

_ Pre-Exercise Nutrition

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Why should I eat before exercise?

1. Top-up muscle (a little) and liver (mostly) glycogen stores.
2. Ensure adequate blood sugar level.
3. Prevent hunger before and during exercise.

What should I eat?

- Carbohydrate-rich foods – breads, grains, cereal, fruits, vegetables
- Familiar foods that are well tolerated and easily digested
- Small amounts of protein (if meal is 2-4 hours before) – 1-2 oz lean meat, 2 tbsp peanut butter, ¾ cup low fat yogurt, 1 cup milk or ½ cup cottage cheese, 1 egg
- Liquid meals (1 hour before or if tendency to have a nervous stomach) such as fruit smoothies, meal replacement drinks
- Avoid high fat foods – cream-based soups and sauces, burgers, fries, chips, chocolate

When should I eat and how much?

The timing and amount of food tolerated varies widely among athletes. Athletes must experiment in training to find a pre-competition meal that works for them. Use these guidelines to start:

Time before exercise	Carbohydrate	Calories	Example for 80kg (175lb) athlete
15 minutes *	~25g	100	1 gel or 1.5 cup sport drink
1 hour prior	1g carb/kg body weight	250-300	80g carb = 1 bagel (30g), 2 t jam (10g), 8oz 1% milk (12g), 1 large banana (30g)
2 hours prior	2g carb/kg	400-600	
3 hours prior	3g carb/kg	700-900	240g carb = 2 cups pasta (80g), 1.5 cups lean meat sauce (20g), 1 cup cooked veg (10g) 2 slices bread and butter (30g), 2 cups cranberry cocktail (75g), 3 fig cookies (25g)
4 hours prior	4g carb/kg	1000-1200	

* only if tried in practice; this is a typical practice for many endurance athletes

Is it okay to eat sugar before I exercise?

Some athletes are concerned that they will experience a drop in blood sugar levels and energy if they eat carbohydrates in the hour prior to exercise. Research shows that although an increase in plasma insulin following carbohydrate ingestion in the hour prior to exercise can result in temporary low blood sugars during subsequent exercise, there is no convincing evidence that this is always associated with impaired exercise performance. With that said, individual practice should be based on individual experience. If this is a concern, avoid eating simple sugars 30-45 minutes before training.

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Timing of Meals with Competition Protocol

There are three key questions athletes need to answer to develop a solid pre-competition nutrition schedule that will fuel optimal performance.

1. **What will I eat?**
2. **When will I eat it?**
3. **Where will I get the food?**

During practice, athletes must test different foods and timing of meals. When the right combination is determined, it should be incorporated into the overall competition schedule. Don't forget to plan where you will get the food.

Ideas for Developing Schedule of Meals for Competition:

Early morning events (e.g. swimming, marathons, road cycling, short distance triathlon)

The night before: Eat a high carbohydrate meal – pasta, grains, bread, vegetables, milk – along with some lean protein such as 3 oz chicken or fish. Drink 2 glasses of fluids before & after the meal, walk or stretch before bed.

The morning of: Eat a light breakfast – fruit yogurt smoothie, low fibre cereal & milk, meal replacement drink (Ensure, Boost, Nutrigy). Drink 2 glasses of fluids 2 hours before event. Allow at least 2 hours to digest solid foods.

Early afternoon events (e.g. football, field hockey, tennis, golf)

The night before: Eat a high carbohydrate snack before bedtime such as toast and jam with 1% chocolate milk.

The morning of: Eat a substantial mid-morning meal of breads, cereal, fruit, yogurt and juice, or have a big breakfast and a light lunch. Drink fluids throughout the morning and stop 2 hours prior to event.

Evening events (e.g. basketball, baseball, soccer, hockey)

The night before: Eat a high carbohydrate meal and get a good sleep.

The day of: Both breakfast and lunch will be completely digested by evening. A carbohydrate-rich meal such as soup, sandwich and juice should be eaten 3 hours prior. Take in fluids all day up to 2 hours before event.

After the event: Eat high carbohydrate foods, avoid alcohol. Drink plenty of fluids.

All day events (e.g. track & field, long distance triathlon, tournaments, rowing, kayaking)

The day before: Eat carbohydrate-rich meals and snacks every 2-3 hours. Drink sports drinks, juice and low fat milk.

The day of: Eat the largest, most tolerated high carbohydrate breakfast such as toast, pancakes or hot cereal. Eat a low fat lunch and snack on high carbohydrate foods such as sports bars, juice, bagels and bananas. Drink a sport drink throughout the day if tolerated.



Take home message:

- ❑ Do not train or compete on an empty stomach. Plan to eat a meal or snack at least 1 hour before exercise.
- ❑ Choose carbohydrate-rich foods that are well tolerated.
- ❑ Develop a pre-event meal ritual to include with competition plan. Experiment during training.
- ❑ Avoid eating high fat foods and excess protein prior to exercise.