Pre-Game Meal: Eating Well for Athletic Success

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Disclosures

NONE
Objectives

1. Define macronutrients and their role in performance
2. Learn which macronutrients to include in pre-game meals
3. Learn ideal timing of pre-game meal
4. Discuss hydration
5. Learn strategies for helping athletes to incorporate pregame nutrition
<table>
<thead>
<tr>
<th>Importance of pro-active nutrition</th>
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<tbody>
<tr>
<td>Better sports performance</td>
</tr>
<tr>
<td>Increased concentration</td>
</tr>
<tr>
<td>Decreased injury</td>
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</tbody>
</table>
Sources of Energy

- Carbohydrates (4 kcal/g)
- Protein (4 kcal/g)
- Fat (9 kcal/g)
- Pre-exercise vs recovery – nutrient timing
Carbs = Fuel

Carbs fuel muscles and brain

Protein of limited benefit prior to exercise

Glycogen Storage
Glycogen Storage

- Training increases the amount of glycogen that can be stored
- To optimize glycogen stores, reduce pre-competition training and allow muscles time to refuel with carbs

Grams glycogen/kg muscle

<table>
<thead>
<tr>
<th>Status</th>
<th>Value</th>
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<tbody>
<tr>
<td>Untrained</td>
<td>13</td>
</tr>
<tr>
<td>Trained</td>
<td>32</td>
</tr>
<tr>
<td>Carbo-loaded</td>
<td>35-40</td>
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</table>

Low Carb Diet = Low Energy
Protein

Protein helps with satiety but also takes more energy to digest

Protein repairs muscles

High protein supplements to be avoided prior to exercise
Complex vs. Simple Carbohydrates

Complex Carbs:
- Contain fiber or protein
- Digested more slowly
- Long lasting energy

Simple Carbs:
- High sugar or refined grain products
- Easy to turn into energy
- Quick energy
What Type of Carbs? It depends.

Complex carbs take longer to digest which can lead to more sustained energy.

Meals hours prior to competition

Simple carbs are easily digested which are good for when quick energy is desired.

Carb loading

Immediately prior to or during exercise
## Hydration

<table>
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<tr>
<th>Timing</th>
<th>Amount</th>
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<tbody>
<tr>
<td>2 hours before</td>
<td>16 – 24 ounces water</td>
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<tr>
<td>15 minutes before</td>
<td>8 – 16 ounces</td>
</tr>
<tr>
<td>Every 15 minutes during</td>
<td>6 – 12 ounces</td>
</tr>
<tr>
<td>Event &lt;1 hour</td>
<td>Water</td>
</tr>
<tr>
<td>Event &gt;1 hour</td>
<td>Water + carbs</td>
</tr>
<tr>
<td></td>
<td>• Sports drink</td>
</tr>
<tr>
<td></td>
<td>• Diluted juice</td>
</tr>
<tr>
<td></td>
<td>• Sports gel, gummy candy + water</td>
</tr>
<tr>
<td></td>
<td>• Fruit, dried fruit + water</td>
</tr>
</tbody>
</table>

Keep in mind individual tolerance, practice hydration plan well in advance of game day!
Caffeine has beneficial effect on endurance exercise, but not short-term, high intensity exercise.

1-5mg/kg has beneficial effects. This is amount of caffeine in 4 oz – 20 oz coffee for 80kg individual

Energy drinks and caffeine supplements can be very dangerous and should be discouraged, especially with adolescents.
<table>
<thead>
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<th>Meal Composition</th>
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| **Carbs** | • Grain/Fruit/Veg  
|  | • 3 – 5g/lb body weight |
| **Protein** | • 0.5 – 0.75g/lb body weight  
|  | • 1 – 1.5g/kg body weight |
| **Fat** | • A little at every meal  
|  | • 25% total calories (50 – 80g/day approx.) |

Pre-Game Meal Timing

- Large meal: 4 - 6 hours prior
- Lighter meal: 2 - 3 hours prior
- Snack: 30 minutes - 1 hour prior

*Timing varies with:*
- Intensity of exercise
- Personal tolerance to food

Morning Event Food Timing

8:00 AM Event
Eat a high carbohydrate dinner and drink extra water the night before, at 6-6:30am eat a 200-400 calorie meal (yogurt, banana) and have more water.

10:00 AM Event
Eat a high carbohydrate dinner, extra water, have a familiar breakfast by 7am to prevent fatigue.
Afternoon/Evening Event Food Timing

**2:00 PM Event**

Eat a high carbohydrate breakfast and a light lunch or combine them into a big brunch eaten by 10am. Be sure to have a high carbohydrate dinner the night before, drink extra water day before and up to noon on the event day.

**8:00 PM Event**

Eat a big high carbohydrate breakfast and lunch, have dinner by 5pm or a lighter meal by 6-7pm, drink extra fluids all day.
All-Day Event Food Timing

Day Before:
Eat a high carbohydrate breakfast, lunch, and dinner the day and drink extra fluids

Day of Event:
Eat a breakfast you can tolerate, snack every 1 ½ to 2 hours on carbohydrates during the day if possible, eat lunch if you can, drink fluids before you feel thirsty.
How Can You Help Athletes with Pro-Active Nutrition?

Athletes, particularly growing athletes, have different nutrient needs than non-athletes

- Talk to athletes AND their families. Make sure everyone is on the same page
- Provide time for athletes to fuel up before practice and competition
- Discuss nutrition frequently. Ask athletes what they are eating.
- Provide pre-game & practice snacks or have guidelines for what is purchased
- Food = Fuel approach. Right food at the right time.
- Better nutrition = Less injury
- Refer to sports dietitian for individualized plan
Thank you!

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Sports nutrition
Team Talks
Individual nutrition consultations