SPECTRUM HEALTH
Jason Lazor, DO
Spectrum Health Medical Group Orthopedics

A Strong Finish Requires Proper Nutrition

As race day nears, we get a lot of questions on diet. Based on recommendations from the American College of Sports Medicine, I would like to outline some basic nutritional starting points and recommendations on both type and timing of your nutrient intake.

Adequate nutrition is important for maintaining or increasing your athletic performance, but your intake must not sacrifice overall health. Failure to meet your body's metabolic and energy expenditure needs can mean poor performance, prolonged recovery, loss of muscle mass, decreased bone density and increased risk of illness.

The base of every diet should follow the recommended daily allowances (RDAs) in the Dietary Guidelines for Americans and then be adjusted for individual needs. Generally speaking, dietary requirements can be broken into carbohydrates, fat, protein, vitamins and minerals.

Here are some key points about the current recommendations on calorie intake during endurance training:

- **Carbohydrates** – Carbohydrate recommendations range from 6-10 grams per kilogram of body weight. Carbohydrates are important in maintaining blood glucose and are the preferred fuel source for interval and endurance exercise. Approximately 50-60 percent of energy used during endurance activity should come from carbohydrates. Sources of carbohydrates include breads, cereals, grains, legumes, milk, beans, vegetables and fruits.
- **Protein** – Protein recommendations range from 1.2-1.7 grams per kilogram of body weight. Proteins are made up of amino acids and can be used as an energy source. When adequate calories from other nutrient sources are consumed, such as fats and carbohydrates, the amino acids are spared and instead are used in muscle building and recovery. Sources of protein include fish, poultry, seafood, milk, nuts and seeds.
- **Fats** – Fat intake should account for 20-35 percent of total calories consumed Saturated, monounsaturated and polyunsaturated fats are useful energy sources during exercise when carbohydrate reserves are depleted, but they also are important for neurologic function and storage of fat soluble vitamins (A, D, E and K). Sources of fats include avocados, dark chocolate, nuts, eggs, milk and cheese.
- **Vitamins and Minerals** – Vitamins and minerals, also called micronutrients, play an important role in maintaining overall health of the body. Supplements aren't needed if you consume adequate nutrients from a varied diet and if you meet your increased caloric demands. Supplements should be taken, however, if prescribed by a physician for certain medical conditions or if certain food groups are excluded or eliminated for preference, dietary or weight loss reasons.

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Because of the increased energy expenditure associated with training, many endurance runners exceed the upper limits of recommended calorie intake. The intake of necessary calories should occur before, during and after training/competition. And the type of calories consumed should be nutrient dense based on individual preferences and training practices. Runners can figure out what works best by adding new foods and at different times during training sessions. The routine established during practice should then be followed during competition.

- **Pre-exercise** – The pre-exercise meal or snack should contain approximately 200-300 grams of carbohydrate and be low in fat or fiber. The amount should be consumed 2-4 hours prior to the activity and should be enough to feel satiated, but not full, during exercise. Some runners may rely on full meals without any gastrointestinal distress, while others may primarily rely on liquid sources.
- **During exercise** – If you're exercising for more than an hour, it's a good idea to consume carbohydrates. Approximately 30-60 grams of carbohydrate per hour is recommended for most people. The source should be glucose/sucrose, which can be in the form of sports beverages or gels and soft, low-fiber foods. It is better to consume these calories in 15-20 minute intervals, as opposed to consuming them all at once.
- **Recovery** – In addition to meeting the energy needs of the body, the goal of post-training nutrition is to replenish glycogen stores to be used during the next workout and to limit muscle breakdown. Carbohydrates should be consumed within 30 minutes after exercise at a rate of 0.8-1 gram per kilogram of body weight and can be repeated every 2 hours for up to 6 hours after exercise, if needed. The addition of protein and fats after exercise does not seem to show an increase in glycogen stores, but it does provide amino acids for muscle protein repair.

Every runner has his or her own unique requirements depending on body composition, weight, gender, fitness level and dietary preferences, so the recommendations should be considered general guidelines, not hard-and-fast rules. Runners struggling with performance, those who want to restrict energy intake for weight loss, or those who are unable to consume certain food groups may require additional advice from a sports dietetics specialist.