



Eating and exercise: Time it right to maximize your workout

Knowing when and how much to eat and drink before you exercise can make a big difference in how you feel during and after your workout. Here are some tips.

By Mayo Clinic staff

When you eat and what you eat can affect your exercise performance and the way you feel while you're exercising. Coordinate your meals, snacks and what you drink to make the most of your exercise routine.

Time it right: Before, during and after your workout

Eating too much before exercising can cause you to feel sluggish or have an upset stomach, cramping and diarrhea. That's because your muscles and your digestive system are competing with each other for energy resources. On the flip side, not eating before you exercise can be just as bad. Low blood sugar levels that result from not eating can make you feel weak, faint or tired, and your mental abilities may be affected as well, making you slower to react.

To get the most from your workout:

- **Eat a healthy breakfast.** Wake up early enough to eat breakfast. Most of the energy you got from dinner last night is used up by morning. Your blood sugar may be low. If you don't eat, you may feel sluggish or lightheaded while exercising. If you plan to exercise within an hour after breakfast, eat a smaller breakfast or drink something to raise your blood sugar, such as a sports drink.
- **Time your meals based on their size.** Eat large meals at least three to four hours before exercising. You can eat small meals two to three hours before exercising.

Most people can eat snacks right before and during exercise. The key is how you feel. Do what works best for you.

- **Don't skip meals.** Skipping meals may cause low blood sugar, which can make you feel weak and lightheaded. If you're short on time before your workout, and your choice is candy or nothing, eat the candy because it can improve your performance, compared with eating nothing. But keep in mind, all candy is high in sugar and low on nutrients, so a snack of yogurt and a banana would be a better choice. Know that for some people, eating something less than an hour before exercise can cause low blood sugar. Find out what works for you.

- **Eat after your workout.** To help your muscles recover and to replace their glycogen stores, eat a meal that contains both protein and carbohydrates within two hours of your exercise session if possible. Women, in particular, may need protein after resistance training.

What to eat: Getting the right fuel for your best performance

Food provides your body with necessary energy. To make the most of your workouts, focus on these foods.

Carbohydrates: Your body's chief source of fuel

You'll feel better when you exercise if you eat foods high in carbohydrates and low in fat. Your body stores excess carbohydrates as glycogen — primarily in your muscles and liver. Your muscles use stored glycogen when needed for energy.

A diet containing at least 50 percent of calories from carbohydrates allows your body to store glycogen, but if you're a long-distance runner or you exercise for long periods of time, you might want to consume more carbohydrates regularly and consider carbohydrate loading before a big athletic event.

- **Good carbohydrate sources** include cereals, breads, vegetables, pasta, rice and fruit.
- **Foods high in fiber and fructose** right before an intense workout may cause problems. High-fiber foods, such as beans and lentils, bran cereals and fruit, may give you gas or cause cramping. Fructose, a simple sugar found in fruit, can increase the tendency for diarrhea with high-intensity exercise.
- **Consider beverage sources** if you don't like to eat solid foods before exercising. You can drink your carbohydrates in sports beverages or fruit juices. Do what feels best to you.

Protein and fats: Important, but not your body's top fuel choice

Protein isn't your body's food of choice for fueling exercise, but it does play a role in muscle repair and growth. Most people can easily get the protein they need from food sources and don't need additional protein supplements. Good protein sources include:

- Meat
- Dairy products
- Nuts

Fat is an important, although smaller, part of your diet. Fats, as well as carbohydrates, can provide fuel for your muscles during exercise. Try to get most of your fat from unsaturated sources such as:

- Nuts

- Fatty fish
- Vegetable oils

Avoid fatty foods just before exercising, though. Fats remain in your stomach longer, causing you to feel less comfortable.

Water: Drink plenty to avoid dehydration

Your body uses the water in your blood to carry nutrients such as sugar (glucose) to cells and to remove waste products from the cells. The presence of water in your body ensures that you can safely sustain physical activity. As you exercise, your body produces heat. This heat leaves your body as you perspire, taking with it electrolytes — elements, such as potassium, calcium, sodium and chloride. If you don't replace the fluid you lose during exercise, your heart rate increases and your temperature rises, putting you at risk of dehydration as well as compromising your workout.

To stay well hydrated during exercise, the American College of Sports Medicine recommends that you:

- Drink enough fluid to balance your daily fluid losses. You'll likely need more on days when the temperature and humidity are high.
- Drink roughly 2 to 3 cups (0.5 to 0.8 liters) of water before your workout.
- Drink roughly 2 to 3 cups (0.5 to 0.8 liters) of water after your workout for every pound (0.5 kilogram) of weight you lose during the workout.
- Drink about 1 cup (0.25 liters) of water every 15 to 20 minutes during your workout. You may need more the larger your body is or the warmer the weather is.

Water is generally the best way to replace lost fluid, unless you're exercising for more than 60 minutes. In that case, sip a sports drink to help maintain your electrolyte balance and give you a bit more energy from the carbohydrates in it. The sodium in sports drinks also helps you rehydrate more quickly.

Let experience be your guide

When it comes to eating and exercise, everyone is different. So pay attention to how you feel during your workout and your overall performance. Let your experience guide you on which pre- and post-exercise eating habits work best for you.