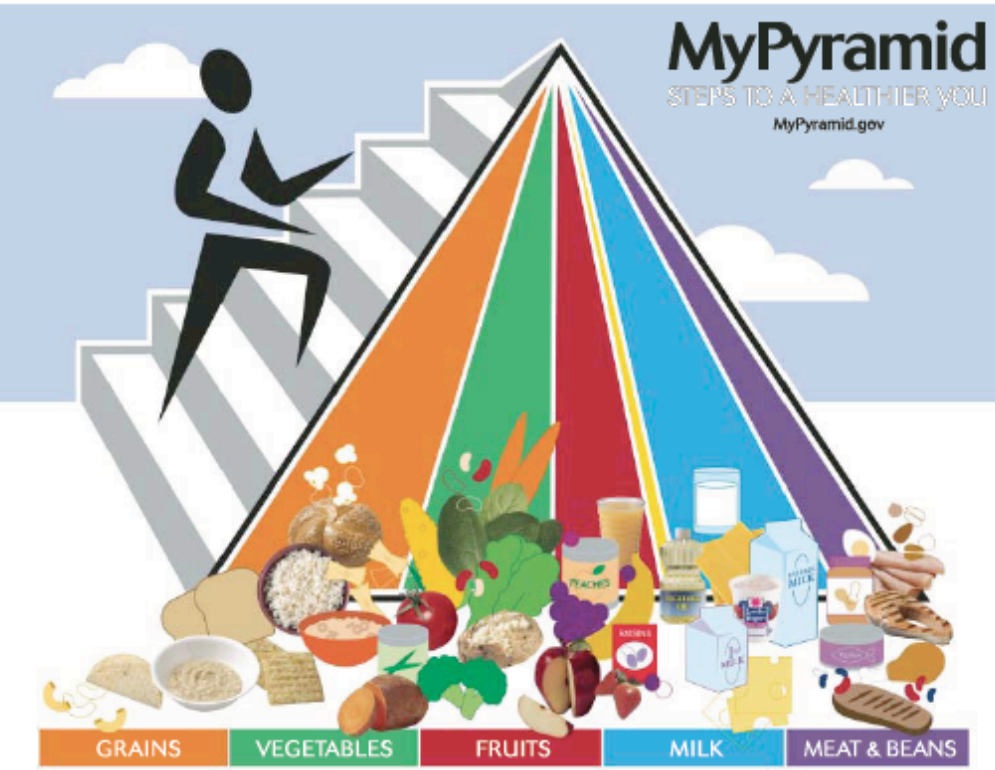


# Additional Resources

The U.S. Department of Agriculture's offers a good resource at [www.mypyramid.gov](http://www.mypyramid.gov). The Web site offers tips on healthy eating and provides pertinent links. You can also use the "My Pyramid Plan" to tailor nutritional plans to the swimmers individual needs.



USA Swimming also offers a "Nutrition Tracker" database which is an on-line tool that calculates a swimmers' nutrient needs, based on age, gender, current body weight and daily training schedule. Swimmers must be members USA swimming to access "Nutrition Tracker."



Kingfish Swim Team

# Nutrition Guide





If swimmers in our program are seeking to achieve their potential (some at the highest levels) then you need to be at every practice (AM & PM). At practice the swimmers need to perform at the level deemed appropriate and necessary by the coach. For this cycle to happen successfully and be repeated, then the quality and commitment to nutrition needs to match the commitment to practice and intensity. In our collective program this is definitely not happening and must be an area of focus for our athletes and parents.



## Observations

1. A large portion of the swimmers I have encountered on team travel trips do not eat enough food (which is critical in replenishing energy stores).
2. The swimmers have an unhealthy reliance on foods that definitely have a high carbohydrate content but have embedded sugars, little fiber and too much fat (white bagels with cream cheese, breakfast sandwiches etc.).
3. There is more that the swimmers dislike or won't eat as opposed to what should be part of balanced nutrition (specifically fruits and vegetables).
4. The use of caffeine in the form of drinks, gum and candy. Caffeine is a stimulant and a banned substance with the World Anti-Doping Agency. It has no place in sport and definitely no place in a balanced nutritional plan with adolescent whether they are athletes or not.
5. Energy bars are used as substitutes to healthy eating rather than as a supplement.

Meals should be pretty balanced. I often find with adolescents they don't eat enough at breakfast and lunch and eat their biggest meal at dinner. While I understand the schedules of busy families, this is a critical imbalance. As such here are some guidelines.

## A Daily Meal Plan For Athletes

1. Be proportional in meal size. Dinner is not more important than breakfast and so on.
2. Plan ahead look for the quality of food choices; don't go for the easy option (i.e. Dunkin Donuts or McDonald's)

### Breakfast

This meal should be a high carbohydrate meal (60% content) that is high in fiber, low in sugar, fat and salt and contains important and necessary vitamins and minerals. Protein is not critical at this meal and most athletes will receive enough through milk intake.

### Lunch

Lunch should be a nutritionally mixed meal containing protein, a small amount of fat and adequate helpings of high-carbohydrate rich foods.

### Dinner

Dinner should also be a mixed menu (similar to lunch), however this meal should contain great quantities of each nutrient and more calories.





# What to eat on practice days

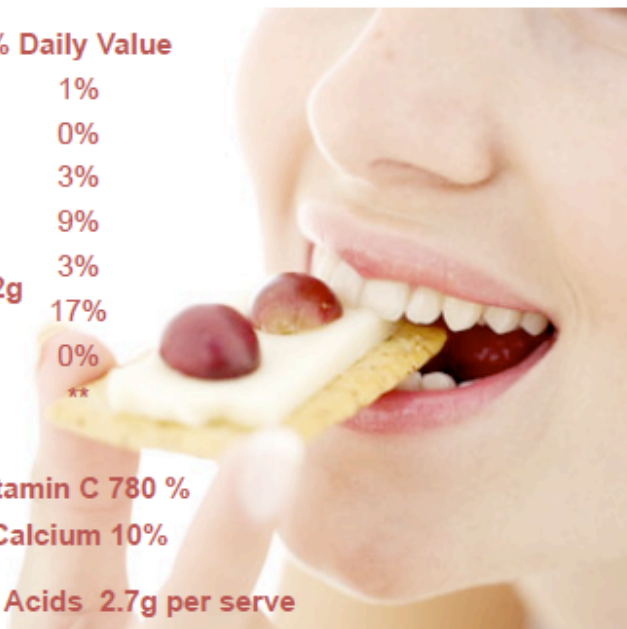
## Snacking

Appropriate snacking is critical for maintaining and replenishing muscle glycogen (energy). Blood glucose tends to fall within 2-3 hours after eating; consequently, eating more frequently than once every 5-6 hours should maintain it at a higher level so more can enter the muscle for storage. Furthermore, the rate of liver and muscle glycogen replacement will be increased when swimmers eat within the optimal time frame after practice.

Snacks should include fruits, fruit juices, vegetables, grains and cereal products. Some of the high-carbohydrate products that are produced and sold in liquid, powder and bar forms also make good meal snacks. When deciding on what it best use the following as a guide.

## Snack Guide

	% Daily Value
Total Fat 1g	1%
Saturated Fat 0g	0%
Cholesterol 10mg	3%
Sodium 210mg	9%
Potassium 120mg	3%
Total Carbohydrates 52g	17%
Dietary Fiber 0g	0%
Sugars 40g	**
Protein 13g	
Magnesium 60%	Vitamin C 780 %
Vitamin E 1330%	Calcium 10%
L-Glutamine 420mg	
Branched Chain Amino Acids 2.7g per serve	



## What to Eat Before Practice

Consuming 100-400 grams of some high carbohydrate substance in a solid form or 150-200mls (4-8 ounces of a high carbohydrate drink within 1-2 hours of practice should be sufficient to increase an athletes' subsequent work output)



## What to Eat During Practice

Research has shown consistent and significant improvements in work output when subjects have consumed high-carbohydrate drinks during exercise. This is because ingesting these drinks periodically while training maintains blood glucose at a higher level. Thus there is more available for the muscles allowing them to maintain their glycogen concentration longer. The result is that athletes are able to train more intensely during more of each practice session. This has the most benefit later in the practice. Also try to select fluid replacement drinks that have as close to the estimates in the above graph. An important note is that swimmers need to consume approximately 50-70 grams of carbohydrate each hour to maintain their blood glucose at a high level during practice. Most commercial sports drinks contain 15-20 grams of carbohydrate per glass. Consequently, they should be drinking the equivalent of one glass every 30 minutes.

**Does your swimmer come to practice with enough to drink?**

## What to Eat After Practice

This is an area that is probably the most important because it is the most overlooked. The body is most ready to absorb glycogen within the first 15-30min after practice. This can sometimes be stretched out to an hour but athletes will recover faster and subsequently be ready for the next practice if they ingest (in liquid form) the right blend of carbohydrate, protein, magnesium, calcium and essential branch chain amino acids at this time. There are a number of different drinks on the market but the one I recommend is still EnduroxR4 (see linked article above). If you don't like the taste, Cytomax, Muscle Prep, ProObtibal, Metabolol II and Physique are all products that have been specifically designed to maximize post workout replenishment. However, the table above gives another good guide as to the proportions of what is needed for good replacement.

# Competition Eating

## Pre-Competition Meal

The sensible pre-meet meal should be small and easily digestible as the pre-meet meal has little in regards to improving performances. The meals that athlete eats 1-3 days prior to competition are actually more important because that is the food that will be stored as muscle glycogen and then used for energy during the competition. The purpose of competition eating is to keep "topping-off" the glycogen stores so the swimmers have sustained energy for all of their events.

It should contain 600-800 calories and most of the included calories should come from carbohydrates. Include about 100-150 grams of carbohydrates in the meal. The meal should be eaten approximately three hours before competition, although small meals and liquid supplements can be consumed later than this without ill effect.

## What to Eat if You are Competing Several Times a Day

This applies to swimmers who are competing in championship meets in prelim/finals format. The pre-meet guide above is sufficient for the beginning of the meet and appropriate snacking and hydration during the meet will "top-off" glycogen stores. In the case where a swimmer may be returning to the meet in several hours for a final competition, they should eat a small, high carbohydrate meal as soon after the morning competition as possible.

The meal should contain 500-800 calories in high-carbohydrate form (100-150 grams) and if possible should be high on the glycemic index (meaning they are absorbed by the body faster).



### Pre Meet Breakfast Suggestion

- ◆ 1 bowl of dry cereal with skim milk
- ◆ or 2 pancakes with syrup
- ◆ or 1 waffle with syrup  
(easy on the butter)
- ◆ 1 glass of juice
- ◆ 1 English muffin or toast with jelly.



### Pre Meet Lunch Suggestion

- ◆ 1 Turkey sandwich
- ◆ or fish sandwich
- ◆ or 1 bowl of soup with whole grain bread
- ◆ 1 baked potato (easy on fatty toppings)
- ◆ 1 glass of juice
- ◆ 1-2 glasses of water.



### Pre Competition Swim Meal

- ◆ Keep it simple (don't try anything new)
- ◆ Keep it light, your big meal should have been 2-3 hours before the start of meet
- ◆ Piece of fruit or small fruit salad
- ◆ Fruit juice
- ◆ Water
- ◆ 1 piece of whole wheat toast or 1/4 whole wheat bagel with honey