Swimming Diet Information*

A swimmer's potential is established by heredity and realized through proper training. Good nutrition is the element that can make that realization possible or prevent it from happening. The food we eat supplies the fuel to keep our body's engine running through exercise. Like a car, the body must have enough fuel to take it where we want it to go. However, it is not enough to simply have a full tank of fuel. The fuel must contain the best possible combination of ingredients so that the engine runs as efficiently as possible and does not break down before the trip or race is completed. In other words, athletes require enough fuel to keep their body functioning, and that fuel must be of high quality so that their body performs well.

The typical diet in may cultures is too high in fats and too low in carbohydrates to meet the energy needs of swimmers in training. Also, much of the food comes from fast food chains or school cafeterias, where sizable portions of vitamin and mineral contents have been lost in preparation.

Some athletes think that they can make up for poor nutrition with dietary supplements. I am amazed at the swimmers who eat donuts and drink coffee rather than eat cereal and juice for breakfast and than will pop a high-protein tablet or vitamin pill. Some athletes believe false advertisements for "SUPER FOODS" that claim to enhance performance. They soon find out that they are wrong. Claims are made faster than they can be proved! Product names are changed faster than we can keep track of the changes. This leaves the athlete easy prey to these companies who benefits have never been proved or disproved.

NUTRITIONAL NEEDS

Carbohydrates, fats, protein, water, vitamins and minerals constitute the categories of nutrients needed by all persons, including athletes.

<u>CARBOHYDRATES</u>

Carbohydrates are the foods that are most easily digested for storage as fuel in the muscles and the liver. Since this is so, they provide the most readily available source of energy or fuel for training and competition. Most of the carbohydrates that we eat should consist of starch forms: breads, grains, pasta, and starchy vegetables such as potatoes and beets. The eating of sugar forms such as baked goods, candies, and carbonated beverages should be reduced considerably (especially candy and carbonated beverages such as pop). Sugar provides just as much carbohydrates as starch, but it usually contains fewer vitamins and minerals. Additionally, sugar forms of carbohydrates tend to cause a rapid increase in blood glucose followed by a greater drop a short time later that causes a feeling of great tiredness; yet, the starch forms of carbohydrates produce a slightly smaller but much longer lasting blood glucose increase that maintains a higher level for a longer period.

Athletes need to consume between 2000 and 3200 calories per day in the form of carbohydrates.

FATS

Fats are important nutrients that perform many necessary functions in the body. Fats are needed for rebuilding cell membranes, skin and nerve fibers. They are also involved in the production of certain hormones. The fat-soluble vitamins A, D, E, and K are transported in combination with fats. Fats are also a major source of energy for living. They provide almost 70 percent of the total energy we use at rest.

Athletes need between 450 to 950 calories of fat per day depending on age, size, and time spent training. This amounts to between 15 and 20 percent of their total calories consumed per day. Most Americans consume between 40 and 50 percent of their daily calories in the form of fats. Most of the fats that an athlete consumes should be in the form or unsaturated and polyunsaturated fats. Many swimmers need to cut their fat consumption in half to reduce their intake to the recommended range. This means fewer deserts, less ice cream, and a reduction in red meat and candy.

PROTEINS

There are several reasons why proteins are important. Muscle tissue is composed of protein. Hemoglobin, the oxygen-carrying substance in the blood is also composed of protein. Proteins are very important to the body. Meat, fish, poultry, eggs, and milk are important sources of proteins as they are complete proteins. Swimmers need to take in 400 to 800 calories in proteins daily to meet their needs. More will not produce better results. If athletes eat too much red meat they will probably consume too much saturated fat, this is not good for now or later. Protein intake should be increased by consuming more fish, poultry, eggs, milk, peas, or beans. If you wish to use a supplement, an amino acid supplement can be used. For an example an 8 oz. glass of milk has a similar amino acid content to 2 oz. of red meat, and 1/2 cup of peas or beans is equivalent to 1 oz. of red meat in protein content.

WATER

We usually take water for granted. However, next to oxygen, it is the most important substance that we consume. Approximately 60 percent of our body weight is made up of water. Water makes most of our life processes possible. Some of its functions include transportation of substances from one part of the body to another. It provides a cooling effect and it helps to lubricate the joints. As a general rule swimmers should drink 6 to 10 glasses of water or other liquids such as fruit juices and milk per day.

VITAMINS

While vitamins do not furnish energy or build tissue, vitamins serve an important role in these processes. Vitamins can not be made in the cells of the body. Therefore, they must be consumed on a regular basis either in a well balanced diet or in a supplement form. Vitamins are classified in two groups or forms: water soluble or fat soluble. Water soluble vitamins are not stored in the body. They are taken in body fluids to sites where they are used if needed, with the excesses excreted by the body daily. B complex vitamins and vitamin C are water soluble vitamins. Fat soluble vitamins are also transported to body sites where they are needed, however, excess amounts are stored in fat tissues, sometimes for years. Vitamins A, D, E, and K are fat soluble.

MINERALS

Our bodies contain over 20 minerals, 17 of which are considered essential to life. Minerals that we know are important to us are calcium, phosphorus, potassium, sodium, chloride, and magnesium. Deficiencies of certain vitamins and minerals can adversely affect performance. There are indications that the average American diet does not contain adequate amounts of certain vitamins and minerals. This is probably due to the tremendous increase of meals being eaten at fast food restaurants, where much of the vitamin/mineral content is removed during preparation. The quality of food in these restaurants is frequently low despite claims to the contrary. Furthermore, many use cereal fillers that add bulk and calories, but not nutrition. (Be wary of school cafeteria food.) With this thought in mind, I would like to encourage a vitamin-mineral supplement to be used for at least the last few week of the season.

The vitamins and minerals that athletes need in greater than normal amounts are the B-complex vitamins, vitamin C, iron, zinc, chromium, manganese and selenium. With this in mind a good vitamin supplement should contain most of the B-complex vitamins particularly thiamin (20-25 mg.), panththenic acid (10-15 mg.), as well as the rest of the B-complex in a 2 to 6 mg. dosage. There is no need to supplement the diet with more than 100 to 150 mg. of vitamin C, despite all the publicity it has received.

Fat soluble vitamins should not be supplemented as they are stored in the body and are usually consumed in adequate amounts. Choose a supplement that has minimal amounts of A, D, E, and K. Remember that large amounts of these vitamins can cause illness or other problems. Based on most information, the eating habits should decrease the amount of fats eaten on a daily basis, slightly increase the amount of proteins taken in daily and greatly increase the amount of starchy carbohydrates taken in. They should also increase their fluid (water, juice, milk, or nutritious liquid) to 6 - 10 glasses per day (one glass = 8 oz.).

IDEAS FOR MEALS FOR 3 TO 4 WEEKS OUT FROM FINAL BIG MEET

BREAKFAST

- One large glass of juice (whole juice, not Tang or fruit drink)

- Cereal and milk (2% or non-fat) and/or eggs or pancakes
- 2 slices of toast (with margarine and jelly, if you want)
- One glass of 2% or non-fat milk

On days of morning workout drink one glass of water prior to getting in the water. On days of no morning workouts drink one glass of water before leaving for school. **NOTE: It is important to drink water or preferably juice at 30 minute intervals during workouts.** After a morning workout it is necessary to eat something again, either muffins, graham crackers, or cereal with milk (2% or non-fat) along with some juice.

LUNCH

- One or two large sandwiches, perhaps with turkey or chicken for the meat on at least on sandwich (lettuce or tomato on sandwich is good)
- Carrots or other fresh vegetables
- Fresh fruit at least twice a week with lunch, preferably every day
- Graham crackers or low fat yogurt
- At least one glass of 2% or non-fat milk **coupled** with some juice

Prior to afternoon workouts, drink at least one glass of water or juice and have some graham crackers, pretzels, or even rice krispe treats.

DINNER

- Some type of meat (see Food Group section below)
- Vegetables (preferably fresh or fresh frozen veggies)
- A salad with low fat dressing
- Bread or rolls with margarine and/or jelly
- Fresh fruit for desert
- One or two glasses of 2% or non-fat milk

SNACKS

Juice and/or 2% milk with cereal, fresh fruit, low fat yogurt, or pretzels.

Note: We are recommending 2% milk or non-fat milk, low fat yogurt, and plain graham crackers. Peanut butter sandwiches are not recommended more than twice a week. Chicken or turkey is the preferred lunch meat or low fat lunch meat. The following is a list of foods high in carbohydrates, they should be eaten in PREFERENCE to candy, bakery products, or pop:

Bread, muffins, bananas, baked beans, peaches, oranges, macaroni, non-fat milk, potatoes, orange juice, pretzels, pineapple, chow mein, bagels, cereal, apples, pineapple juice, crackers, apricots.

THE FIVE FOOD GROUPS

GROUP	FOODS INCLUDE	SUGG. DAILY SERV.	NUTRIENTS
Cereals & Grains	Wheat, barley, corn, oats, rice, bread, cereals, macaroni, pasta, grits.	6 to 15 servings (a serving equals 1 slice of bread or a 1/2 cup of cereal, spaghetti, etc.)	Carbohydrates, protein, iron, thiamin, riboflavin, and niacin.
Fruits	Apples, pears, figs, bananas, oranges, pineapples, grapes, and juices.	2 to 6 servings (a serving equals 1 medium apple, orange, etc. or 3/4 cup of juice.)	Carbohydrates, vitamin A & C, folacin, and various minerals.
Vegetables	Lettuce, broccoli, green and yellow beans, peas, carrots, potatoes, and corn.	3 to 7 servings (a serving equals 1 cup of raw leafy greens or 1/2 cup of other kinds of veggies.	Carbohydrates, protein, vitamins A, C, B-complex, folacin, and various minerals.
Milk and Milk Products	Milk, cheese, yogurt, ice milk.	2 to 4 servings (a serving equals 1 cup of milk or yogurt or 1 1/2 oz. of cheese.)	Protein, fat, calcium, riboflavin, and vitamin D.
Meat, Poultry, Fish and other High Protein Products	Beef, pork, veal, lamb, game, fish, poultry, shellfish, eggs, peas, beans, lentils, nuts, and peanuts.	2 to 4 servings (a serving equals 3.5 oz.)	Protein, fat, thiamin, iron, niacin, and riboflavin.

[*] The articles author, Jim Tonkovich, is currently the Head Coach of the Lake Central High School boys and girls swim teams and is also the Senior Head Coach of the Lake Central Barracudas.