What can I eat/drink to prepare for and during a long bike race?  [1]

Dear Alice,

I am about to do a 12-hour bike race through the night. It will consist of roughly an hour cycling followed by an hour's break alternately. Could you recommend what sort of food I should be eating before and during the race? Thank You.

Answer

Dear Reader,

An endurance event, such as a bike race or marathon, requires an athlete to expend energy over hours of physical activity. An eating strategy to maximize energy for the competition will include meal modification days before the event, as well as incorporation of fluids and snacks into the racing protocol. Formulas for eating regimens and fluid replacement will need to be modified through trial and error, however, to reflect personal preferences and performance needs.

"Carbohydrate loading" is part of race preparation for many endurance athletes. Following such a regimen boosts muscle glycogen, the fuel that powers your muscles, by 20 to 40 percent above normal levels. Here are the general guidelines for carbohydrate loading, complete with sample menus:

Carbohydrate Loading

Begin to taper-down workouts seven days before the competition. During the first three days of tapering, your daily food intake should meet your weight maintenance caloric needs with 50 percent of calories coming from carbohydrates. To figure out your individual caloric needs, try using the American Cancer Society's Calorie Counter [2] website.

2000 Calorie Menu (50 percent of calories from carbohydrate)

- Breakfast: 1 cup (c) of orange juice, 1 whole wheat English muffin with 2 tablespoons (T) of “light” cream cheese
- Lunch: Turkey sandwich [3 ounces of lean turkey, 1 ounce of cheese, 2 slices of whole wheat bread, lettuce, tomato, and two teaspoons (t) of mayo], 1 medium apple, and 2 T of peanut butter
- **Dinner:** Pasta [1-½ c of pasta, ¾ c of marinara sauce, 5 small meatballs (lean), 2 T of parmesan cheese], 1 roll, 1 c of salad with 1 T of low-fat dressing, and ½ c of low-fat pudding topped with ½ c of strawberries
- **Snack:** 2 T of raisins

Carbohydrates should provide 70 percent of total calories for the second three days of workout tapering.

**2000 Calorie Menu (70 percent of calories from carbohydrate)**

- **Breakfast:** 1 c of orange juice, 1 large whole wheat bagel with 2 T of "light" cream cheese
- **Lunch:** Turkey sandwich (2 ounces of lean turkey, 2 slices of whole wheat bread, lettuce, tomato, and 2 t of mayo), 1 ounce of pretzels, and 1 medium apple
- **Dinner:** Pasta [1-½ c of pasta, ¾ c of marinara sauce, 3 small meatballs (lean), 2 T of parmesan cheese], 1 roll, 1 c of salad with 1 T of regular dressing, and ½ c of low-fat pudding topped with ½ c of strawberries
- **Snack:** 1/3 c of raisins

Finally, take a rest from exercise the day before the competition.

A final high-carbohydrate, low-fat meal should be consumed three to five hours before the race to ensure the food will be out of the stomach before the race begins. An example of this type of meal is a whole-wheat bagel with low-fat yogurt and a banana. Entering a race properly hydrated and then maintaining fluid and electrolyte levels throughout the competition are not only important for achieving optimal performance, but also for avoiding dangerous states of under- or over-hydration. Fluids lost through sweating must be replaced in order for the body to properly regulate its internal temperature, but consumption of too much water can cause a dangerous imbalance in body chemistry. Unfortunately, taking in the proper amount of fluid during exercise isn't always easy, because thirst is rarely an accurate measure of fluid needs. Try using the USA Track & Field organization's tool for determining an individual hydration plan. The following hydration guide should be modified according to the results of your self-test.

Approximately 15 to 20 minutes before the race begins, drink three to four fluid ounces of an isotonic beverage that will provide a moderate carbohydrate boost for energy.

**Isotonic Drink**

- 1 liter water
- 50 grams sugar OR 250 ml fruit juice concentrate
- 1 pinch salt

If you plan to use sugar in your drink, you'll want to bring water to a boil and then add the designated amounts of sugar and salt. Stir until the solids are dissolved, let the liquid cool, and refrigerate. If you plan to use fruit concentrate, you can simply mix the ingredients together in a bottle and store in the fridge until used.

When the race starts, follow your previously determined "Program for Optimal Hydration." The fluids taken in can deliver needed energy to the muscles as glycogen stores begin to fall. Studies have shown that consuming 0.7 grams of carbohydrate/kilogram of body weight/hour of exercise will increase endurance. This amounts to approximately 38 grams of carbohydrate
for an individual who weighs 120 pounds, or 60 grams for someone who weighs 190 pounds. These carbohydrate needs can be met by consuming a high carbohydrate energy bar, 1 large bagel, ½ cup of dried fruit, approximately 24-fluid ounces of sports drink, or the isotonic beverage described above.

Trying out these new meal and fluid regimens and adjusting as necessary during training will help you create an individualized strategy to reach your maximum riding potential. Good luck!

Alice!
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