Nutrition for Optimal Sports Performance
A Comprehensive Guide

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PowerBar
POWER TO PUSH™
Nutrition for Optimal Sports Performance

Overview

Segments:

- **Sports Nutrition Introduction**
  - The Athlete's Grocery List — Tips for Healthy Eating
  - The 3 Principles of Sports Nutrition
  - Your Sports Nutrition Game Plan: Hydration to Recovery
  - The Latest Products and Tools from PowerBar®
Sports Nutrition Introduction

**Sports nutrition** is the practical science of hydrating and fueling before, during, and after exercise.

**Executed properly**, sports nutrition can help promote optimal training and performance.

**Done incorrectly** or ignored, it can derail training and hamper performance.
Sports Nutrition Introduction

Benefits of sports nutrition
- Enables you to train longer and harder
- Delays the onset of fatigue
- Enhances performance
- Promotes optimal recovery and adaptation to your workouts
Benefits of sports nutrition

- Improves body composition and strength
- Enhances concentration
- Helps maintain healthy immune function
- Reduces the potential for injury
- Reduces the risk of heat cramps and stomach aches
Nutrition for Optimal Sports Performance

Overview

Segments:

✓ Sports Nutrition Introduction

➢ The Athlete's Grocery List — Tips for Healthy Eating

▪ The 3 Principles of Sports Nutrition

▪ Your Sports Nutrition Game Plan: Hydration to Recovery

▪ The Latest Products and Tools from PowerBar®
Tips for Healthy Eating

- Sports nutrition focuses on what you need to be fueled and hydrated during exercise, and to promote rapid recovery after exercise.

- But what are you eating the rest of the time, when you’re not exercising?

- Cutting-edge sports nutrition is founded on healthy eating.
Tips for Healthy Eating

Aim for a well-balanced diet:

- **Carbohydrates** from a variety of whole grains, vegetables, fruit, and beans
- **Protein** from fish, poultry, lean meats, beans, low-fat or nonfat dairy foods, and eggs or egg whites
- **Fats** from healthy sources, such as vegetable oils, nuts, seeds, and avocados
Tips for Healthy Eating

Carbohydrates

- Healthy sources:
  Whole grain cereals, breads, and pasta; fruits; vegetables; and beans.

- Nutritional benefits:
  Major source of energy, vitamins, minerals, and fiber.

- Health benefits:
  Regularity; healthier blood cholesterol levels; and lower risk of heart disease, diabetes, and cancer.

- Performance benefit:
  Carbs are your major muscle fuel source for high-intensity exercise.
Tips for Healthy Eating

Protein

- **Healthy sources:**
  - Fish, poultry, lean meats, low-fat and nonfat dairy foods, seeds, nuts, beans, and eggs.

- **Nutritional benefits:**
  - Provides amino acids, the building blocks for making proteins.

- **Health benefits:**
  - Proteins make up muscle and play roles in digestion, metabolism, and immune function.

- **Performance benefits:**
  - Protein helps in the building and repair of muscle tissue, and works with carbs to boost the rate of recovery after exercise.
Tips for Healthy Eating

Fats

- **Healthy sources**
  Vegetable oils such as canola oil and olive oil, nuts, seeds, and fish.

- **Nutritional benefits**
  Major source of energy; vitamins A, D, E, K; omega-3 fatty acids; and other essential fats.

- **Health benefits**
  Healthier blood cholesterol levels and lower risk of heart disease.

- **Performance benefits**
  Fats are the major muscle fuel sources for low-intensity exercise.

- **Limit certain fats**
  - *Limit your intake of saturated fats and cholesterol* by choosing lean meats and low-fat or nonfat dairy foods and egg whites.
  - *Keep trans fats intake as low as possible* by reading labels and limiting your intake of fried fast foods and commercially prepared baked goods.
Tips for Healthy Eating
Made Simple

At meals:

- Fill ¾ of your plate with a variety of carbohydrate-based foods such as fruit, cereals, pasta, bread, potatoes, and other vegetables.

- Fill the other ¼ of your plate with lean protein foods, such as fish, poultry, lean meats, low-fat or nonfat dairy products, beans, and small amounts of nuts and seeds, which are good sources of healthy fats.
Healthy Eating for Athletes: Vitamins and Minerals

- **Vitamins and minerals are essential to the diet.**
  You can’t make them so you have to get them from foods or dietary supplements.

- **Essential micronutrients have many important functions, including:**
  Supporting growth, repairing tissues, carrying oxygen to muscles and other tissues, and supporting the metabolism of energy, carbs, protein, and fat.

- **All the essential vitamins and minerals are important to athletic performance and good health. Some key examples are:**
  - **B vitamins** (thiamin, riboflavin, and pyridoxine) – for energy and nutrient metabolism
  - **Vitamin C** – for healthy immune function
  - **Calcium and vitamin D** – for strong and healthy bones
  - **Iron** – for optimum oxygen delivery to tissues and the prevention of anemia

- **For extra insurance, consider taking a basic daily multivitamin/mineral supplement.**
Tips for Healthy Eating

In Summary

The focus of healthy eating:
To help ensure that you remain healthy over the long term

The focus of sports nutrition:
To help keep you hydrated, to fuel your exercise, and to promote rapid recovery after exercise

Athletes need both!
Nutrition for Optimal Sports Performance

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The 3 Principles of Sports Nutrition

The 3 most important principles of sports nutrition are as follows:

- Stay hydrated.
- Provide fuel for your muscles.
- Promote optimal recovery after exercise.

Apply these principles correctly and you can consistently maximize the gains from your training and compete at your best.
During exercise, you lose fluid and electrolytes as you sweat:

- The key electrolyte is sodium.
- If you don’t replace both fluid and sodium during exercise, you can become dehydrated.

The single largest contributor to fatigue during exercise is dehydration caused by fluid and sodium losses:

- Inadequate fluid and sodium make your heart work harder and make exercise much more difficult.
- Dehydration also impairs concentration and the ability to make tactical decisions.

Complicating matters is that thirst alone is not a good indicator of your hydration needs during exercise.
Losing over 2% of your body weight due to fluid loss during exercise means you are dehydrated and your performance has already been hampered:

- A 2% loss is just 3 lbs for a 150-lb athlete.
- It is common to lose this much fluid, or more, during a workout or competition.

Consuming too much fluid during exercise leads to overhydration or hyponatremia, which also impairs performance and can have serious health consequences.

Stay within your hydration zone during exercise:

- That means avoid gaining weight during exercise due to overconsuming fluid.
- And don’t lose any more than 2% of your body weight due to fluid loss.

Fortunately, dehydration and overhydration can be avoided or minimized by sticking to a disciplined hydration plan.
The 3 Principles of Sports Nutrition

Hydration

To avoid the performance-impairing effects of dehydration:

- Start training sessions and competitions fully hydrated.
- Rehydrate as needed during exercise.
- Fully replace fluid and sodium losses after exercise.
The 3 Principles of Sports Nutrition

Fueling

- Carbohydrates are the primary muscle fuel for most types of exercise.
- 60–90 minutes of endurance training or a few hours in the weight room can seriously deplete carbohydrate muscle fuel stores.
- Starting exercise with full carbohydrate stores can delay the onset of fatigue and help you train or compete more effectively.
- Workouts and performance during competitions suffer if your diet is too low in carbs.
The 3 Principles of Sports Nutrition
Fueling

There are 2 forms of carbohydrate in your body:
- Glucose, which circulates in the bloodstream
- Glycogen, which is bundles of glucose stored in the liver and muscles

When you’re fully loaded with carbs, you have:
- About 40 calories of glucose in the bloodstream
- About 1,900 calories stored as glycogen in the muscles, plus liver glycogen
"Hitting the Wall"

- When you run out of muscle glycogen stores, you rely on your small reserves of liver glycogen to maintain blood glucose levels.
- After liver glycogen stores are used up, blood sugar levels drop and you are forced to either slow way down or stop.
- In some sports, this is called “hitting the wall” or “bonking.”
The 3 Principles of Sports Nutrition

Fueling

Avoid “Hitting the Wall”
To avoid running out of muscle fuel during workouts or competitions:

- Start training sessions and competitions fully fueled.
- Refuel as needed during exercise.
- Replenish glycogen stores after exercise.

Diets with minimal carbs are NOT appropriate for athletes!
The 3 Principles of Sports Nutrition

Recovery

- Workouts and competitions deplete your glycogen stores.
- Muscle tissue is damaged as you train and compete, and requires repair.
- Your muscles are also being stimulated to adapt to your training workload.

- Recovery includes:
  - Reloading carbohydrate fuel stores
  - Repairing and building new muscle tissue
  - Rehydrating
The 3 Principles of Sports Nutrition

Recovery

- Recovery is where you realize the gains from all of your training.
- Recovery enables you to be ready for your next workout or competition.

- The recovery process doesn’t start after exercise until you provide your body with the nutritional components it needs:
  - Carbohydrates
  - Protein
  - Fluids
  - Replacing key electrolytes lost in sweat
The 3 Principles of Sports Nutrition

Recovery

In order to promote rapid recovery, as soon as possible after training or competing (within 30–60 minutes), consume:

- Carbohydrates for glycogen restoration
- Protein for repairing and building new muscle tissue
- Fluids and sodium for rehydration
The 3 Principles of Sports Nutrition

To apply these principles correctly, practice them during training.

- When your training and sports nutrition regimen are in sync, you maximize your performance gains.
- It is only through a system of trial and error during training that you can develop your own personalized sports nutrition plan.
- Practice your sports nutrition regimen during training. Don’t try anything new on race or game day.
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Your Sports Nutrition Game Plan

Putting the principles of sports nutrition into practice:

- **Start exercise fully hydrated and fueled.**
  - Carbohydrate load when necessary.
  - Match your sweat rate and know what to hydrate with during exercise.
  - Refuel as needed during exercise.
  - Promote full recovery:
    - After exercise
    - Daily strategies
Your Sports Nutrition Game Plan
Start Exercise Fully Hydrated and Fueled

By starting workouts and competitions fully hydrated:
- You’ll be able to train harder and achieve better workouts.
- You’ll be able to compete at a higher level for longer.

Make up for any fluid deficits from prior workouts or competitions:
- Consume 14–20 fl oz (400–600 ml) of water or a sports drink 2–3 hours before training or competing.

Keep hydrating as needed during warm-ups.

Monitor your hydration status before exercise by checking the color of your urine:
- Light-yellow color is consistent with adequate hydration.
- If urine is the color of apple juice, more fluids are needed.
Glycogen stores get utilized every time you train or compete:

- If fuel reserves aren’t consistently replenished, deficits build and you feel fatigued during exercise.

**Top off muscle glycogen fuel stores before exercise:**

- Consume a carb-based meal 2–4 hours before exercise.
- Choose familiar carb-based foods and beverages, including pasta, rice, bread, cereal, vegetables, fruit, and sweetened dairy products such as flavored yogurts and flavored milks.

**The goal is to start fully fueled but feeling comfortable:**

- Avoid slow-to-digest fatty and high-fiber foods prior to exercise.
- Experiment during training to find the right food items and routine that work best for you.
Examples of high-carbohydrate pre-exercise meals
(2–4 hours before exercise)

Breakfast
- Cold or hot cereal, fruit, and low-fat or nonfat milk
- French toast or pancakes with maple syrup
- English muffin with jam and peanut butter, banana, and fruit juice

Lunch or Dinner
- Pasta with tomato sauce, French bread, steamed vegetables, low-fat/nonfat milk, pudding, and canned fruit
- Grilled chicken sandwich, baked potato with low-fat sour cream or salsa, and low-fat frozen yogurt
- Thick-crust cheese pizza, low-fat gelato, and canned peaches
- Baked or grilled chicken, turkey, fish, or lean beef; steamed rice; roll; green beans; low-fat frozen yogurt; and fruit juice
Consume an easy-to-digest, carb-based snack (about 40–60 grams of carbs) 30–60 minutes before exercise, along with fluids.

If you’ve got pregame jitters, don’t skip eating entirely:
- Try liquid carbohydrate sources in place of solid foods.

Ideas for quick-to-digest, carb-based options:
- Fruit smoothie or meal-replacement beverage
- PowerBar® Performance Energy bar, PowerBar® Energy Gel, or PowerBar® Energy Blasts gel filled chews with water
- Small roll or sandwich made with a banana and honey
- Low-fat or nonfat yogurt or frozen yogurt, gelato, or sorbet
Your Sports Nutrition Game Plan

Putting the principles of sports nutrition into practice:

- Start exercise fully hydrated and fueled.

- **Carbohydrate load when necessary.**
  - Match your sweat rate and know what to hydrate with during exercise.
  - Refuel as needed during exercise.
  - Promote full recovery:
    - After exercise
    - Daily strategies
Your Sports Nutrition Game Plan
Carbohydrate Load When Necessary

- Carbohydrate loading is a research-proven fueling strategy designed to extend endurance in athletes.
- Consider carbohydrate loading before periods of intense training or a long endurance event.
- If you’re exercising at a steady pace and intensity, carbohydrate loading can increase endurance by about 20%.
## Your Sports Nutrition Game Plan

### Carbohydrate Load When Necessary

## How to carbohydrate load:

<table>
<thead>
<tr>
<th>Two Different Approaches</th>
<th>Carb-Loading Regimen</th>
<th>Example: 150-lb (68-kg) athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>3–4 days prior</strong> (Taper exercise for 3–4 days before your event)</td>
<td>3.6–5.5 g of carbs per lb body weight daily (8–12 g per kg)</td>
<td>540–825 g of carbs per day for 3–4 days before</td>
</tr>
<tr>
<td><strong>1–2 days prior</strong> (Rest for 1–2 days before your event)</td>
<td>4.5–5.5 g of carbs per lb body weight daily (10–12 g per kg)</td>
<td>675–825 g of carbs per day for 1–2 days before</td>
</tr>
</tbody>
</table>
Your Sports Nutrition Game Plan
Carbohydrate Load When Necessary

700 g of carbs — sample menu

Breakfast
- 1 cup cold breakfast cereal with 1 cup low-fat or nonfat milk
- 1 cup canned peaches
- 2 slices white toast with jam
- 1 cup of orange juice

Morning snack
- 1 PowerBar® Performance Energy bar
- 1 banana
- 20 fl oz (600 ml) Ironman Restore™ sports drink

Lunch
- 1 bagel with banana and honey
- 1 sandwich with lean meat, tomato, and lettuce
- 1/2 cup canned mandarin oranges or fruit cocktail
- 1 cup low-fat or nonfat yogurt with fruit
- Water

Afternoon snack
- 2 cups fresh fruit smoothie made with yogurt and frozen or canned fruit
- 1 PowerBar® Fruit Smoothie Energy bar

Dinner
- 1-1/2 cups pasta
- 1 cup tomato sauce with or without lean meat
- 1 cup cooked green beans
- 1 orange
- 1 cup sorbet with fruit
- 1 cup fruit juice

Evening snack
- 1 cup cold breakfast cereal with 1 cup low-fat or nonfat milk
- 20 fl oz (600 ml) Ironman Restore™ sports drink
Putting the principles of sports nutrition into practice:

- Start exercise fully hydrated and fueled.
- Carbohydrate load when necessary.
- Match your sweat rate and know what to hydrate with during exercise.
- Refuel as needed during exercise.
- Promote full recovery:
  - After exercise
  - Daily strategies
Your Sports Nutrition Game Plan
Match Your Sweat Rate and Know What to Hydrate with During Exercise

To stay hydrated during exercise, consume fluids at a rate that closely matches your sweat rate:

- Matching your sweat rate generally requires about 13–26 fl oz (400–800 ml) of fluid every hour of exercise, preferably in smaller amounts taken frequently. But fluid needs can vary considerably.
- Calculate your sweat rate to determine your actual hydration needs.
- To calculate your sweat rate, and for a personalized plan to meet your unique hydration needs, click on the PowerBar® Sweat Rate Calculator at [www.PowerBar.com](http://www.PowerBar.com).
Your Sports Nutrition Game Plan

Match Your Sweat Rate and Know What to Hydrate with During Exercise

Carry your own sports bottle or fuel belt and use breaks wisely:

- Most athletes can easily consume about 5 fl oz (150 ml) during a quick break; each gulp is about 1 fl oz (30 ml).

Monitor the effectiveness of your hydration plan. Many athletes fall far short of meeting their hydration needs during exercise:

- Weigh yourself before and after practices or competitions.
- The goal is to stay in your hydration zone and avoid dehydration. That means losing no more than 2% of your body weight during exercise.
- If your weight loss is greater than 2%, make a conscious effort to take in more fluids during exercise.
Your Sports Nutrition Game Plan
Match Your Sweat Rate and Know What to Hydrate with During Exercise

A sports drink is generally the best option when you’re training or competing. The advantages of a sports drink over plain water are many:

- It promotes better performance because it provides carbohydrates to fuel your muscles and your brain.
- Athletes freely consume more fluids when their hydration beverage is flavored, as is the case with a sports drink.
- Sodium and carbs cause the fluid in the sports drink to be absorbed more quickly.
- The sodium also helps maintain your drive to continue drinking fluids when exercising, which is crucial to meeting your fluid needs.
- Sodium also helps you retain the fluid that you’ve consumed.
Your Sports Nutrition Game Plan
Match Your Sweat Rate and Know What to Hydrate With During Exercise

**Water** is fine when exercising for less than 1 hour in moderate temperature conditions. **A sports drink** is recommended for exercise of 1 hour or longer, and anytime conditions are hot or humid.
Putting the principles of sports nutrition into practice:

- Start exercise fully hydrated and fueled.
- Carbohydrate load when necessary.
- Match your sweat rate and know what to hydrate with during exercise.

- Refuel as needed during exercise.
  - Promote full recovery:
    - After exercise
    - Daily strategies
Carbohydrate is the primary muscle fuel utilized during exercise, and stores are limited.

Carbohydrate refueling needs depend on the length and intensity of exercise.

For long-duration, all-out effort, refuel with sports nutrition products that provide a 2:1 blend of glucose and fructose to speed energy delivery to muscles and extend endurance.
**Your Sports Nutrition Game Plan**

**Refuel as Needed During Exercise**

<table>
<thead>
<tr>
<th>Carb refueling recommendations:</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exercise lasting less than 1 hour</strong></td>
<td>Carbohydrate intake during exercise is not required to fuel your performance. However, a sports drink with carbs and sodium can help hydrate you more effectively.</td>
</tr>
<tr>
<td><strong>Exercise lasting 1–2 hours</strong></td>
<td>Consume 30–60 g of carbs during each hour of exercise, to boost performance and extend endurance.</td>
</tr>
<tr>
<td><strong>Intense training lasting longer than 2–3 hours</strong></td>
<td>Consume 45–90 g of a 2:1 blend of glucose and fructose per hour of exercise, to increase energy delivery to muscles and extend endurance.</td>
</tr>
</tbody>
</table>
Putting the principles of sports nutrition into practice:

- Start exercise fully hydrated and fueled.
- Carbohydrate load when necessary.
- Match your sweat rate and know what to hydrate with during exercise.
- Refuel as needed during exercise.

- Promote full recovery:
  - After exercise
  - Daily strategies
Your body is ready to start the recovery process as soon as you finish your workout or competition, but you need to provide the necessary nutrients:

- Carbohydrates to restore depleted glycogen stores
- Protein to repair and build muscle tissue
- Fluids and sodium to rehydrate
Carbohydrates

To speed glycogen restoration after strenuous exercise:

- Consume 0.5 grams of carbs per lb (1.1 grams per kg) body weight within 30 minutes of finishing exercise.
- For a 150-lb (68-kg) athlete, that equates to 75 grams of carbohydrates right after exercise.
- Repeat this within 2 hours after exercise, or consume a carb-based meal.
- For heavy training, repeat this hourly for the first 3 hours after exercise, or consume carb-based meals and snacks.
- Simple carbs right after exercise are more effective at speeding glycogen restoration.
- This is especially important if you are exercising again within 24 hours.
Fully rebuilding glycogen stores takes about 24 hours on a carb-based diet — but many athletes don’t get enough total carbs each day.

<table>
<thead>
<tr>
<th>Exercise</th>
<th>Total Daily Carbohydrate Needs</th>
<th>150-lb (68-kg) Athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Light Training</strong></td>
<td>2.3–3.2 g of carbs per lb body weight (5–7 g per kg)</td>
<td>345–480 g of carbs per day</td>
</tr>
<tr>
<td>&lt;1 hour, low-intensity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Heavy Training</strong></td>
<td>3.2–4.5 g of carbs per lb body weight (7–10 g per kg)</td>
<td>480–680 g of carbs per day</td>
</tr>
<tr>
<td>1–4 hours, moderate- to high-intensity</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Extreme Training</strong></td>
<td>4.5–5.5 g per lb body weight (10–12 g per kg)</td>
<td>680–816 g of carbs per day</td>
</tr>
<tr>
<td>&gt;4 hours, moderate- to high-intensity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Sample intake for about 500 g of carbs per day

<table>
<thead>
<tr>
<th>Item</th>
<th>Grams of carbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup cereal, 1 cup milk</td>
<td>45</td>
</tr>
<tr>
<td>1 cup blueberries</td>
<td>21</td>
</tr>
<tr>
<td>PowerBar® Performance Energy bar</td>
<td>45</td>
</tr>
<tr>
<td>Sandwich, 2 oz turkey</td>
<td>32</td>
</tr>
<tr>
<td>½ cup baby carrots</td>
<td>6</td>
</tr>
<tr>
<td>16 oz chocolate 1% milk</td>
<td>52</td>
</tr>
<tr>
<td>1 cup flavored yogurt</td>
<td>47</td>
</tr>
<tr>
<td>BBQ chicken tenderloins, 7.5-oz package</td>
<td>34</td>
</tr>
<tr>
<td>1 cup white rice</td>
<td>41</td>
</tr>
<tr>
<td>1 cup cooked sweet potatoes</td>
<td>58</td>
</tr>
<tr>
<td>1 PowerBar Harvest® Energy bar</td>
<td>45</td>
</tr>
<tr>
<td>16 oz cranberry juice</td>
<td>68</td>
</tr>
</tbody>
</table>

**Total grams of carbs**: 494
Protein

Muscle tissue repair and building is critical to recovery:

- Muscle tissue is made up of proteins, and proteins are made up of building blocks known as amino acids.
- When you consume foods, any protein present is digested and broken down into its component amino acids.
- These amino acids are then absorbed and repackaged into the proteins your body needs for the repair and building of muscle tissue.
### Total Daily Protein Needs

<table>
<thead>
<tr>
<th></th>
<th>150-lb (68-kg) Athlete</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Resistance Exercise</strong></td>
<td>82–116 g of protein per day</td>
</tr>
<tr>
<td>0.55–0.77 g per lb body weight (1.2–1.7 g per kg)</td>
<td></td>
</tr>
<tr>
<td><strong>Endurance Exercise</strong></td>
<td>82–109 g of protein per day</td>
</tr>
<tr>
<td>0.55–0.73 g per lb body weight (1.2–1.6 g per kg)</td>
<td></td>
</tr>
<tr>
<td><strong>Teenage Athletes</strong></td>
<td>102–136 g of protein per day</td>
</tr>
<tr>
<td>0.68–0.91 g per lb body weight (1.5–2.0 g per kg)</td>
<td></td>
</tr>
</tbody>
</table>

Athletes need more protein than inactive individuals, but most athletes get plenty of protein — and consuming more than what you need offers no extra muscle-building or performance benefits.

**Your Sports Nutrition Game Plan**

**Promote Full Recovery: After Exercise**

[Image of PowerBar logo: Power to PUSH]
### Sample daily intake for about 100 g of protein per day

<table>
<thead>
<tr>
<th>Item</th>
<th>Grams of protein</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 cup cereal, 1 cup milk</td>
<td>11</td>
</tr>
<tr>
<td>PowerBar® Performance Energy bar</td>
<td>9</td>
</tr>
<tr>
<td>Sandwich, 2 oz turkey</td>
<td>20</td>
</tr>
<tr>
<td>½ cup baby carrots</td>
<td>1</td>
</tr>
<tr>
<td>1 cup low-fat milk</td>
<td>8</td>
</tr>
<tr>
<td>8 oz low-fat yogurt</td>
<td>8</td>
</tr>
<tr>
<td>4 oz chicken breast</td>
<td>28</td>
</tr>
<tr>
<td>1 cup brown rice</td>
<td>6</td>
</tr>
<tr>
<td>1 cup cooked broccoli</td>
<td>2</td>
</tr>
<tr>
<td>1 PowerBar Harvest® Energy bar</td>
<td>10</td>
</tr>
<tr>
<td><strong>Total grams of protein</strong></td>
<td><strong>103 grams</strong></td>
</tr>
</tbody>
</table>
Your Sports Nutrition Game Plan
Promote Full Recovery: After Exercise

Protein
Focus on timing your protein intake in relation to workouts.
Within 1 hour after exercise, consume 15–25 grams of protein.
Fluids and Sodium

Even if you are diligent in your hydration efforts during exercise, you may lose more fluids than you take in.

- Weigh yourself before and after exercise to gauge your net loss of fluids.
- Replace fluids lost by gradually drinking 16–24 fl oz of a sports drink, recovery beverage, or water for every lb of weight lost (1,500 ml/kg weight lost).
- Rehydration will be more effective when sodium is included with the fluid and food you consume as you recover.
Your Sports Nutrition Game Plan

It can’t be overemphasized: Practice it during training.

- When your training and sports nutrition regimen are in sync, you maximize your performance gains.
- It is only through a system of trial and error during training that you can develop your own personalized sports nutrition plan.
- Practice your sports nutrition regimen during training.
- Don’t try anything new on race or game day.
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