

# Swimmers Nutrition

## **OBJECTIVE:**

To provide basic information on how proper eating and hydration can improve health and swimming performance.

## **BASIC NUTRIENTS**

Carbohydrates, fat and protein supply energy (or calories). They are the energy or fuel source for your body, just as gasoline is the fuel for cars.

## **CARBOHYDRATES:**

Swimmers get most of the energy for their workouts and performance from carbohydrates. Certain foods, such as breads, cereals, pasta, fruits and vegetables, are excellent sources of carbohydrates. These foods are the primary source of energy used for swimmers. Swimmers should be consuming at least 6-11 servings per day.

## **FATS:**

Fat is also an energy source for swimmers, but it takes 20-30 minutes from the time an athlete starts to exercise until enough fat is available to be of much help during exercise. Cakes, pies, French fries, chips and pastries are foods high in fat. Swimmers have no problems in consuming fatty foods. As a matter of fact, they usually consume too much fat and as a result don't eat enough carbohydrates.

## **PROTEIN**

Protein, found throughout the body, is necessary to build all body cells. It is possible to use protein for energy; however, that is one of its least important functions in the body. Only during starvation or extreme malnutrition does the body use protein as a source of fuel.

## **HOW MUCH CARBOHYDRATE, FAT AND PROTEIN DO SWIMMERS NEED?**

It has been clearly shown that swimmers in training need more calories and these extra calories should be coming from foods high in carbohydrates. A swimmer's diet should contain an energy nutrient balance that includes:

- 12-15% protein
- 25-30% fat
- 55-70% carbohydrate

Notice that a swimmer does need fat. Swimmers should not be on fat free diets! The problem occurs when fat crowds out the needed carbohydrates!

## **VITAMINS:**

Vitamins help control the growth of all body tissue. They are also essential for the release of energy in the body. The body cannot make most vitamins, therefore you must supply these vitamins to your body in what you eat and drink. Vitamins are widely distributed in the foods that make up the typical diet. Most swimmers can obtain all essential vitamins they need by eating a wide variety of foods from the basic food groups that include meat, dairy products, vegetables and grain products.

## **MINERALS:**

Like vitamins, minerals are involved in an endless number of jobs in the body. The major functions of minerals are building cells and controlling body processes. Swimmers who constantly eat inadequate diets may require specific minerals. Important minerals include calcium, iodine, iron and phosphorous.

## **DO SWIMMERS NEED TO TAKE EXTRA VITAMINS AND MINERALS?**

Although deficiencies of vitamins and minerals can result in poor performance, there is no evidence that vitamins and minerals taken in excess of the normal daily requirements will enhance performance. Swimmers can automatically increase their vitamin and mineral intake if they make wise food choices from the five food groups.

The food guide pyramid, developed by the United States Department of Agriculture (USDA), replaces the four food groups. It was developed to follow the Dietary Guidelines for Americans two years of age and older. Here are the guidelines:

- Eat a variety of foods
- Maintain a healthy weight
- Choose a diet low in fat, saturated fat, and cholesterol
- Choose a diet with plenty of vegetables, fruits, and grains
- Use sugar in moderation
- Use salt and sodium in moderation.

The food guide pyramid consists of six groups. These groups are arranged from those that should be consumed the most to those that should be consumed the least. The groups and serving amounts are as follows:

6-11 of the bread, cereal, rice and pasta group;

3-5 of the vegetable group; 2-4 of the fruit group;

2-3 of the milk, yogurt and cheese group;

2-3 of the meat, poultry, fish, dry beans, eggs and nuts group; and the fats, oils, and sweets group that should be used sparingly.

Servings do not have to be measured, but are used as a guide. For mixed food groups, one should estimate the food group servings of the main ingredients. For example, a generous serving of pizza would count in the bread group (crust), the milk group (cheese), and the vegetable group (tomato). This also has some fat from the cheese. The food guide pyramid emphasizes the five groups in the lower three sections: the bread, cereal, rice and pasta group; the vegetable group; the fruit group; the milk, yogurt and cheese group; and the meat, poultry, fish, dry beans, eggs and nuts group. Each of these food groups provides some, but not all, of the nutrients one needs. Foods in one group cannot replace those in another and no one food group is more important than another for good health. All are necessary.

For swimmers, this food guide pyramid is an advantageous tool because it emphasizes the high carbohydrate foods: grains, vegetables, fruits, and milks. The consumption of high carbohydrate meals is important for the swimmer because carbohydrates replete muscle glycogen, which is the primary fuel used by swimmers. Without muscle glycogen, the athlete's performance gradually decreases and even an easy workout causes fatigue.

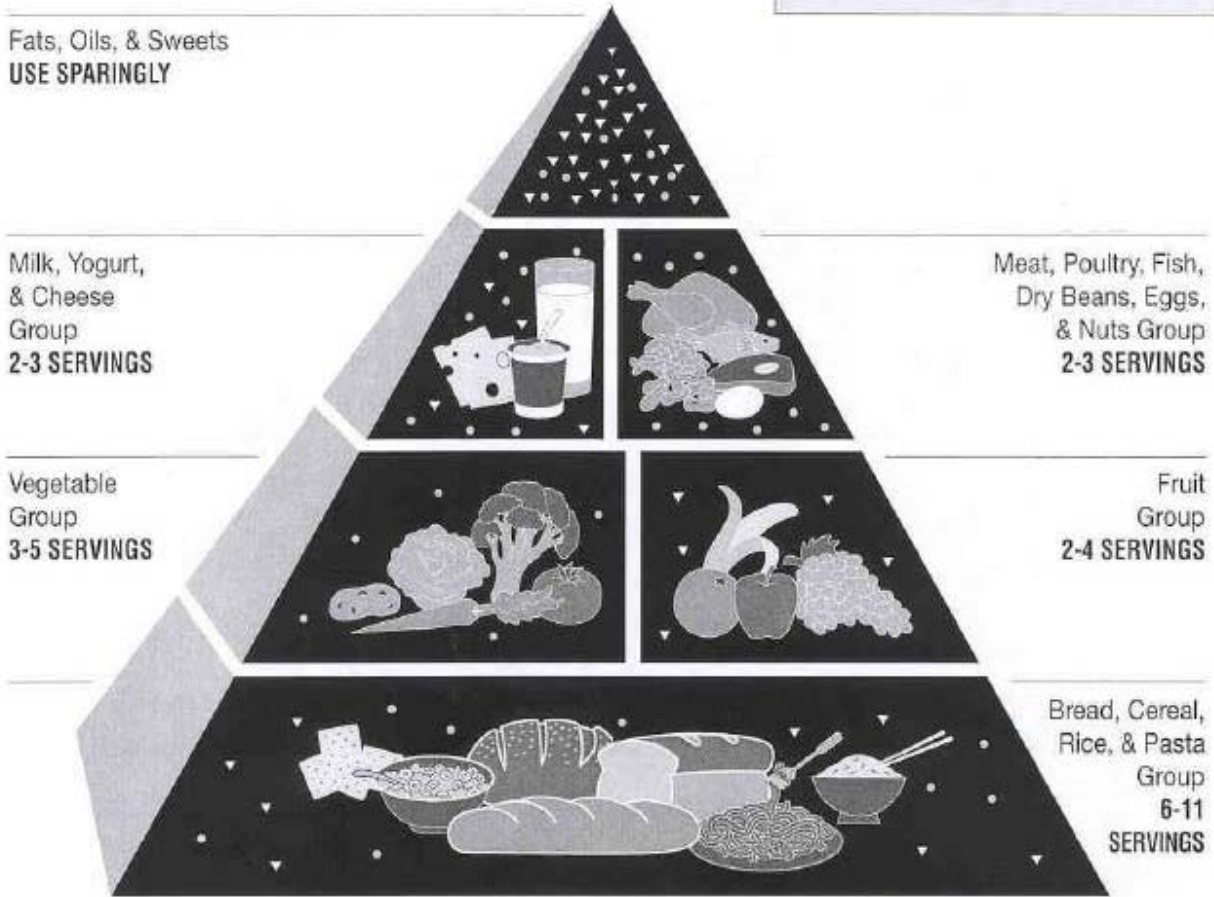
# The Food Guide Pyramid

A Guide to Daily Food Choices

**KEY**

- ◻ Fat (naturally occurring and added)
- ◼ Sugars (added)

These symbols show fat and added sugars in foods.



## **DISCUSSION:**

As evident, more foods fit in the lower levels than at the top. This is because athletes should consume a diet high in carbohydrates with moderate protein and a limited amount of fat. If the pyramid has more foods in the top than in the bottom, then it is an inverted pyramid. This type of diet may be detrimental to swimming performance because it is low in carbohydrates and high in fat. Instead, try to eat foods from the various food groups in proportion to the areas on the pyramid--the major part of your diet coming from breads and starches, then fruits and vegetables, followed by meat and dairy (preferably low fat choices), and lastly fats and sweets. Following the food guide pyramid will help get the carbohydrates needed to replenish muscle glycogen and will also promote good health.

## **Competition Cuisine**

Swimming fast is a result of hard training, dedication and making wise food choices. The type of food a swimmer eats may influence how they compete in the water. The key to nutrition and swimming is to make sure that you have eaten enough carbohydrates before the competition starts, not the day before the meet. It may take 24-72 hours to fully reload the muscles with energy (glycogen). It is important for swimmers to consume meals high in carbohydrates at least 2-3 DAYS before the start of a meet, or performance will deteriorate and even an easy workout or race may cause fatigue. It is often difficult for swimmers who are traveling to find nutritious meals that are high in carbohydrates. Fast-food restaurants are often chosen because they are convenient and affordable. To ensure that swimmers make wise food choices while on the road, a coach or swimmer can decide where to eat before mealtime, making sure the restaurant offers choices from all four food groups, while concentrating on high carbohydrate meals.

Use the following guidelines in choosing meals while traveling:

## **BREAKFAST**

- Order pancakes, waffles, French toast, bagels, cereal, English muffins, fruit or juice. These foods are all high in carbohydrates.
- Avoid high-fat choices such as bacon, sausage or biscuits and gravy.
- Pack containers of dry cereal, crackers, juice or dried fruit such as raisins and apricots; or pack fresh fruits such as apples or oranges in case the restaurant does not provide these items.
- If you eat breakfast at a fast food restaurant choose foods like cereal, fruit juice and muffins or pancakes. Avoid breakfast sandwiches, sausage and bacon.

## **EXAMPLES OF HIGH CARBOHYDRATE BREAKFAST MEALS**

- Orange juice Plain English muffin
- Fresh fruit OR Strawberry jam
- Low-fat yogurt Scrambled egg
- Pancakes with syrup Orange juice
- 2% or skim milk 2% or skim milk

## **LUNCH AND DINNER**

- Try restaurants that offer pastas, breads and salads.
- Order thick crust rather than thin crust pizza for more carbohydrates.

- Order vegetables such as mushrooms and green peppers on the pizza. Avoid high fat toppings such as pepperoni and sausage.
- Order vegetable soups accompanied by crackers, bread, or muffins.
- Emphasize the bread in sandwiches, not the filling, mayonnaise or potato chips.
- Avoid deep fat fried foods such as French fries, fried fish and fried chicken.
- Choose low-fat milk or fruit juices rather than soda pop.

### **EXAMPLES OF HIGH CARBOHYDRATE LUNCH OR DINNER MEAL**

- Large turkey sandwich on Chili on a large baked potato
- 2 slices of whole-wheat bread Whole grain bread or muffin
- Slice of low-fat cheese Low-fat chocolate milkshake
- Lettuce, tomato OR Fresh fruit
- Fresh vegetables like carrots
- and celery strips
- Low-fat yogurt
- Fresh fruit or fruit juice
- Minestrone Soup Thick crust cheese and
- Spaghetti with Marinara Sauce vegetable pizza
- Salad Bar OR Side Salad
- Italian Bread Fresh Fruit
- Fresh Fruit 2% milk or skim milk
- 2% or skim Milk
- Sherbet

If the swimmers cannot afford all three meals at a restaurant, they should choose breakfast for the team meal. With selections such as cereal (hot or cold), bagels, English muffins, pancakes, toast, fruit and fruit juice Breakfast can be inexpensive and the easiest way to consume carbohydrate rich foods. If your budget does not allow restaurant meals or if you only have day trips, a nearby grocery store will offer an alternative for a great variety of foods. Such stores may have a delicatessen or a soup and salad bar, and swimmers can pick up fresh fruits and vegetables, low fat milk and dairy products. Grocery stores are not only fast and easy to find, but they can also be a cheaper source of meals than a restaurant.

For swimmers who compete at all-day swimming meets choosing nutritious food throughout the day may be a problem. The swimmer should consider the amount of time between eating and racing when choosing foods to eat. The hot dogs, nachos, potato chips or candy bars found at most concession stands are extremely high in fat and usually will not be digested quickly. When these foods are eaten as a pre-event meal they may impair performance.

Suggested pre-racing menus include the following:

#### **ONE HOUR OR LESS BEFORE COMPETITION**

- Fruit and vegetable juice such as orange, tomato or V-8

AND/OR

- Fresh fruit such as apples, watermelon, peaches, grapes or oranges

AND/OR

- 1-1/2 cups of a sport drink like Gatorade

#### **TWO TO THREE HOURS BEFORE COMPETITION**

- Fresh fruit and fruit and vegetable juices

AND

- Breads, bagels, English muffins with limited amounts of butter, margarine, cream cheese, or peanut butter

AND/OR

- 4 cups of a sport drink like Gatorade

### **THREE TO FOUR HOURS BEFORE COMPETITION**

- Fresh fruit and fruit and vegetable juices

AND

- Breads, bagels, baked potatoes, cereal with low-fat or skim milk, low-fat yogurt, sandwiches with a small amount of peanut butter or lean meats and cheese

AND/OR

- 7 1/2 cups of a sport drink like Gatorade

When eating a meal at a fast food restaurant, try not to make it a dietary disaster. A typical fast food meal is high in fat and low in calcium, Vitamin A, and Vitamin C. It is difficult to choose a high carbohydrate meal at a fast food restaurant. Beware; you can eat half the calories a swimmer needs in one meal. Satisfy your hunger and nutrition needs by using the menus listed below as guidelines.

## **BREAKFAST MEALS AT FAST FOOD RESTAURANTS**

### **McDonald's**

- Hot cakes with syrup (hold the margarine and sausage)
- Orange juice
- low-fat milk

OR

- Cold cereal with low-fat milk
- Orange juice
- Apple, bran or blueberry muffin

### **CONVENIENCE/GROCERY STORE**

- Fruit flavored yogurt
- Large bran muffin or prepackaged muffins
- Banana
- Orange juice
- Low-fat milk

### **FAMILY STYLE RESTAURANTS**

- Pancakes, waffles or French toast with syrup (hold the margarine, bacon and sausage)
- Orange juice
- Low-fat milk

## **LUNCH/DINNER MEALS AT FAST FOOD RESTAURANTS**

### **500 CALORIE MEALS**

#### **McDonald's**

- Chicken fajita
- Vanilla low-fat milkshake

OR

- Hamburger
- low-fat milk
- Low-fat frozen yogurt cone

#### **BURGER KING**

- BK Broiler with BBQ sauce

- 2% milk
- Orange juice

### **700-750 CALORIE MEALS**

#### **McDonald's**

- Hamburger
- Side salad with low calorie dressing
- Strawberry low-fat milkshake

#### **ARBY'S**

- French dip
- Side salad with lite Italian dressing
- Jamocha shake

#### **TACO BELL**

- Bean burrito with red sauce
- Plain 10" tortilla
- low-fat milk

### **1000 CALORIE MEALS**

#### **McDonald's**

- McLean Deluxe with cheese
- Medium fries
- Chocolate low-fat milkshake

#### **PIZZA HUT**

- 2 slices medium cheese pan pizza
- 6 breadsticks
- Beverage

#### **WENDY'S**

- Plain baked potato
- Chili
- Side salad
- Small frosty

### **FLUID REPLACEMENT**

It is important for the swimmer to realize drinking water is important. In fact, one-half cup of water every 10-15 minutes helps to replace body fluids lost as the swimmer sweat. Many swimmers are unaware that they are sweating as they swim. Sports drinks can be beneficial especially if swimmers are training longer than 60 minutes. The rule of thumb is 6-8% carbohydrate fluids; this means 1/2 strength fruit juice and full strength sports drinks.

Drink 10-14 oz. Before exercise

Drink 3-4 oz. every 15 minutes during exercise.

Drink 2 cups for every pound lost during exercise