# Sport-Specific Nutrition: Cross Country

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Cross country runners are diverse athletes that require focused training with a high strength-to-weight ratio. Cross country athletes often train for hours at a time to improve $VO_{2max}$ and aerobic capacity while also partaking in resistance and speed training. A high level of nutrition specialization is needed for successful cross country runners to balance nutrient timing and meet one's energy demands while maintaining a strong and lean physique.

**Nutrition Recommendations for Cross Country Runners**

**Consume energy dense *nutritious* meals.**
This is best achieved by including a wide variety of nutrient-dense carbohydrate sources into meals and snacks. Carbohydrate rich foods include: pasta, rice, low sugar cereals, bagels, breads, flat bread, sports bars, fruit, starchy vegetables (potatoes, sweet potatoes, corn, beets, peas) and low-fat dairy products.

Due to the high energy demands and high strength-to-weight ratio of cross country runners, there is little room for high-fat, high-sugar foods. Clean eating is critical to improving your personal-best times. Fried foods, soda, candy and packaged cakes and cookies should be limited, if not avoided.

**•Focus carbohydrate-rich foods around trainings.**
Snacks and carbohydrate intake should be timed appropriately before and after trainings to maximize performance and promote faster recovery without added calories. A list of snack ideas before training can be found on the ICYF "On the Go Snacks for Athletes" guide.

The amount of food you consume is based on your body weight and how close you are to the start of your training. As trainings lasting longer than 60 minutes get closer, meal/snack size should decrease whereas larger meals should be consumed if eating 3-4 hours beforehand. As a general guide for every hour before training, consume 1 gram of carbohydrate per kilogram of bodyweight up to four hours in advance.

| Hours before training | Grams of carbohydrate to consume for a 140-pound athlete |
|---|---|
| 3- 4 | 200grams - pasta with meat sauce, bread, salad, milk |
| 2- 3 | 150grams - ham sandwich on bagel, banana, 100% juice |
| 1 | 64grams - sports drink, fig bar or cereal bar |

• **Trust your gut before competition.** Due to the nature of your competitions, it may not be critical to have a snack before race time. Think about when you last ate. If it's been more than 3-4 hours, a small snack would more than likely benefit you. Pick a snack that is high in carbohydrates and low in fiber and fat. This blend of macronutrients will facilitate gastric emptying and fuel utilization. A list of snacks can be found on the ICYF "On the Go Snacks for Athletes" guide. Please note, these are snacks to consume before training - your pre-event snack may be smaller.

• **Stay hydrated**
Hydration before, during and after exercise should be well planned. Drinking large amounts of water in the minutes before running is not an optimal way to hydrate since hydration for cross country runners is a delicate balance. Dehydration (2-3% loss in body weight or just 2.8 pounds for a 140-pound runner) can slow pace but consuming too much fluid can also give you a sense of feeling weighted down and "heavy." Runners should sip small amounts of fluid during training and regularly throughout the day.
Hydration Tips

- Start hydrating about 4 hours before practice or competitions so that you are able to excrete any excess fluid as urine before you compete.
- If you are training for 60+ minutes, sip 4-6 ounces fluid every 15 minutes.
-On days where you are training intensely, for every pound lost, replace with 24 ounces of fluid.
-Carry a water bottle with you during the day to help achieve your fluid goals. One sip of water is equal to about 1 ounce.

**• Maintain optimal iron status**

Cross country runners, mainly female, can be at risk for low iron status. Low iron levels are detrimental to performance and can cause decreased aerobic capacity, diminished exercise endurance, decreased $VO_{2max}$ and decreased production of ATP in skeletal muscle (2). Iron-rich foods should be consumed daily to decrease risk. Iron-rich foods include: beans, iron-fortified breakfast cereals (Cream of Wheat®, Raisin Bran, Frosted mini wheat, Cheerios,) iron-fortified breads, iron-rich pasta (Barilla Plus®,) red meat, raisins, dried apricots and pretzels. An iron supplement in the form of ferrous sulfate may be necessary. **Low iron levels can STILL affect performance without having iron-deficiency anemia.** Reduced iron levels can be assessed by a physician checking your serum ferritin level. (3)

Tips for Increasing Iron through Food

Eat foods high in Vitamin C with iron-rich foods to promote better iron absorption. Examples include
- Mixing iron fortified breakfast cereal with dried fruit in a baggie for a grab and go breakfast. Have with 100% orange juice.
-Eat pretzels with fresh strawberries for a snack.
-Use iron fortified bread to make a sandwich. Add green or red pepper slices and tomato.

References
2. Dunford, Marie. *Sports Nutrition. A Practical Manual for Professionals. 4th Edition.* American Dietetic Association, 2006.
3. Position of the American Dietetic Association, Dietitians of Canada, and the American College of Sports Medicine: Nutrition and Athletic Performance. *Journal of the American Dietetic Association, March 2009, Volume 109 Number 3 p. 509-522.*