PERFORMANCE NUTRITION

Book Includes:
Nutritional Overview, Nutritional Guidelines,
3 Winning Steps Shopping List, Pre and Post-Competition Nutrition,
Performance Foods on the Go, Nutritional Values Chart,
Glycemic Index Chart

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PERFORMANCE NUTRITION FOR THE ATHLETE

Nutrition is the key factor that often gets overlooked when trying to increase athletic performance. When we talk about strength and conditioning, we think weightlifting, jumping, stretching and running. Nutrition may be the leading aspect when trying to maximize athletic performance. A well-balanced diet can maximize your athletic potential, which has already been somewhat developed through long hours of training. By establishing a specific meal plan while training, you can increase your progress in the weightroom and on the field or court significantly. Proper nutrition is the variable that is the most difficult to adhere to. The current environment we live in has produced the largest obesity rate in history. With so many bad nutritional temptations (fast food, carbonated drinks) surrounding us every day, it takes an exceptionally disciplined athlete to stay on track.

The main objective of this book is to give the athlete an idea of what performance nutrition means and how to apply it to their everyday life. Eating healthy is not as difficult as it may seem. The ones that use this excuse are usually the ones that aren't willing to make sacrifices. Becoming an elite athlete involves taking risks and making sacrifices throughout ones athletic career. When it is all said and done, the best and most successful athletes are usually the ones that made those sacrifices and took those risks along the way.

In the grand scheme of things, performance enhancement is a minute detail in a person's life. What about their future as a husband/wife or even a father/mother? We all want to grow old and watch our children develop; promoting a healthy lifestyle to a young adult can help to increase their lifespan.

NUTRITION OVERVIEW

There are many factors that are incorporated into a sound strength and conditioning program. The three most important factors that will have a direct impact on maximizing athletic performance are:

Quality strength and conditioning program
Accurate diet
Proper rest

There are no short cuts to success; contrary to what you may believe, there are no magic foods or supplements that will generate fantastic gains. You can be following the best workout and still not experience the desired gains. Think of food as the body's fuel. The better the fuel, the better your body will perform.

These are 6 nutrients that are essential to body function.

Carbohydrates (energy) – primary source of fuel for the body's activities.
Protein (repair, rebuild) – necessary for tissue growth and development.
Fats (carrier of vitamins) – protects internal organs, serves as a carrier for fat-soluble vitamins.
Vitamins – act as regulators for body functions
Minerals (works w/ vitamins) – act a catalyst for muscle response, nerve transmission, and digestion.
Water (life) – the body cannot function without it.

CARBOHYDRATES

Carbohydrates should be considered your primary source of energy in a meal plan. Approximately 55-70% of your daily caloric intake should come from carbohydrates, with endurance athletes consuming the higher percentage of carbohydrates. An inadequate intake of carbohydrates can lead to weakness and fatigue. Your body may even start breaking down its own muscle to make glucose (carbohydrate) for energy.

There are 2 types of carbohydrates, complex (starches and fibers) and simple (sugars). Most of your carbohydrate needs should be met by consuming complex carbohydrates which include vegetables, whole grains (pasta, rice, bread, cereal) and beans. These foods usually have a lower glycemic index, which means they raise your blood sugar more slowly. These are ideal for pre-game meals as well as endurance events. No more than 10% of your carbohydrate calories should come from simple sugars. Fruits are a source of simple sugars but provide lots of essential vitamins and minerals.

FIBER

Fiber provides little or no energy (calories) but is still a necessary component of a good diet. A high fiber diet can lower your risk for developing heart disease and cancer. There are two types of fiber: soluble and insoluble. Soluble fibers help to lower blood cholesterol. Foods containing soluble fiber include beans, legumes, oat bran, oatmeal, corn bran and rice. Insoluble fiber helps to relieve or eliminate constipation which can be a very uncomfortable sensation. If you increase the fiber in your diet, be sure to increase your fluid intake, also.

FATS

Dietary fat provides a sufficient amount of energy during longer duration aerobic activities, such as swimming and running. It is also used during daily activities such as sitting in class, reading and sleeping. Although fats are generally considered to be “bad”, some fat in our diets is very important. Along with providing energy to the body, fat helps to protect organs, keep our bodies warm, carry and store fat soluble vitamins (A, D, E, K) and serve as building blocks for the formation of hormones.

THE DRINK OF CHAMPIONS

One of the most common mistakes athletes make is going into practice or competition when they are dehydrated. Dehydration decreases blood volume, increases body temperature, and leads to impaired performance. Performance starts to drop when as little as 1 to 2 percent of the body’s water is lost. When fluid losses are extreme, heat exhaustion, heat stroke and even death can result. Unfortunately, by the time you feel thirsty you may already be low on fluids. Dark colored urine may also indicate dehydration. Hydration is apparent when an athlete’s urine is a light yellow color. Don’t wait until you feel thirsty before increasing your fluids. Voluntary replacement of fluids is not sufficient and this method only replaces about one-half of what is lost in sweat. To prevent dehydration during competition try consuming water throughout the day leading

up to the competition. Drinking water immediately before an event is too little, too late.

PROTEIN

Protein is used to replenish and rebuild broken down muscle cells. Contrary to what you may believe, eating large quantities of protein is not good for the body. Protein in excess will only be stored as fat in the body and may also generate future health risks. The body should ingest approximately 15 to 20% of its daily caloric intake from protein.

Beef, chicken, fish are all great sources of protein that have a higher level of digestible protein. Try to avoid meats high in fat, and choose meats that have less "marbling". Nuts and eggs are also great sources of protein. Protein powders have a place in an athlete's diet, but it is extremely important that you understand that eating protein from natural food sources should always be the number one concern when assembling a balanced diet.

Below is a list of quality protein sources and the amount of protein each serving contains.

Food	*Serving Size*	*Protein (g)*
Brown Rice	1 Cup Cooked	5
Whole Wheat Bread	2 Slices	6
Oatmeal	1 Cup Cooked	6
Spaghetti Noodles	1 Cup Cooked	7
Baked Beans	½ Cup	7
Cheese	1 oz.	7
Milk	1 Cup	8
Peanut Butter	2 Tbsp.	8
Cottage Cheese	½ Cup	14
Yogurt	1 Cup	14
Scrambled Eggs	3	18
Canned Salmon	½ Cup	24
Lean Meat	3 oz.	24
Canned Tuna	½ Cup	26
Chicken Breast	3 oz.	26
Turkey Breast	3 oz.	26

WEIGHT VS. BODY FAT

Body weight can be misleading in determining your fitness level. Is your weight fat or muscle? A consistent resistance training program helps to increase lean body mass and aids in reducing body fat. Adding exercise to a healthy diet allows you to change your body composition by adding more lean muscle and losing fat. A person who loses weight with exercise will reduce body fat and add muscle but may become slightly "heavier" according to the scale. Don't get discouraged, this naturally occurs because muscle weighs more than fat. Your goal should be to maintain a percentage of 12-15% body fat if you are a male and 16-19% if you are a female. By reducing your body's fat levels you will look better, be stronger, more athletic, have more energy and most importantly feel better about yourself. Reducing weight is as simple as reducing your caloric intake by

approximately 500 calories daily. This should result in the loss of roughly 1 pound of fat each week. Some athletes desire weight gain, if weight promotion is the issue than eating 500 extra calories daily should result in the addition of approximately 1 pound a week.

To lose 1 pound of fat you need to burn approximately 3,500 calories. The easiest and safest method to burn 3,500 calories is to decrease your daily caloric intake by about 500 calories for 7 days. An example of this would be as follows: if you are eating 3000 calories a day on average, than you would eat 2,500 per day for 7 days to burn 1 pound of fat. In order to maintain lean muscle mass you should avoid losing any more than 2 pounds per week.

If you need to estimate the number of calories needed to maintain your weight you can use the following formula. The following formula is used to determine the Resting Metabolic Rate (RMR) of an individual. The RMR is the total number of calories needed to maintain one's current weight. Losing and gaining weight can be as simple as adding or subtracting 500 calories a day from the calculated RMR.

RESTING METABOLIC RATE (RMR)

1) Your weight in pounds ____ / 2.2 = ____
2) Your height in inches ____ x 2.54 = ____
3) 9.6 x # from step 1 ____ = ____
4) 1.8 x # from step 2 ____ = ____
5) 4.7 x your age in years ____ = ____
6) 655 + # from step 3 ____ + # from step 4 ____ - # from step 5 ____ = ____ (this is your RMR or resting metabolic rate)
7) Multiply your RMR by the appropriate activity factor:

If you are sedentary (do little or no activity): RMR x 1.2
If you are slightly active (you perform light exercise/sports 1-3 days a week): RMR x 1.375
If you are moderately active (you perform moderate exercise/sports 3-5 days a week): RMR x 1.55
If you are very active (you perform strenuous exercise/sports 6-7 days a week): RMR x 1.725

RMR ____ x activity factor ____ = ____ (this is the minimum number of calories you need each day to maintain your present weight.)

8) # from step 7 ____ - 500 = ____ (this is the minimum number of calories you need each day to lose 1 pound a week.)
9) # from step 7 ____ + 500 = ____ (this is the minimum number of calories you need each day to gain 1 pound a week.)

BASIC GUIDELINES

Eat 5-7 small meals daily. By doing this you will increase your metabolism which helps burn excess fat as well as rebuild broken down muscle cells.

Eat a wide variety of foods.
You need this variety to satisfy your body's nutrient needs. If you restrict your diet to a few certain foods, you will not meet your body's need for energy, vitamins and minerals.

Choose a diet with plenty of whole grains, vegetables and fruits.
They tend to have greater nutritional value and less sodium and fat than processed foods. Fruits and vegetables also contain other nutrients that may help reduce the risk of many chronic diseases.

Do not skip a meal; bring snacks with you to class. Small snacks are things like energy bars, bagels, fruits, etc.

Try to consume some type of liquid protein/carbohydrate drink immediately after workout (MET-RX). A liquid is much easier for the body to digest and therefore helps replenish and rebuild broken down muscle cells quicker.

Learn how to read labels when buying groceries.
Keep in mind that there is no such thing as a "bad" food as long as it is eaten in moderation. Even chips and cookies are OK once in a while! Just be sure that the bulk of your food intake consists of nutrient-rich foods.

SERVINGS AT VARIOUS CALORIE LEVELS

	1600	2800	3600	5000
BREAD, RICE, PASTA	6	11	14	18
VEGETABLE	3	5	7	10
FRUIT	2	4	5	7
MILK, CHEESE	2	3	4	6
MEAT, EGGS, FISH	5 oz.	7 oz.	9 oz.	14 oz.
ADDED FATS & OILS	25 g	32 g	42 g	49 g
ADDED SUGARS	11 tsp.	18 tsp.	24 tsp.	28 tsp.

*This chart represents a high carbohydrate, low fat diet. As you can see, the servings become unreasonable at 5000 calories. It's hard for even the biggest "eating machine" to down 17 servings of vegetables and fruits in a day. Usually athletes who require higher calorie diets eat more fats, oils and sugars to get the extra calories.

WHAT IS A SERVING?

A serving is not necessarily a helping. A helping is the amount you eat. A helping is much bigger than a serving in many cases. Here are the defined servings in many cases.

Bread: 1 slice or bread, 1 small muffin, or dinner roll
Cereal: 1 ounce ready to eat cereal or ½ cup cooked cereal
Pasta and rice: ½ cup cooked
Raw leafy vegetables: 1 cup
Other vegetables: ½ cup
Fruit: 1 medium apple, banana, orange or ½ cup
Juices: ¾ cup
Milk: 1 cup
Yogurt: 1 cup
Cheese: ½ to 2 ounces
Meat: 2-3 ounces cooked

Proper nutrition becomes important for an athlete in training because the body requires six separate types of nutrients in order to function properly. They are carbohydrates, fats, proteins, vitamins, minerals and water. The various foods contain assorted proportions of these six nutrients. A correct balance between different types of food must be consumed to supply the necessary nutrients. An imbalance of these nutrients may cause undesirable adaptations, such as an excessive increase of body fat. The following three steps ensure the proper balance of nutrients to increase lean muscle mass, limit fat storage and improve performance.

A three step shopping list is included on the next page as a guideline to properly select food when grocery shopping.

3 WINNING STEPS SHOPPING LIST

Step # 1

Vitamin E	Vitamin A	Vitamin C
Almonds	Apricots	Cauliflower
Avocado	Carrots	Green Beans
Mayonnaise	Cheese	Kiwi
Olive Oil	Green Peas	Potatoes
Peanut Butter	Peaches	Oranges
Peanuts	Pumpkin	Pineapple
Salmon	Skim Milk	Raisins
Sunflower Seeds	Yogurt	Strawberries
Walnuts	Green Peppers	Pea Pods

Step # 2

Best Choice Carbs	Second Choice Carbs	Third Choice Carbs
Black Beans	Bran Cereal	Apples
Cherries	Baked Beans	Bananas
Cucumbers	Brown Rice	Grapes
Egg Noodles	Cherries	Green Peas
Fettuccini	Lima Beans	Macaroni
Green Beans	Multi Grain Bread	Popcorn
Kidney Beans	Potatoes	Raisins
Mushrooms	Oatmeal	Ravioli
Onions	Pita Bread	Spaghetti
Pears	Rye Bread	Sweet Potatoes

Step # 3

Best Choice Protein	Second Choice Protein	Third Choice Protein
95% Lean Ground Beef	2% Milk	75% Lean Ground Beef
95% Lean Ground Turkey	85% Lean Ground Beef	75% Lean Ground Turkey
95% Lean Ham	85% Lean Ground Turkey	Bacon
Beans and Peas	85% Lean Ham	Beef or Pork Ribs
Skinless White Chicken	Low Fat Cheese	Chicken with Skin
Low Fat Cottage Cheese	Low Fat Yogurt	Fried Chicken
Non Fried Seafood and Fish	Egg Whites	Fried Fish
Skim Milk	Regular Yogurt	Ham
White Tuna in Water		Whole Eggs

PRE-TRAINING / COMPETITION NUTRITION

The most important component to achieving athletic success often goes unnoticed and untouched. With everything put into being the strongest and best conditioned athlete, people tend to forget about being the best nourished athlete. This type of athlete will be the one that can bounce back after a 10 K run, 1600 M swim or the one that can compete at a high level for the duration of a double header.

In order to sustain a high level of athletic performance a high level of glycogen is needed to perform for prolonged periods of time. Glycogen is a form of sugar stored in muscle and the liver. Glycogen is the main source of energy for high intensity sports. Meals leading up to an athletic event should contain high levels of complex carbohydrates and be low in fat. If you want maximum results waiting until the night before the competition may be too late. Start preparing 2-3 days before to give your body enough glycogen stores to achieve the best results.

To perform well, your body needs to have adequate amounts of carbohydrates stored in your muscles and liver.

Eating a carbohydrate-rich snack before your activity will help to fill your energy stores. This can be very important especially during long or endurance events.

Experiment with your pre-competition nutrition during training. It is not recommended to try new foods or drinks on the day of an event.

What should my pre-competition meal provide my body?

Enough fluids to maintain hydration, preferably water
Higher level of carbohydrates
Should be low in fat
Should be baked or grilled
Should be low in sugar
Low glycemic index
Easy to digest and non spicy

A quality pre-competition meal may look like the following for a 200 lb male:

1 Small garden salad (with light dressing)
1 Large Grilled chicken breast (with light marinade or barbeque sauce)
1 Medium sized sweet potato (with a small amount of brown sugar, cinnamon and butter)
2 Cups of steamed vegetables
1 Large piece of fruit
3 Glasses of water

POST-TRAINING / COMPETITION NUTRITION

It is very important that you provide your body with the nutrients it needs to help repair damaged muscle fibers. Your body is a lot like an automobile in the simple fact that if you don't "fill it up" it won't work. Within the first hour of post-competition you should consume a drink or meal that contains a large amount of carbohydrates and a small amount of protein and fat. An ideal caloric intake ratio would be, 0.3 grams of protein and 1 gram of carbohydrates per kilogram of body weight. You should also continue to hydrate with liquids, preferably water or an energy drink.

A quality post-competition meal may look like either of the following for a 200 lb male:

1 Large bowl of fruit with granola and yogurt
1 Glass of an energy drink (Gatorade, Powerade, etc.)
2 Glasses of water

Or

1 Recovery drink containing 28 grams of protein and 90 grams of carbohydrates.

If you do not eat the right foods and/or the right amount of food to replenish your system and it's broken down muscles, you will not be able to maximize the effects of your next training session. Immediately following your workout, your body is in a catabolic state in which it continues to breakdown. It will remain in this state until the body receives some type of food and or supplement. At this time your body will begin its anabolic state which consists of the rebuilding of broken down muscles. It is extremely important that the athlete ingest their recovery shake and or food within 45 minutes upon completion of their workout.

Approximately 1 to 1 ½ hours after your first post-competition meal you should eat your normal balanced meal. This meal should contain a balanced amount of carbohydrates, proteins and fats. The ratio for the aforementioned should be around 60%/25%/15%. This will continue your body's anabolic state and attribute to the rebuilding and growth of muscle.

PERFORMANCE FOODS ON THE GO

We all have experienced the difficulty in eating the proper performance foods while traveling. In actuality this situation can be easily avoided with a little bit of knowledge and grocery shopping. When traveling, try packing non-perishable food items in Tupperware containers or zip-lock bags. If you have a small personal cooler, you can pack small perishable items such as yogurt and cheese for the trip. You should also try to pack foods that can be combined to make a small performance meal. Once you arrive at your destination you can go to the local grocery stores to pick up any other desired perishable items and place them in an available refrigerator.

PERFORMANCE FOOD TRAVEL LIST

Bagels
Dried Fruit
Energy Bars
Fresh Fruit
Fresh Vegetables w/ Low Fat Dips
Granola
Mixed Nuts
Oatmeal Packs
Peanut Butter
Pretzels
Raisins
Trail Mix
Tuna
Wheat Thins
Yogurt

GOOD FAST FOOD CHOICES

Wendy's

Baked Potato w/ sour cream
Chili
Garden Salad
Chicken Salad
Grilled Chicken Sandwich

McDonald's, Burger King

Grilled Chicken Sandwich
Garden Salad
Chicken Salad

Taco Bell

Chicken Burrito
Chicken Taco
Refried Beans
Rice
Taco Salad

Subway

Veggie Sandwich
Turkey Sandwich w/ no mayo
Chicken Breast Sandwich

Chic-Fil-A

Grilled Chicken Sandwich
Fruit Cup
Salad

ARE LOW CARBOHYDRATE DIETS FOR ATHLETES?

It is true that consuming more calories (from carbohydrates, protein and/or fat) than the body expends can lead to weight gain and potentially obesity. But eating a carbohydrate rich diet does not directly lead to obesity. Severely restricting carbohydrates from an athlete's diet is dangerous and detrimental to optimal performance, but more importantly it is dangerous and detrimental to the health of an athlete. An athlete's daily intake level of carbohydrates should be approximately 3.2 to 4.5 grams of carbohydrates per pound of body weight.

What do carbohydrates do for my body?

Fuel the brain, muscles and central nervous system
Stored for energy/fuel in the muscles and liver
Allow the body to efficiently burn fat
Allow for protein to be used for tissue repair and growth
Contribute fiber to the diet
They are the main source of energy in athletic performance