PERFORMANCE NUTRITION

FOR SWIMMERS

Eating is just as much a part of training as working out with weights and swimming. Whether you’re a sprinter or a distance swimmer, you need to fuel adequately to train well, recover quickly and increase performance.

Specific nutrient requirements are based on many factors. What works for one swimmer may not be the best strategy for someone else, but all swimmers can benefit from the following guidelines:

BEFORE Practice and Competition

When preparing to compete at a swimming competition you need to pay careful attention to nutrition.

THE DAY BEFORE

When competition time comes around, you’ll have plenty on your mind. So the day before the event keep exercise to a minimum – if anything at all – and eat meals and snacks high in complex carbohydrates throughout the day to keep glycogen stores topped up.

GET HYDRATED

• Start hydrating 24-48 hours prior to exercise. Ideally you should stay hydrated daily.
• Drink fluid with every meal but avoid drinking fruit juice and drinks with artificial sweeteners such as sorbitol and mannitol since all could cause gas and diarrhea.
• 2–3 hours before exercise: Drink 14–20 fl oz of water or sports drink
• Check urine color: Pale yellow = well hydrated; apple juice color = drink more fluid
PRE-FUEL YOUR BODY AND MUSCLES

• Consume a carbohydrate-rich snack or meal before exercise to top off muscle stores. With pre-competition jitters, liquid meal replacements may be a better choice than whole foods.
  • Include small amounts of protein in your pre-exercise meal(s). Protein helps build and repair muscle tissue. Adequate protein before exercise may help reduce post-exercise muscle soreness.
  • Choose pre-exercise meal(s) that are low in fat and fiber to ensure optimal digestion
  • Focus on carbs; carb-restricted diets are NOT appropriate for athletes
  • Carbohydrates should make up 55 to 60 percent of your diet when you are actively working out and competing. Try to stick to familiar foods. Curries, spicy foods, and beans (unless you are used to eating them) can cause gas and bloating, so avoid eating anything that may cause stomach discomfort the next day. It’s best to stick to foods that you are familiar and compatible with!
  • 2-4 hours is ideal for digestion before exercise. If you have 4 hours consume 1.8g carbs x weight (lb). If you have 2 hours consume 0.9g carbs x weight (lb). To convert to calories multiply grams of carbohydrates by 4
  • If eating 30-60 minutes before exercising, ingest an easy to digest carb-based snack that contains 40-60 grams of carbohydrate. If less than 30 minutes, consume only liquids such as a sports drink.
  • Avoid big meals or over-eating in the evening before a morning practice or meet as this will almost certainly make you feel uncomfortable and lethargic the next day.

<table>
<thead>
<tr>
<th>Pre-Practice/Game Recommendations</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sports drink or water</td>
<td>30-60 minutes prior to exercising</td>
</tr>
<tr>
<td>Sports gel, sports beans or gummies, whole grain fig bar</td>
<td>“ “</td>
</tr>
<tr>
<td>Piece of fruit or toast with jelly</td>
<td>“ “</td>
</tr>
<tr>
<td>Baked regular or sweet potato (plain)</td>
<td>1-2 “</td>
</tr>
<tr>
<td>Bagel</td>
<td>“ “</td>
</tr>
<tr>
<td>2 Whole grain fig bars (Nature’s Bakery) plus 8 oz. chocolate almond, soy, or cashew milk</td>
<td>“ “</td>
</tr>
<tr>
<td>Greek, soy, or almond yogurt</td>
<td>“ “</td>
</tr>
<tr>
<td>Toast with nut butter (peanut, almond, sunflower seed w/ no added sugar or oil)</td>
<td>“ “</td>
</tr>
<tr>
<td>Small smoothie w/granola</td>
<td>“ “</td>
</tr>
<tr>
<td>Oatmeal with frozen fruit + 2 slices toast with jelly</td>
<td>3-4 hours</td>
</tr>
<tr>
<td>Peanut butter &amp; honey on toast + chocolate almond, soy, or cashew milk</td>
<td>“ “</td>
</tr>
<tr>
<td>Whole grain wrap with brown rice, hummus, and diced tomatoes + fruit</td>
<td>“ “</td>
</tr>
<tr>
<td>Fruit and soy milk smoothie + low-fat granola</td>
<td>“ “</td>
</tr>
<tr>
<td>Non-whole wheat pasta with sauce + white bread + veggie salad + low fat yogurt</td>
<td>“ “</td>
</tr>
<tr>
<td>Grilled chicken sandwich + baked potato with sour cream + applesauce</td>
<td>“ “</td>
</tr>
<tr>
<td>Blueberry pancakes + Greek, soy or almond yogurt</td>
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</table>

REMEMBER! Time and to a lesser degree, intensity, are the determining factors on what and how much you eat before a practice or meet. Don’t show up to practice or a meet under fueled or fueled with foods that are going to impair your performance such as foods that are high in fat and/or fiber..... pizza’s covered with cheese and meat, donuts, muffins, fries, hamburgers with cheese and sauces, nachos with cheese, meat, and sour cream; entrees with heavy cream sauces (fettuccine alfredo), ice cream, etc.

These foods will slow your digestion and in many cases cause G.I. issues such as gas and bloating. They also impair the absorption of carbohydrates so that snack or drink eaten during practice or between events won’t be absorbed as easily by the body, potentially leaving you short on fuel.
Stay Hydrated and Fueled!

STAY IN YOUR HYDRATION ZONE

Swimmers need to follow a hydration plan. Being in water during practices reduces your ability to notice fluid losses via sweating and as a consequence you may not realize how much fluid you have lost.

As a general rule:

• Drink 8oz water every 15-20 minutes for the first hour and then switch to a sports drink that contains sodium and 6 to 8 percent carbohydrate content. As a rule of thumb, one gulp equals one ounce.
• Avoid losing more than 2% of your body weight as this could cause fatigue and decrease your performance.
• Aim to drink at least 13–26 fl oz of water or sports drink each hour.

DURING Practice and Competition

THE EFFECT OF BODY WATER LOSS ON PERFORMANCE

<table>
<thead>
<tr>
<th>% of body weight loss</th>
<th>Effect on performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>2%</td>
<td>Impaired performance</td>
</tr>
<tr>
<td>4%</td>
<td>Capacity for muscular work declines</td>
</tr>
<tr>
<td>6%</td>
<td>Heat exhaustion</td>
</tr>
<tr>
<td>8%</td>
<td>Hallucination</td>
</tr>
<tr>
<td>10%</td>
<td>Circulatory collapse and heat strokes</td>
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</table>

MOISTURE CHART

You can monitor your hydration level using the pee chart above. When you are well hydrated, your pee should be the colour of pale straw. This relates to colour 1 or 2 on the chart.
FUEL YOUR BODY AND MUSCLES

Carbohydrates are the number one source of energy for swimmers and stored in the muscle and liver as glycogen. When broken down, oxidized glycogen provides energy to sustain pool and weight room workouts.

• Be sure to get 30–60 grams of carbohydrates per hour (for exercise lasting 1–2 hours) or 45–90 grams of carbohydrates per hour (for exercise >2 hours) to help delay fatigue and improve performance.
• Get your carbohydrates from easy-to-digest sources such as sports drinks, gels, energy chews, sports beans, pretzels, dried fruit, and fresh skinless fruit. Consuming multiple sources of carbohydrates during exercise can improve performance.

Quick to Digest Carbohydrate Based Options | Grams Carbohydrate
---|---
Pretzels | 30-35g
Banana | 25-30g
¼ cup raisins, dried apricots or mangoes | 30g
Fig Bar | 22g
Low protein energy bar | 40-46g
Energy Gel | 25g
Energy Gel Filled Chews (1 pouch) | 45g
Sports Drink (20 fl oz) or fruit juice diluted with water | 42g

AFTER Practice and Competition

Recovery Starts as Soon as You Finish Exercising.....!

• To start your recovery, consume foods/fluids with carbohydrates and protein within 30 minutes after exercise at a carbohydrate to protein ratio of 3-5 to 1.
• Eat carbohydrates at a rate of 0.5-0.7 g/lb within 30 minutes and again every 2 hours for the next 4-6 hours. Consume 15-25 grams of protein within the first hour as well. Whether you are a sprinter, endurance athlete or lifting weights, protein is needed to repair and replace muscle tissue.
• Sports drinks and energy/protein/recovery bars and bites are ok and convenient but whole foods are best for recovery due to the beneficial nutrients they contain.

RECOVERY REFUELING PLAN

<table>
<thead>
<tr>
<th>Time</th>
<th>Grams of Carbohydrates</th>
<th>Grams of Protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 30 Minutes and again in 2 hours</td>
<td>0.5-0.7 grams per lb</td>
<td>15-25 grams</td>
</tr>
</tbody>
</table>
GOOD RECOVERY FOOD CHOICES

- Rolls or bagels
- Peanut-butter-and-jelly sandwiches
- Salted pretzels
- Whole fresh and frozen fruits or blended to make a smoothie
- String cheese and crackers
- Chocolate soy, almond or cashew milk
- Tuna sandwich on whole wheat bread
- Trail mix (nuts, dried fruit)
- Whole grain fig bars

REHYDRATE TO AID IN RECOVERY

- To rehydrate, grab your bottle of sports drink, recovery beverage, or water.
- For every pound lost, gradually drink 16–24 fl oz.
- Rehydration will be more effective when sodium is included in the fluids and foods you consume.
- Continue rehydrating until urine is pale yellow like lemonade, not darker like apple juice

HEALTHY EATING TIPS

Swimmers need carbohydrates to fuel hard working muscles. Pasta, bread, rice, potatoes, fruits and vegetables should be the bulk of a swimmers diet, filling 2/3 of the plate at every meal. Protein foods such as meat, poultry, fish, eggs, dairy foods, nuts, soy products, and beans are essential for good health, but are not the primary source for exercise, and so should occupy only 1/3 of the plate.

- Every morning when you wake up, have a large glass of water
- Maintain your energy stores: Eat 5–6 smaller meals per day
- Consume more carbohydrates (at the higher end of the recommended range) on more intense training and competition days and reduce intake during a taper or during the offseason.
- Limit fast-food intake
- Make meal planning a priority and be prepared — pack recovery foods in your sports bag when you go to practice or meet.

GOOD PROTEIN CHOICES

- Chicken or turkey w/out skin
- Fish
- Soy, almond or cashew based milks and yogurts
- Tofu, tempeh and other minimally processed soy foods
- Nut butters (peanut, almond, sunflower)
- Beans
- Egg whites

FOODS NOT RECOMMENDED

Some foods slow digestion and cause the formation of gas due to high fat and fiber which sit in the stomach, leading to G.I. distress and sluggishness. They also slow the absorption of carbohydrates…the primary source of fuel. Drinks with a high sugar content or containing
artificial sweeteners can also lead to stomach upset, gas, and bloating, so stay clear of these beverages for optimal performance.

Pre-exercise

- **High-fat foods** (high fat meats, heavy sauces/creams, fried foods, buttery foods, desserts)
- **High-fiber foods** (cruciferous vegetables, whole grains extremely high in fiber)
- **Carbonated, caffeinated or sugary beverages** or those with artificial sweeteners that contain sugar alcohols

During Exercise

- **High-fiber foods** (cruciferous vegetables i.e. broccoli, Brussels sprouts; whole grains extremely high in fiber)
- **High protein foods** (meats, dairy, high-protein energy bars)
- **High-fat foods** (high fat meats, heavy sauces/creams, fried foods, buttery foods, desserts, large quantities of nut butters, nuts, seeds)
- Fluids containing more than 8% carbohydrate (*juice, soda, sweet tea*, etc.)

Post-Exercise

- **High-fiber foods** (cruciferous vegetables, whole grains extremely high in fiber)
- **High-fat foods** (high fat meats, heavy sauces/creams, fried foods, buttery foods, desserts, large quantities of nut butters, nuts, seeds)
- Fluids containing more than 8% carbohydrate (*juice, soda, sweet tea*, etc.)

**TIPS FOR EATING OUT**

- Ask for *whole wheat* bread for sandwiches
- *Avoid soda* or other sweetened drinks and *opt for water*
- Order *steamed, grilled, or broiled* dishes instead of fried
- *Skip* the toppings such as *sausage, bacon and cheese* on burgers and entrees
- If ordering pasta *skip* those with *high fat cream or cheese* and *opt* for those that are *tomato based* and ask the waiter to *go light or leave out oil.*
- Look for *“healthier” food choices* at restaurants such as black bean burritos, salads (go easy on the dressing), wraps with veggies, fruit, oatmeal, veggie burgers, and steamed Asian entrees with sauces on the side.
- Ask for *substitutions* or changes to the way your food is prepared if at a sit down restaurant. Examples include fruit in place of fries or a desert, and toppings, dressings, and/or dipping sauces on the side (some examples are listed above).
- If eating on the road, go to a *grocery store* if you can’t find a suitable restaurant. Many have a salad bar, individual containers of fresh fruit, or snack containers with hummus and pretzels. Many are also able to make sandwiches and sides.

**COMMON NUTRITION MISTAKES**

- Not eating breakfast
- Not drinking enough fluids
- Not eating at regular intervals
- Eating too much protein and not enough carbohydrates