CARBOHYDRATES AND ATHLETIC PERFORMANCE

There has been much hype in the media lately about the possible benefits of low-carbohydrate diets. While a low-carbohydrate diet may be beneficial for short term weight loss in obese people, low-carbohydrate diets are NOT recommended for athletes. A person’s ability to exercise at a high intensity level, and to recover from intense exercise, is directly related to daily carbohydrate intake. A low-carbohydrate diet is detrimental to an athlete during high intensity exercise as their endurance is reduced and their ability to recover from high intensity exercise is impaired.

High carbohydrate foods are needed to replace muscle glycogen (energy) used during exercise. A high carbohydrate diet is essential when trying to delay the depletion of the body’s energy reserves. Even on a high carbohydrate diet, depending on the intensity and duration of the activity, muscle glycogen can be depleted in as little as 10-20 minutes. When consuming a high carbohydrate diet, it takes at least 24 hours to replace muscle glycogen after intense exercise. It takes much longer when consuming a low carbohydrate diet.

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The following are some examples of foods containing high quality carbohydrates:

**Fruits: (Fresh, frozen, canned, or dried)**

- Apples
- Applesauce
- Apricots
- Bananas
- Cantaloupe
- Fruit cocktail
- Fruit salad
- Fruit Roll-ups
- Fruit juices
- Grapes
- Kiwi
- Oranges
- Peaches
- Pineapple
- Plums
- Raisins
- Strawberries
- Watermelon

**Vegetables & legumes: (Fresh, frozen, or canned)** Fresh or frozen vegetables are higher in nutrients than canned and excessive cooking can reduce their nutrient content.

- Asparagus
- Baked beans
- Baked potatoes
- Boiled potatoes
- Broccoli
- Carrots
- Cauliflower
- Celery
- Chili
- Coleslaw
- Corn
- Dried peas
- Green beans
- Green peppers
- Peas
- Spinach
- Sweet potatoes
- Tomatoes
- Tomato sauce
- Vegetable juices
- Watermelon
- Zucchini

**Breads, Grains, and Cereals:** Thicker, heavier, whole-grain breads have more carbohydrate than thinner, lighter breads. This makes them slightly higher in calories, but those are nutritious calories that can be used for sustained energy as well as providing a good source of vitamins and minerals. *A nutritious goal is to eat whole-grain products one-half of the time.* Cold cereals that are fortified with vitamins and minerals are also excellent sources of energy.
Angel Food cake    Corn bread    Macaroni    Rice cakes  
Animal crackers  Crackers    Muffins, with fruit    Sandwich buns  
Bagels         Dinner rolls    Noodles    Spaghetti  
Biscuits       English muffins    Pancakes    Stuffing  
Bran muffins   Fruit bars (i.e.,    Pita Bread    Thick crust pizza  
Bread          Fig bars)        Popcorn (lightly    Tortillas  
Brownies       Ginger Snaps    buttered),    Vanilla wafers  
Cereal party mix  Granola bars    Pretzels    Waffles  
Cold cereal    Hot cereal    Rice  

*Dairy Products: (Choose low-fat whenever possible.)*

Cheese  
Cottage Cheese  
Frozen Yogurt  
Ice cream  
Ice milk - this contains half the fat of ice cream  
Milk, white or chocolate - choose low fat, when possible  
Pudding  
String Cheese  
Yogurt, fruit added - choose low fat when possible

**Another important factor in consuming enough carbohydrate is the timing of when foods containing carbohydrate are consumed.** If carbohydrate is consumed during exercise, it may be best to do so in liquid form. Sports drinks work well during exercise as they are easy to use and typically contain 6%-8% carbohydrate, or about 50 calories per 8-ounce serving. This amount of carbohydrate can easily be utilized by the body during exercise without triggering an insulin response which may reduce energy levels. One of the best times to replace carbohydrate expended during exercise is within 30-minutes after exercise. Bagels, fruit, pretzels, juice or sports drinks are convenient ways to accomplish this.

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In summary, while the jury is still out on the benefit of low-carbohydrate diets among an obese population, **low-carbohydrate diets are NOT recommended for athletes.** An athlete’s major energy source is carbohydrate and **depriving the body of carbohydrate will certainly result in decreased athletic performance.**
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