

## **Sports & Nutrition: Fueling Your Performance**

### **Nutrition - The Right Balance**

Like a car which runs best on a full tank of gas, your body needs the right kind of "nutritional fuel" for peak performance. It's important to fuel your body with a healthy balance of carbohydrates, proteins, fats, minerals, vitamins, and water.

### **Carbohydrates**

- "carbs" come from pasta, bread, cereal, rice, fruits, milk, yogurt, potatoes, etc.
- Carbs are especially important for athletes because they supply the body with glucose (blood sugar) for energy.
- Extra glucose is stored in the muscles and liver as glycogen, your energy reserve.
- During short bursts of exercise such as sprinting, basketball, gymnastics, or soccer, your body primarily uses glycogen for energy. If you don't have enough glycogen you can feel very tired, which will affect your athletic performance.
- During longer exercise, your body uses the glycogen stores first and then uses fats stored in your body to fuel performance.

### **Fat**

- An important source of energy used to fuel longer exercise and endurance activities, such as hiking, cycling, and long-distance running.
- Eating a diet that is too low in dietary fat may decrease athletic performance and cause other health problems.

### **Protein**

- Necessary to build and repair muscles. Small amounts of protein may also be used for energy.

### **Vitamins and minerals**

- Not sources of energy, but they have many important functions in the body.
  - For example, vitamin D and calcium are needed for strong bones and iron is needed for blood cells to carry oxygen throughout your body.
- Athletes should eat a balanced diet with a variety of foods to make sure they get enough vitamins and minerals.
- It is fine to take a regular multivitamin with added minerals as a safety net, but supplements with high doses of vitamins and minerals do not improve performance and may actually be harmful.

## **Water**

- **Essential to keep you hydrated (when your body has enough fluids).**
- **Dehydration (when you don't have enough fluids) can cause muscle cramps and keep you from performing your best.**

## **Healthy Eating Tips for Athletes**

- **Eat a variety of foods. Because different foods have different nutrients, you must eat a variety of foods to get all the nutrients you need to keep your body in peak condition. For example, oranges have vitamin C and carbohydrates, but no iron or protein. Beef provides iron and protein, but not vitamin C or carbs.**
- **Eat regular meals and snacks. Skipping meals will weaken your performance. Eating regular meals and healthy snacks is the best way to fuel your body for athletic events.**
- **Eat enough calories. Calories fuel your body for exercise and replace energy that is used up during competition. Cutting calories or carbs keeps you from performing your best. Exercise and athletic training demands extra energy, and it is essential to meet your body's energy needs if you want to compete at full strength.**
- **Drink plenty of fluids. Athletes need more fluids than non-athletes. Do not wait until you are thirsty to start drinking water, because thirst means that you are already dehydrated. Remember to drink even more in hot weather.**

## **What fluids should I drink and how much do I need?**

### **Before exercise:**

- **Drink 16 ounces (2 cups) of fluid 2-3 hours before you begin exercising.**
- **You should drink another 8 ounces (1 cup) of fluid 10 to 20 minutes before exercise.**
- **Water is usually the best source of fluid for athletes.**
- **Make sure that a water bottle is a regular part of your sports equipment!**

### **During exercise:**

- **Drink lots of fluids, especially water, during exercise because you can lose a lot of water through sweat.**
- **Even being a little dehydrated can weaken your performance.**
- **Drink at least 8 ounces (1 cup) of water or fluid every 15-20 minutes during exercise.**
- **For exercise that lasts more than 45-50 minutes, a sports drink (like Gatorade® or Powerade®) can help replace water, carbs, and electrolytes.**

- **Avoid sodas and drinks that contain caffeine because they can dehydrate you more.**

**After exercise:**

- **Drink at least 16 ounces (2 cups) of fluid after exercising.**
- **If you sweat a lot, drink more!**
- **Calorie containing drinks (like juice or a sports drink) can replace water and glucose.**
- **You can figure out if you are well hydrated by looking at the color of your urine. A clear color is a sign of good hydration. However, if you see a darker yellow color, this means that you need to drink more fluids.**

<b>When to Drink</b>	<b>How Much to Drink</b>
<b>2 to 3 hours before exercising</b>	<b>Drink 16 ounces of fluid</b>
<b>10 to 20 minutes before exercising</b>	<b>Drink 8 ounces of fluid</b>
<b>While exercising</b>	<b>Drink 8 ounces of fluid every 15-20 minutes</b>
<b>After exercising</b>	<b>Drink at least 16 ounces of fluid</b>

## **What should I eat to fuel my exercise?**

**The food you eat before you exercise greatly affects the quality of your athletic performance. These tips will help you plan your pre-exercise meals to prevent low blood sugar, to keep you from feeling hungry, and to fuel your muscles for training and competition.**

### **Fueling Before Exercise**

- 1. Eat a larger meal if you have 3-6 hours before you begin your exercise. Smaller "mini" meals are better if have 2-3 hours before your workout begins. Meals that are high in complex carbohydrates (foods rich in carbohydrate that have long lasting energy power) are best because they fuel your muscles. Pasta, bagels, baked potatoes, rice, and fresh fruit are all good sources of complex carbohydrates.**
- 2. Avoid high-bulk (high-fiber) foods such as broccoli, baked beans, or bran cereal. These foods may cause stomach pains during exercise.**
- 3. Avoid sugars and sweets, especially soda and candy, less than 1 hour before training. High-sugar foods will give you quick energy, but they won't last long enough.**
- 4. Limit foods that are high in dietary fat such as fast food, eggs, meat, and cheese that you eat for your pre-exercise meal. These foods take much longer to digest and may make you feel sluggish and tired if you eat too much of them.**
- 5. Do not try new foods before a competition. You may have trouble digesting a food you have never eaten before. Choose foods that are familiar to you.**

<b>Hours Before Exercise</b>	<b>Ideas of What to Eat</b>	<b>Ideas of What to Drink</b>
<b>1-2 Hours: Snack</b>	<b>Fresh Fruits or Vegetables (low fiber), Crackers, Granola or Cereal Bars</b>	<b>Water Fruit or Veggie Juices</b>
<b>2-3 Hours: "Mini" Meal</b>	<b>Fruits, Vegetables, Breads, Bagels, Crackers, Cereal</b>	<b>Water Fruit or Veggie Juices</b>
<b>3-6 Hours: Larger Meal</b>	<b>Fruits, Vegetables, Breads, Bagels, Peanut Butter, Lean Meat, Cheese, Yogurt, Cereal with Milk, Baked Potato</b>	<b>Water Fruit or Veggie Juices</b>

## **Fueling After Exercise**

**It is very important to refuel your body after a hard workout. Because your body replaces glycogen stores in your muscle within the first few hours after exercise, it is important to eat carbohydrates and some protein soon after your workout. Follow these tips when planning your post (after)-exercise meal:**

- 1. Even if you aren't hungry, you should eat a snack that contains carbohydrates within 30 minutes after your workout (such as a yogurt or half a sandwich). This will help your body recover quickly.**
- 2. You should eat a larger meal that is high in carbohydrates and has some protein within the next 2 hours to replace your muscle glycogen stores that were used up during exercise.**

## **What is "carb loading"?**

- Carbohydrate loading is a technique used to increase the amount of glycogen in muscles. It involves eating extra carbohydrates during the week before a competition while at the same time decreasing training.**
- Carbohydrate loading is intended for marathon runners and other endurance elite athletes.**
- It is not recommended for teens. Simply eating a diet high in carbohydrates is enough to build the glycogen stores you need.**

## **Should I eat extra protein or use protein supplements?**

- Although some extra protein is needed to build muscle, most people get plenty of protein from food.**
- Getting extra protein from supplements will not have any added benefit.**
- Eating enough calories is actually more important for building muscle.**
- Without enough calories, your body can't build new muscle.**

## **Should I eat energy bars?**

- It depends. There are many different energy bars you can buy. Some are high in carbohydrates and others are high in protein. They do not contain any magic ingredients that will help your athletic performance.**
- Regular foods that have some carbohydrate and protein in them like yogurt, cheese and crackers, or cereal bars are just as good and usually cost less.**
- However, energy bars are convenient and may taste good. If you are eating them for these reasons, then they are fine. Energy bars are usually pretty dense and low in moisture so make sure you drink plenty of fluids when you eat them.**

**Remember:**

**Athletes need more food and fluids than non-athletes.**

**Regular meals and healthy snacks will help fuel your body before and after exercise.**

**Give your body enough of the right fuel in order to feel good and have the energy you need to be the best athlete you can be!**

*Adapted from: Centers From Young Women, Children's Boston Hospital*