



Foundations of Coaching 101

Nutrition for Athletes

The Basic Nutrients

The basic nutrients are carbohydrates, proteins, fats, vitamins, minerals and water.

- Carbohydrates are the primary fuel source for aerobic athletes and, contrary to popular opinion, are not fattening. If taken in reasonable amounts, carbohydrates are used for energy, leaving little to be converted to body fat.
- Protein builds and repairs muscle, produces hormones, supports the immune system, and replaces red blood cells. Protein is not a main source of energy except in cases of malnutrition or starvation. Most athletes do not need extra protein. They get adequate protein from a normal diet. Again, contrary to popular opinion, protein does not build muscle bulk; only exercise does that.
- Fats are essential for hormone production, storage of vitamins, and delivery of essential fatty acids. The body needs fat, but the average American diet contains more than enough. High fat foods should be traded for low fat substitutes so that fat intake is limited to 25% of total calories.
- The necessary vitamins and minerals are also readily available in the foods consumed in a healthy diet. Vitamins, minerals, and water make the body more efficient at accessing carbohydrates, fats, and proteins when they are needed during exercise and recovery.

In terms of total calories, swimmers should aim for a diet of:

- 60% carbohydrate
- 15% protein
- 25% fat

Of course, this will vary, but carbohydrate intake shouldn't drop below 50%, protein should not go above 25%, and fat should not go above 30%.

There are no magic foods and no magic food groups! Extra vitamins, minerals, and supplements are not necessary in a healthy diet. The easy guidelines for your athletes are as follows:

- Eat colorful foods. The more naturally colorful, the more vitamins, minerals, antioxidants, and carbohydrates are available for recovery and general health.
- Eat early and often. The first two hours post-workout are the most critical.



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- Drink early and often. Hydration must be continuous.

Recovery Nutrition

After exercise, the dietary goal is to provide adequate energy and carbohydrates to replace muscle glycogen and ensure rapid recovery.

- Start the replenishment process immediately. The “window of opportunity” to maximize glycogen replacement lasts only about 2 hours.
- It is also advisable to pulse the system, i.e., eat something substantial every hour rather than waiting for a large meal or eating only every 3 to 4 hours. The replenishment should be adjusted according to the intensity of the practice. A less intense workout requires less replenishment.
- Finally, something is better than nothing, so emphasize consuming some carbohydrate fuel immediately after workout rather than waiting until the next full meal.

Nutrition for Competition

Once again, teach athletes that there is no magic food and that they must focus on long-term nutritional choices. When it comes to swim meets, they need to prepare nutritionally for the entire competition. There is no way to fuel for a particular race. It is important to maintain constant energy, blood sugar levels, and hydration by snacking and replenishing throughout the competition. Shown below are some recommendations for “competition cuisine.”

One Hour or Less to Go	2 to 3 Hours to Go	3 to 4 Hours to Go
Fruit and vegetable juice such as orange, tomato, or V-8	Fresh fruit and vegetable juices	Fresh fruit, and fruit and vegetable juices
AND/OR	AND	AND
Fresh fruit such as apples, watermelon, peaches, grapes, or oranges	Breads, bagels, English muffins with limited amounts of butter, margarine, cream cheese, or peanut butter	Breads, bagels, baked potatoes, cereal with low-fat or skim milk, low-fat yogurt, sandwiches with a small amount of peanut butter or lean meats and cheese
AND/OR	AND/OR	AND/OR
1 ½ cups of a sport drink	4 cups of a sport drink	7 ½ cups of a sport drink

Educating the Parents



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Because the parents are normally responsible for the food that swimmers eat, it is crucial that parents have good nutritional information. Nutrition is the number-one topic that parents ask about because it is something that they can directly influence. Begin right away to educate both the swimmers and their parents about fueling for performance. The main question parents ask is, “What should my child eat before practice? At meets?” Here is a very practical answer to that question along with practical suggestions.

- The best pre-practice or pre-meet meal should contain primarily carbohydrates. Carbohydrate-rich foods like pasta, breads, and cereal are easily digested and absorbed. (Rule of thumb: 0.5 to 2.0 grams of carbohydrate per pound of body weight one to four hours prior to exercise.)
- Remind parents and swimmers that it is crucial for swimmers to eat before morning practice. Some swimmers will resist a meal before morning practice or the early morning session of a swim meet. Remind swimmers of the analogy of the empty gas tank. If they have not eaten since the previous evening, the gas tank is empty and there is no fuel to produce energy for competition or training.

Meals That Provide 100 Grams of Carbohydrates

Some of the items below are well tolerated before morning practice or competition.

- 1 bagel with peanut butter and 2/3 cup of raisins
- 1 cup of low-fat yogurt, 1 banana, and 1 cup of orange juice
- 1 turkey sandwich with 1 cup of applesauce
- 2 cups of spaghetti with meat sauce and 1 piece of garlic bread
- 8 oz. of skim milk, 1 apple, 1 orange, 2 slices of bread, and 3 pancakes
- 1 serving of sports drink and 1 bagel