160g)
Sport Nutrition Bar	2 Bars (60g)
Porridge	1 Large Bowl (900g)
Pasta	1 Large Bowl (300g Cooked Weight)
Glucose Drink	400ml
Low Fat Fruit Yogurt	3 Cartons (3 x 150g)

DURING MATCH NUTRITION

Consuming carbohydrate during prolonged exercise can help delay fatigue and enable the player to continue exercising when muscle glycogen stores are depleted.

An intake of between 30-60g carbohydrates per hour is recommended. This figure matches the amount of carbohydrate that can be taken up by the muscles from your bloodstream during exercise. Consuming more carbohydrate will not improve your energy output nor reduce fatigue.

It takes at least 30 minutes for the carbohydrate to be absorbed into the bloodstream. With this in mind, the best strategy would be to begin consuming carbohydrate within the first 30 minutes of starting the game.

Because of the need for the carbohydrate to be quickly digested and absorbed during exercise, moderate to high Glycaemic Index foods would be the ideal choice. Whether you decide to consume liquid or solid carbohydrate makes no difference providing you drink water with solid carbohydrate.

Aim to consume as much water as possible during the game to prevent the onset of dehydration and maintain blood plasma levels.

Food or Drink	Portion size providing 60g carbohydrate
Isotonic Sport Drink (6g/100ml)	1000ml
Glucose Polymer Drink (12g/100ml)	500ml
Energy Bar	2 Bars
Diluted Fruit Juice	1000ml
Raisins	2 Handfuls (80g)

Players must start refueling immediately after the game. Glycogen storage is faster during the first 2 hours post-match than at any other point. During the subsequent 4 hours the rate of glycogen repletion slows but remains at a greater rate than normal. Following this period glycogen manufacture returns to normal, therefore eating carbohydrate during this 6 hour window greatly improves glycogen recovery.

Similar to pre-match nutrition, you should aim to eat roughly 1g carbohydrate per 2.5 pounds of body weight. E.g. A player weighing 165 pounds should aim to consume 75g carbohydrate within the first 2 hours post-match. Following the initial 2 hour period, you should aim to ingest 50g carbohydrate every 2 hours until your next main meal.

Since you want to get glucose into your bloodstream and muscles fast, it makes sense to choose foods with a moderate to high Glycaemic Index value.

Foods	Portion Size Providing 75g Carbohydrate
Isotonic Sport Drink (6g/100ml)	1000ml
Glucose Polymer Drink (12g/100ml)	625ml
Raisins	4 Heaped Tablespoons (120g)
Corn Flakes and Skimmed Milk	1 Large Bowl (65g) With 300ml Milk
Bread or Toast	4-5 Large Slices
Bagel and Jam	1 Bagel (90g) With 2 Heaped Teaspoons of Jam
English Muffin	2 (2 x 68g)
Energy Bar	2 Bars (2 x 55g)
Fruit Bars	2-4 Bars (30g each)



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