

Second Wind Running Club

Pre- and Post-Exercise Nutrition and Hydration by Kristy Powell

You wouldn't set out for a road trip with your car's gas tank on empty, nor would you be able to make it to your next destination without refilling your tank to replace what you used during your previous excursion. Think about this as applied to your running workouts: Many new runners may be exercising in an attempt to lose weight. However, you won't get very far if you skip meals prior to working out, nor will you recover optimally for your next workout if you don't replace the fuel you lost during your previous run.

The Basics

Carbohydrates:

The goal for active individuals is to eat 55-65% of total calories from carbohydrate. Carbohydrates are the preferred fuel of the muscles. Aim for a variety of carbohydrates at each meal or snack.

Protein:

Choose lean protein to repair tissue and build muscle. Aim to eat three servings of dairy products daily and at least one meat or high-quality vegetarian protein source (tofu, bean burrito, hummus on pita). The goal for active individuals is to eat 10-15% total calories as protein. An easy calculation for athletes is 0.5 – 0.8 grams protein/pound body weight.

Fat:

Moderation is key here. Fat is a good energy source, carries fat-soluble vitamins (A, D, E, and K) and adds flavor and texture to foods. Generally, if you are eating a balanced diet with a variety of different foods, your fat intake will be about right. Don't worry about counting fat grams, but do choose healthy low-fat choices most of the time. The goal for active individuals is to eat 20-30% of total calories as fat.

Pre-Exercise Nutrition

- Eating prior to exercise ensures adequate energy for working muscles.
- The aim of this meal is to top off glycogen stores in the muscles and the liver for fuel usage during exercise.
 - Glycogen: Your body's storage form of carbohydrate. The preferred energy source for running. Low or depleted glycogen stores limit exercise intensity and decrease time to exhaustion.
- Fluid levels should be raised to ensure adequate hydration.
- The gastrointestinal system should feel comfortable during exercise, i.e. not full and not hungry.

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Timing and composition of meals

- Large meals: 3-4 hours before exercise. Small meals/snacks: 1-2 hours before exercise. This allows time for digestion. Goal is to feel comfortable, not overly full or hungry.
- High-carbohydrate, low-fat foods are the best fuel source.
 - Best sources of high carbohydrate foods: breads, cereals, pasta, rice, potatoes, fruit and fruit juices.
- Carbohydrate is broken down into glucose, the body's preferred fuel.
- Protein and fat slow digestion, slowing nutrient absorption and leaving you feeling full and uncomfortable.
- Excessive fiber intake prior to exercise may find you running... for a bathroom!
- Practice! Try a variety of foods and timing to find what works best for you.

Examples of good pre-exercise meals

- Breakfast cereal with low-fat milk
- Toast with jam or honey
- Pancakes and syrup
- Granola bars, sports bars, or cereal bars
- Bananas
- Rice
- Pasta and marinara sauce
- Baked potato with low-fat toppings

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Post-Exercise Nutrition

- The body is most receptive to fluid, carbohydrate and other recovery nutrients immediately after activity.
- Eating following strenuous exercise keeps you from feeling chronically fatigued and prepares your body for exercise and activity the next day.
- Recovery nutrition may be a challenge. Many people do not feel hungry right after exerting themselves, especially in the extreme heat.
- Goals of post-exercise meals:
 - replace muscle and liver glycogen stores
 - replace fluid and electrolytes lost in sweat
 - repair muscle damage caused by exercise

Strategies for recovery

- Refuel and rehydrate quickly after a workout – the sooner, the better, although your muscles are highly receptive to carbohydrate and energy intake up to 6 hours after exercise.
- Carbohydrate snacks that provide protein may help repair tissue.
- Juice and sports drinks provide carbohydrate as well as fluid for recovery and they may be useful if appetite is poor.
- An intake of 50-100 grams (200 – 400 calories) of carbohydrate is adequate to start the refueling process.
- Fat is burned at high rates during the post-exercise period regardless of what food you eat. Therefore, during this time, most ingested carbohydrate and protein will be used to replenish depleted muscle energy stores and to enhance recovery rather than being stored as fat.
- Research has shown that a 2:1 to a 4:1 ratio of carbohydrate to protein is optimal for recovery. (i.e. skim milk, chocolate milk, fruit and cottage cheese, smoothies, peanut butter and jelly sandwich).

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Hydration

- Every day we need to replace about 2 liters of fluid to balance general body losses – even before sweat loss during exercise is taken into account.
- You will experience a gradual reduction in performance as degree of dehydration increases.
- Look at your urine!
 - Should be pale yellow to near colorless if you are adequately hydrated.
- Weigh yourself before and after exercise to quantify fluid losses.
- There are many drink choices available, but water is usually the best choice.
 - Cases when you might need more than plain water:
 - Exercising in very hot and/or humid conditions
 - Exercising continuously for more than 45 minutes
 - Sports drinks, such as Gatorade and Powerade, which replace fluids, electrolytes, and carbohydrates are preferable over water in these cases.
 - Caution: When you are losing a great deal of electrolytes through sweat (i.e. long duration, very intense exercise, high heat/humidity) you are at risk for hyponatremia (low blood sodium levels) if you consume only water and no electrolytes.

Fluid intake strategies

- Start hydrating early. Drink 1-2 cups of water when you first get up in the morning.
- Carry a water bottle with you all day long.
- Drink before you get thirsty (thirst is a sign you're already dehydrated).
- Drink 1-2 cups of fluid 30 minutes before exercise.
- Drink ½ to 1 cup of fluid every 15 minutes of exercise.
- Replenish lost fluids (2 ½ cups for every pound lost during exercise).
- Keep drinking even after thirst is quenched.
- Use caution with caffeine. It is a diuretic and gastrointestinal stimulant.