

# Arsenal Tech High School

Proper Nutrition for Success



Sports Nutrition Manual

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## Preface

Nutrition is the one component of strength and conditioning programs that most people are misinformed or don't understand. Everywhere you turn you hear or read about an athlete who has gained or lost twenty pounds in one week. This type of information is misleading and dangerous. As athletes, you must be able to separate the facts and fiction of dietary habits in order to perform at your optimum level. You cannot run a high performance engine, you, on fast food and Mountain Dew.

The following information was obtained from the *American Dietetic Association, The Cooper Institute, certified sports nutritionists and the Food and Drug Administration*. **These are merely samples; if you wish to have a personalized diet you should consult a registered dietitian or certified sports nutritionist.**

## Balanced Diet

Every athlete should eat a well balanced diet. A balanced diet should consist of eating sixty to sixty-five percent carbohydrates, fifteen to twenty percent protein and ten to fifteen percent natural occurring fats. The majority of one's carbohydrates should come from fruit and vegetable sources. The majority of one's energy supplied by fat should come from unsaturated fats, those that remain liquid at room temperature. Finally the majority of protein intake in one's diet should come from chicken, fish, beans and lean red meats.

### **Complex Carbohydrates**

Breads  
Cereals  
Fruits  
Grain Products  
Pancakes  
Pastas  
Rice  
Rolls  
Vegetables

### **Fats**

Bacon/Sausage  
Butter  
Cheese  
Fried Foods  
Ice Cream  
Oils  
Red Meats  
Whole Milk

### **Proteins**

Beans  
Fish  
Meats  
Poultry

## Do Not Skip Meals

It's important to maintain food intake at constant levels throughout the day. Your weight regulation mechanism in your body is referred to as your set point. Skipping meals to lose weight is counterproductive and actually slows your body's metabolism down. Thus, if your goal is to lose weight then it is imperative that you eat five to six small meals per day. A meal may include a turkey sandwich and a bag of carrots or a piece of fruit. You can wash all of this down with a glass of milk or water. The key here is small portions. A portion should be about the size of your fist. This will increase your metabolism thus decreasing the amount of calories that you store as fat. On the other hand if you are trying

to increase your weight it is best to eat three good-sized meals every day and supplement these meals with one to two snacks. One key factor that many athletes do not understand is that your *body can only absorb a certain amount of nutrients at one time*. So it is imperative that you constantly fuel your body.

## Food Preparation

The way you prepare your foods is just as important as the food selections themselves. Vitamins and minerals can be lost by boiling too long, it's much better to steam a vegetable! Here is a list of ways to prepare your foods; they are listed in alphabetical order;

### Best

Baked  
Barbequed  
Blanched  
Boiled  
Grilled  
Poached  
Smoked  
Steamed

### Good

Braised  
Broiled  
Roasted  
Rotisserie  
Simmered  
Stewed

### Worst

Deep Fried  
Pan Fried  
Sautéed

When it comes to choosing specific items for each meal it really depends on what you like, where you are and the amount of time you have to eat. Here is a list of items to consider when making those choices;

## Breakfast

- Pancakes, waffles or French toast with syrup – no butter
- Egg sandwich – no cheese
- Unbuttered English muffin, bran muffin, toast with preserves (jelly or fruit) butters.
- Bagels with preserves, jelly or apple butter.
- Low-fat milk or yogurt with fresh fruit and a bagel
- Dry or cooked cereals with or without milk or dried fruit
- Low-fat granola bars – Kellogg's or Nature Valley
- Pita Bread stuffed with peanut butter (high Calories) raisins, cottage cheese, veggies or low fat cheese.

## Lunches

- Vegetables or chili stuffed potatoes
- Salad bars: use low fat dressings, dried beans, carrots, pasta and add crackers, rolls or bread.
- Pack lunches: Sandwich with whole grain bread, fruit, fig bars, vegetables or soup
- Pastas with meat or meatless sauces
- Tacos without sour cream
- Baked or broiled meats instead of fried

## Dinners

- Emphasis on starches; rice, pasta, potatoes and vegetables
- Meats should be baked, broiled or grilled instead of fried
- Pasta with clam sauce or marinara sauce
- Shellfish in tomato sauce or steamed with butter
- Chicken breast without the skin with rice or vegetables
- Stir fry dishes with lean meat and lots of vegetables in minimal oil
- Grilled salmon, tuna or swordfish with baked potato and vegetables

## Snacks

- |                        |              |
|------------------------|--------------|
| • Whole grain crackers | Pretzels     |
| • Graham crackers      | Dry Cereal   |
| • String cheese        | Fresh fruits |
| • Low-fat yogurt       | Dried Fruits |
| • Dry-roasted nuts     | Fruit Juices |
| • Bread Sticks         | Bagels       |

## Helpful Tips

- Eat more fruits and vegetables.
- Limit fast food intake or make healthy fast food choices.
- Drink more water.
- Limit your pop, candy, desserts, alcoholic beverages and other simple sugars.
- **Do not eat any fried foods.**

## Lower Fat Selection

- Buy lean cuts of meat
- Trim off excess fat
- Don't fry foods-bake, broil, poach, steam
- Use fats sparingly - oil, butter mayonnaise
- Use skim or low fat milk products
- Choose low – fat salad dressings

**Watch the Caffeine** – It lowers blood sugar and can make you hungrier. It is also a diuretic and could result in dehydration.

### Time Saving Tips:

- Cook double batches of pasta, rice, noodles and potatoes
- Store in plastic bags and reheat by plunging into boiling water for a minute
- Reheat the baked potatoes in the microwave
- Use frozen veggies to stir fry, top a baked potato, add to canned soup with rice, potatoes or noodles
- Use packaged rice or noodle dishes and add veggies to boost nutritional values
- Buy black beans, mix with salsa and serve with tortillas with grated cheese
- Buy canned meats such as chicken, salmon or tuna for time savers
- Buy already prepared vegetables at a salad bar
- Do stir fries with or without meat and add some beans (white or black)

### Best Restaurant Choices (Lowest in Fat)

Fortunately for us it has become easier to eat healthy while we're out on the road. With restaurants forced to keep up with a changing society they have added heart healthy choices for us instead of the traditional burger and fries. Here are a few;

- Appetizers: Juice, fruit, crackers, shrimp cocktail or vegetables with salsa
- Breads: Any without butter or margarine
- Soups: Broth based, vegetable, bean, minestrone (creamed are high in fat)
- Salads: Dressing on the side (low fat or fat free), watch the extras (bacon bits)
- Seafood or Poultry; Baked, roasted, broiled or poached. Request that it be cooked in wine, tomato juice, lemon juice or a little olive oil
- Beef: Trim all the fat. Request gravies or sauces on the side
- Potatoes: Limit what goes on them. Request salsa, barbecue sauce, light ranch
- Pastas: With marinara sauce or broth based clam sauce
- Rice: Steamed if possible
- Vegetables: Request steamed, boiled or stewed served with lemon, herbs
- Dessert: Sherbet or sorbet, fruit, frozen yogurt, or ice milk

### Bread, Cereal, Rice, & Pasta Group: 6 to 11 Servings

This group is at the base of the pyramid, demonstrating that the majority of the daily recommended allowance for foods should be chosen from this section. These foods are high in complex carbohydrates, which are the body's favorite fuel. After carbohydrates are digested, energy in the form of glucose is circulated in the blood. The liver and muscles also store glucose for later use for physical activity. This food group also provides other important nutrients such as vitamin B-complex which helps your body form red blood cells and aids the body in using proteins. Whole grains add necessary bulk to the digestive tract to aid in elimination of wastes.

**Choose Often**

Bread, Bagels, Pita  
Muffins, Biscuits or  
Rolls  
Cold Cereals <2G of fat  
Hot Cereals  
Corn Tortillas  
Air Popcorn  
Unbuttered, Pretzels,  
Rice Cakes  
Pasta, Rice, Barley  
Crackers <g of Fat

**Choose Sometimes**

Flour Tortillas  
Egg Noodles  
Crackers  
Cold Cereals High in sugar  
Egg, Breads, Pancakes  
Waffles, Muffins  
Biscuits, Rolls 2-5 g of fat

**Choose Rarely**

Croissants, Muffins,  
Biscuits  
Oil-Popped and  
Buttered Popcorn

**Vegetable Group: 3 to 5 Servings**

Vegetables provide many of the vitamins and minerals we need to release energy from proteins, carbohydrates and fats. In addition they build strong bodies, regulate heartbeat and pass messages along the nerves. They also contain substances called antioxidants that help to fight illness, disease and fiber to assist in waste removal. Ideally vegetables should be steamed, microwave or eaten raw. Boiling vegetables is OK, but some of the vitamins and minerals will end up in the water.

**Fruit Group: 2 to 4 Servings**

Fruits are especially good sources of important vitamins like A and C. Vitamin A is important for healthy skin, eyes and hair. Vitamin C helps your body absorb calcium and phosphorus and use them for healthy bones and teeth along with muscle and nerve functions. Fruits are best when consumed raw.

**Milk, Yogurt & Cheese Group: 2 to 3 Servings**

This group is an important source of vitamin A, D and protein. Proteins main functions are to repair and maintain body tissues, produce hemoglobin to carry oxygen to cells, produce antibodies, enzymes and hormones.

**Meat, Poultry, Fish, Dry Beans, Eggs & Nuts Group: 2 to 3 servings**

Protein in the body is made from the building blocks called amino acids. Proteins main functions are to repair and maintain body tissues, produce hemoglobin to carry oxygen to the cells, produce antibodies, enzymes and hormones. Some of the amino acids in protein are produced by the body, while others are obtained in the diet.

**Choose Often**

Beef: Top Round  
Beef: Eye of Round  
Pork: Tenderloin  
Skinless Chicken  
Egg Whites  
All dried beans, peas  
Canned fish in water  
Turkey Breast

**Choose Sometimes**

Beef: Bottom  
Beef: Sirloin  
Beef: Pot Roast  
Beef: Tenderloin  
Beef: T-Bone  
Beef: Flank  
Pork: Sirloin Chop  
Egg Substitutes

**Choose Rarely**

Beef: Porterhouse  
Beef: Liver  
Corn Beef  
Hot Dogs  
Salami, Bologna  
Bacon, Sausage  
Fried Chicken  
Whole Eggs

**Fats, Oils, and Sweets Group: USE SPARINGLY**

Fats and oils are essential nutrients to maintain body function but should be used sparingly. Fats help the body absorb vitamins A, D, E, K and beta-carotene. Aim for a fat intake of 25 percent or less of total daily food intake. Saturated fats (butter, beef fat) should be limited to 10 percent or less of the total fat. Unsaturated fats (corn oil) and monounsaturated fats (olive and canola oil) are healthier choices.

**The Grocery List**

I have compiled a list of foods to concentrate on while at the grocery. These foods are high in vitamins, minerals, and come from the five food groups. This doesn't mean you have to eat only items from here but this will start you down the right path towards eating like an athlete should. The list is on an Excel spreadsheet and you can print this off along with the daily food eating schedule to help organize your day.





## Hydration

Water is the most critical nutrient for growth, development, and overall health. It is the most abundant nutrient in your body, and is the medium through which all energy reactions take place. Water is needed for digestion, absorption, circulation, excretion, maintenance of body temperature, and functioning of every cell. ***Proper hydration is critical.*** All athletes should drink plenty of water before, during and after practices, games and weight training.

You should drink at least one liter of water approximately two hours prior to any athletic competition. Without proper hydration you may become fatigued sooner, become nauseas, and suffer heat exhaustion or even heat stroke. The following chart shows how the body is affected through increasing levels of dehydration.

- 1-2% Thirst and weakness
- 3-4% Low performance, dry mouth
- 5-6% Increased body temperature, headache and irritability
- 7-10% Dizziness, disorientation, heat stroke & even death

Remember, 70% of your muscle tissues are water. Water is fine, but for intense exercise lasting longer than one hour, sports drinks may be a better choice (**water is our most important nutrient, not Gatorade**). Upon completion of exercise, 20 -24 ounces of fluid should be ingested for every pound of body weight lost (remember you did not lose three to five pounds of fat in one exercise session, the weight you lost immediately was water weight, **REPLACE IT**).

## Pre-Game and Practice Meals

You should make sure to plan out these meals since they are the most important meals of your day as an athlete. Timing along with the proper food choices may make or break your physical performance on the field or in the weight room.

- Allow enough time for digestion. Eat at least three hours before an event.
- Choose a meal that's high in starch. It's easy to digest and helps steady the levels of blood sugar.
- Consume only moderate amounts of protein. Protein foods take longer to digest than a starch. They may lead to increased urine output, this leads to dehydration.
- Limit fats and oils, they take too long to digest.
- Restrict sugary foods, this can cause rapid energy swings in blood sugar levels and result in low blood sugar and less energy.
- Avoid items that contain caffeine. This stimulates the body's urine output, leads to dehydration.
- Try to stay within these guidelines with the foods you like to eat.
- Drink plenty of fluids with your pre-game meal, this helps with digestion and hydration!

## Sample Pre-Game Meals

### **Meal 1**

Cereal (avoid sugary cereals)  
Banana  
Milk (low fat or skim)  
Toast/jam  
Pineapple juice  
Water

### **Meal 3**

Chicken Noodle Soup  
Crackers  
Orange  
Low fat yogurt  
Water

### **Meal 5**

Poached egg  
Toast/jam  
Milk (low fat or skim)  
Orange juice  
Water

### **Meal 7**

Pancakes (limit syrup & butter)  
Applesauce  
Milk (low fat or skim)  
Water

### **Meal 2**

Turkey Sandwich/bread & lettuce  
Apple  
Milk (low fat or skim)  
Tomato Juice  
Water

### **Meal 4**

Cottage cheese  
Bread sticks  
Milk (low fat or skim)  
apple juice  
Water

### **Meal 6**

spaghetti/tomato sauce  
bread  
Milk (low fat or skim)  
Orange juice  
Water

### **Meal 8**

Apple sauce with oats mixed in  
toast with jam  
Milk (low fat or skim)  
Water

## Weight Reduction Basics

This comes down to a simple mathematical formula (along with determination). For every 3500 calories burned above your basic metabolic rate (the amount of calories to survive) you lose 1 lb. of fat. This 3500 calories burned can come from a reduction of food, increased exercise and/or any combination of both. Losing weight through exercise alone is a very inefficient method. You burn approximately 100 calories per mile you run. Therefore you would need to run 35 miles to lose one pound of fat or 350 miles to lose ten pounds of fat. Any additional weight loss would come from lean tissue (muscle) and water. A combination of exercise and food reduction is the most sensible approach. If you reduce your current diet by 500 calories a day and do 30 minutes of aerobic activity per day you will lose 1 to 2 lbs. of fat per week.

Finding the perfect diet for your lifestyle is difficult enough, add to that a society where fried food is more prevalent than baked, sedentary is more common than active, and fast food is the norm. At this point it should be easy to see both the why and the how's of a 2-prong approach to weight lose will be required. In terms of the athletics we need to be 3 things; we need to be at a weight that is beneficial to our sport, as powerful and quick as possible. To achieve these three seemingly incompatible things requires the right diet to support the right training. As an athlete reading this, the 4 biggest factors to consider are the following: your sport, your metabolism, food type, and protein intake.

Begin by eating not three large meals each day, but rather small meals (palm size or so) every three hours throughout the day. This will help to prevent your body from shutting down between meals when it thinks it is starving and not burning the calories off that you need to drop weight. Another secret to try is never allowing yourself to go back for seconds; theoretically this could cut up to 300-500 additional calories per meal per day from your diet. Also take a full 10 or 15 minutes to consume the meals that you have in front of you and then sit for at least another 5 minutes to allow yourself to start to "feel" full. This gives the hormones involved in the negative feedback process (i.e. leptin) time to reach the brain and signal that you are no longer hungry.

## Weight Gain

### **IT'S SIMPLE: YOU MUST TAKE IN MORE CALORIES THAN YOU BURN OFF!**

- Eat more frequently! It's easier for your body to store more calories, if you eat more often.
- Increase the calories in the foods chosen. Try to eat a quarter more at each meal or snack.
- Pick high calorie food items each time you eat.

# Supplements

**These are merely *samples*; if you wish to have a personalized diet you should consult a registered dietitian or certified sports nutritionist.**

## Vitamin and Mineral Supplementation

If your diet is not balanced or you're in training for an athletic competition then a vitamin-mineral supplementation will prove beneficial. Get on a good one and stay on it. Most supplement companies make some kind of vitamin pack that has mega high doses and usually includes a pack of about 6-7 pills to be taken once a day. Beverly International's Super Pack is one of these; you can take this for 30 days followed by just a simple multi-vitamin like One-a-Day the next month. If you decide to go with just a multi-vitamin (which in all honesty is probably plenty) just be sure of two things.

1. You buy a brand name and not a generic or store brand as more often than not they have exceedingly low quality.
2. Males should make sure it has the lowest concentration of iron you can get. I believe Men's One-a-Day has 0% iron in it. Extra iron in men can build up in their system and cause cardiovascular problems later in life, this is a fact!!!!

## Protein

Supplementing with protein is nearly a necessity for anyone serious about gaining lean muscle mass. By getting a good mix of both protein and carbohydrates (4 grams of carbohydrates to 1 gram of protein ratio) into your system immediately post workout is the best thing you can do for gains. Your body needs to immediately start the rebuilding process for your next training session which is probably going to come in less than 24 to 48 hours.

The recommended daily allowance (RDA) for protein intake for the normal adult is .8 to 1.0 grams/kg/day (ACE Ch. 4, pg.128, p. 2) which translate to about 100 grams/day for a 220 pound individual. To increase muscle mass as most competitors are looking to do during the season the recommendation jumps to 1.2 - 1.8 grams/kg/day of body weight, this would be about 125 grams/day (ACE Ch. 4, pg.129, p. 2). There are other factors that are involved when calculating total daily calorie intake. *We will be using the Harris Benedict Method, this takes into account the individual's height, body weight, age and their activity levels, with this formula there is a margin of error of + or - 10% (The Cooper Institute, pg. 208, p. 1).* Protein supplementation is an excellent way to fill the void between meals and to decrease how hungry you get.

I would recommend doing some research for a reputable protein manufacturer as most are not regulated by the FDA. Positive fluid intake must be maintained to decrease any excess pressure that may be placed on the kidneys due to supplementation (may it be protein, creatine, or whatever).

## Glucosamine / Chondroitin

This is taken by literally millions of people for arthritis and stiff joints who swear up and down that it works. Scientifically it depends on what study you look at as a new one comes out every month that contradicts the one before it. Osteo-Biflex is a great brand and one that I have read has 85-90% of its promised ingredients in each serving, many dealers aren't so outstanding in their quality, ***but do your own research.***

### The Use of Creatine - *What does creatine do?*

When you exercise you obviously burn energy. There are many things involved in this process. The energy you burn is called Adenosine Tri-phosphate (ATP). This molecule has very high energy bonds between the phosphate bonds and the rest of the molecule. Your body breaks these bonds releasing the energy for use and changing the molecule to adenosine di-phosphate (ADP). The purpose of taking creatine as a supplement is to help reform ADP into the usable ATP molecule, ***do your own research before taking any supplement!***

### **Reminder – Caution – Be Suspicious**

You should **ALWAYS** research any product you're contemplating on purchasing and putting into your body! The supplement industry is not regulated by the Food and Drug administration and you may be ingesting products that could harm you in the long run. Just because you see an ad for the newest and greatest thing doesn't mean it's safe or effective. The supplement market is a billion dollar a year industry, they are in the business to make money!

Supplements do not take the place of proper nutrition, they can help ***“SUPPLEMENT”*** your daily diet but they are not meant to replace what Mother Nature has provided! They are intended to help when you have to eat on the go, not enough time to prepare a full meal, or make up for your lack of vitamins and minerals because you don't like certain foods. Take the time to research your supplement choices and don't believe everything you see or hear.