

# Fuel for Training and Competition

## Timing of Meals

While your day-to-day food habits affect your health and overall sports performance, timing is everything when it comes to fueling during training and competition. Use the guide below to properly fuel before, during and after exercise.

**PEAK  
POINT**

Don't forget carbohydrates and fluids at your pre-event meal.

## The Pre-Competition Meal

Eating before exercise is necessary to prevent hunger before and during the event. This meal helps you stay physically comfortable and mentally alert.

The timing of the last meal before competition will depend on the duration, intensity and type of event. Experiment with the timing of your meals during training, not before competition. The closer your event draws, the less you should eat. A good rule of thumb is to have your last meal one to three hours before exercise. You want to start most events with an empty stomach but you do not want to feel hungry or weak. Food choices should include carbohydrates which supply fuel to working muscles and fluids to hydrate the body.

## Here are some sample pre-competition meals:

### BREAKFAST

Oatmeal with milk and sliced bananas, 1 piece of whole-grain toast with a tablespoon of peanut butter, and orange juice

**OR...**

English muffin with jam and cheese (try fontina or ricotta), orange and milk

### SNACK

Whole-grain crackers and cheese

**OR...**

Fresh berries and a cup of Greek yogurt

### LUNCH

Broiled chicken sandwich with lettuce and tomato, green salad, fig bars and milk

**OR...**

Tofu stir-fry with carrots, peppers, and broccoli over brown rice, peach and chocolate milk

### SNACK

Apple slices with peanut butter

**OR...**

Fruit smoothie made with frozen fruit, milk and yogurt  
- try the Berry Blast Smoothie

### DINNER

Tostada (tortilla, lettuce, tomato, beef, onions, beans, salsa and cheese), orange, milk and frozen yogurt

**OR...**

Salmon with pineapple-mango salsa, green beans, rice and milk

**RULE  
of THUMB**

Have your last meal 1 to 3 hours before exercise.

## Berry Blast Smoothie

Makes 2 servings

- 1 cup frozen raspberries
- 2 (6-ounce) containers fat-free blueberry yogurt
- ½ cup fat-free milk
- 1 Tbsp unsalted, natural almond butter
- 1 Tbsp honey

In a blender, add frozen raspberries, yogurt, milk, almond butter and honey. Cover and puree until smooth. Pour into two tall glasses and serve.

For more recipes, visit [NationalDairyCouncil.org](http://NationalDairyCouncil.org).

# Fuel for Training and Competition

## Eating During Competition

During competition, it's important to not only maintain proper hydration, but if you have the opportunity, fuel your body every 30 to 60 minutes. Endurance activities deplete your muscles' carbohydrate stores. Keep your muscles charged and your energy levels up with carbohydrates during your event. Some examples of foods to try are:

- Fresh fruit
- Dry cereal
- Peanut butter and jelly sandwich
- Crackers
- Sports drinks
- Fruit yogurt

If you are competing in events lasting several hours, solid foods will stave off hunger. Remember to drink plenty of fluid along with food. For many athletes, a combination of solid and liquid, such as banana and sports drink, works well.

Learn which combinations work best for you by experimenting with different drinks and foods during training. Don't wait until competition day to try something new.

## Eating Between Events and Heats

Two-a-day practices or competing in several events or heats over one or more days (tennis or wrestling tournaments, swim or track meets, or several basketball or soccer games) can present nutritional challenges. Some athletes may be short on time or not feel like eating between events; however, maintaining energy stores and staying hydrated are critical to performance.

The amount of time between events or heats determines the amount and type of food you eat. Make sure water and sports drinks are always available. The longer you have between competitions, the more you can eat since there is more time to digest food. Use the following tips to guide your choices:

### **ONE HOUR OR LESS** between events or heats, choose fluids or high-carbohydrate foods:

- Sports drinks
- Fruit
- Whole-grain toast or bagel with water
- Graham crackers with water
- Pudding cup

### **ONE- TO THREE-HOUR BREAKS**, try high-carbohydrate foods with lean protein:

- Bowl of cereal with low-fat milk
- A handful of grapes with fruit-flavored yogurt
- Almond butter and crackers
- String cheese and a banana
- Low-fat chocolate milk



### **THREE OR MORE HOURS**, a meal is the way to go:

- Pancakes topped with yogurt and berries, scrambled eggs and 100% fruit juice
- Turkey and cheese sandwich, baby carrots and low-fat milk
- Vegetable pizza with a mixed green salad
- Peanut butter sandwich on whole-grain bread, apple and low-fat chocolate milk

# Fuel for Training and Competition

## Post-Exercise “Refueling”

Eating for peak performance includes recovery from workouts and competitions. During exercise, your muscles use their primary energy source, carbohydrate. Just like a car needs fuel to run, you need to refuel your muscles after a workout or competition. It takes 24 hours to replace muscle carbohydrate (glycogen) used during exercise. However, by eating within 30 to 60 minutes after exercise, then eating small meals at two and four hours post-exercise you can completely refill muscle energy stores in 12 to 16 hours. Proper refueling also helps reduce soreness and repair muscles so you are ready for your next practice or event.

## Essential Recovery Tools

These “fab four” are essential components to any athlete’s post-exercise nutrition plan. They help accelerate your body’s recovery so you are ready for your next practice or game.

<u>Carbohydrates</u> replenish muscle energy stores	<u>Protein</u> repairs and rebuilds sore and damaged muscles	<u>Fluids</u> rehydrate the body	<u>Sodium</u> maintains your body’s water balance
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## Check out these tips:

- Within 30 to 60 minutes after exercise, choose high-carbohydrate foods such as graham crackers, 100% fruit juice and a bagel, or yogurt and fruit. Include sources of protein such as lean meats, low-fat milk or yogurt, eggs or beans to repair and rebuild muscle.
- If you can’t take solid foods after exercise, try milk, white or flavored – it tastes great and contains all of the “fab four,” in addition to other essential nutrients that support healthy bones and bodies.
- Replacing fluids lost from sweat is a priority. After exercise, drink 20-24 ounces for every pound lost.

## Examples of recovery meals which are high-carbohydrate and protein-rich:

- Cereal with milk, toast with peanut butter, a piece of fruit and a glass of 100% fruit juice
- Cheese and crackers, fruit and milk
- A fruit smoothie made with frozen fruit, milk and yogurt
- Whole-grain tortilla wrap with ham, cheese, tomato and lettuce, with fresh fruit
- A baked potato with cheese, salsa and a dollop of Greek yogurt, and a glass of 100% fruit juice.



### PEAK POINT

After exercise, refuel with the “fab four” – carbohydrate, protein, fluid and sodium. They rock for recovery.

# Fuel for Training and Competition

## How do you fuel for training and competition?

Use the ideas presented in this handout to create your own fueling plan.

My favorite foods and drinks pre-competition are...

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

My favorite foods and drinks during competition or between heats and events are...

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

My favorite foods and drinks to refuel with after exercise are...

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_

## Ask the Sports Dietitian



**Q:** Why is caffeine added to some sports bars, gels and beverages, and how does it affect my performance?

**A:** Studies show that caffeine may enhance performance by improving alertness. However, the American Academy of Pediatrics recommends against the use of caffeine containing products for children and adolescents because in excess amounts, caffeine has been associated with harmful cardiovascular and neurological effects. Instead, it's important to choose nutrient-rich foods and beverages and build balanced meals – let these serve as your fuel for athletic success.



**Q:** Why is milk good after a workout?

**A:** Milk – both white and chocolate – provides key nutrients athletes need after exercise.

Milk's Winning Team:

- Milk is 90% water and a great tasting choice after practices and games. Milk's fluids and electrolytes, including calcium, potassium and magnesium, rehydrate the body and replenish what's lost in sweat.
- Carbohydrates refuel muscles after exercise.
- High quality protein helps with muscle recovery.
- Calcium, vitamin D, and phosphorus build and maintain strong bones.
- Milk's potassium helps ward off muscle cramping.
- B vitamins help convert food to energy.

Emerging research in adult athletes indicates that one serving of milk post-exercise may help reduce muscle damage and improve muscle recovery – which in turn, may help the body perform better during its next workout. Improve your post-exercise regimen by refueling with milk within 30-60 minutes after exercise.



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