NUTRITION FOLDER

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NUTRITION

Dear Rush Players,

The Nutrition Manual has been designed to optimize nutrition for soccer players. The margin of victory between success and defeat is small. When everything else is equal, nutrition can make the difference between winning and losing. Thus, what you eat, how much you eat, and when you eat is vital to soccer performance.

You can think about food and nutrition as part of your equipment. You know you are not going to play well with only one cleat, so you always make sure you wear both cleats. If you do not eat the right kinds of food and the right amount of food at the proper times, then it's similar to going to practice or a game only wearing one cleat. The food you eat allows you to perform your best.

In a typical match, soccer players run for a total of 5 to 6 miles at fairly modest speed. They also sprint for about 1/2 mile to 3/4 of a miles, accelerate 40-60 different times, and change direction every five seconds or so.

It's essential to have a nutritional plan to provide the fuel required sustain these efforts at the highest level possible.

The information in this manual is designed to provide players with the latest information on proper nutrition for soccer.

While there is no such thing as a magic diet or food there are many ways in which eating and drinking well can allow players achieve at their highest potential on the soccer field.

Enjoy! Lisa Burnett, RD, LD

NUTRITION

This manual contains information that will help you make informed choices to meet your nutritional needs as a soccer player.

The margin between victory and defeat among highly talented, motivated and well trained players is small. Attention to detail can make up that vital difference.

DIET AFFECTS PERFORMANCE. The foods we put in our body **WILL** affect how well we train and play.

ALL PLAYERS ARE DIFFERENT. There is no single diet that meets the needs of all players at all times.

Diet may be most influential on training. The right diet allows you to train at a consistent high level while limiting illness and injury. Proper nutrition is critical when preparing for matches and can also reduce recovery time post match.

GETTING THE RIGHT AMOUNT OF ENERGY to stay healthy and perform at peak levels is key. Too much and body fat increases, too little and performance decreases, injury increases.

BENEFITS OF PROPER NUTRITION:

- Optimum gains from the training program - Quicker recovery within and between training and matches - Achievement and maintenance of ideal weight and physique - A reduced risk of injury and illness - Confidence in being well prepared for matches - Consistency in high level performance in training and matches

A Healthy Game Plan:

There are 6 different types of nutrients.

Your body needs the right mix of each to perform at the highest level possible. It's important to understand what these nutrients are and why they are important.

1. CHARBOHYDRATES: The primary source of fuel for our muscles and brain. They are found in breads, cereals, rice, fruits and dairy products. Provide 4 calories per gram. There are 2 types of carbohydrates:

a. Simple carbohydrates provide quick energy. Break down quickly.
   i. Ex) milk, yogurt, candy, chocolate, fruit, fruit juice, cake, jam, soda

b. Complex carbohydrates provide long term energy. Break down slowly
   i. Ex) spinach, sweet potato, broccoli, beans, zucchini, whole grains

2. PROTEIN: Building blocks of life. Support growth of the body. Build and repair muscles and tissues. Ex) meat, fish, poultry, eggs, beans, and dairy products. Provide 4 calories per gram.

3. FATS: Source of stored energy that is burned during low intensity activities. Also insulates the body, cushions and protects organs and transports vitamin. There are healthy and less healthy types of fat. Unsaturated fats are healthy fats while saturated are less healthy fats. Provide 9 calories per gram.

1. Unsaturated: Plant and fish sources. Liquid at room temperature. a. Ex) Fish, vegetable oil and nuts.

2. Saturated: Animal sources. Solid at room temperature. a. Ex) Butter, cheese, ice cream, mayonnaise, creamy salad dressings.

4. WATER: Stabilizes body temperature, carries nutrients to and wastes away from cells, and is needed for all cellular function. It makes up between 60% - 75% of our body weight.

5. VITAMINS: Compounds that our bodies need to function normally. They play essential roles in every body system. If we don't have enough of them, we can develop a wide variety of health problems. Vitamins cannot be synthesized by any organs; they can only enter our bloodstream through foods. Found in various foods. Ex) vitamin C, A, D, B

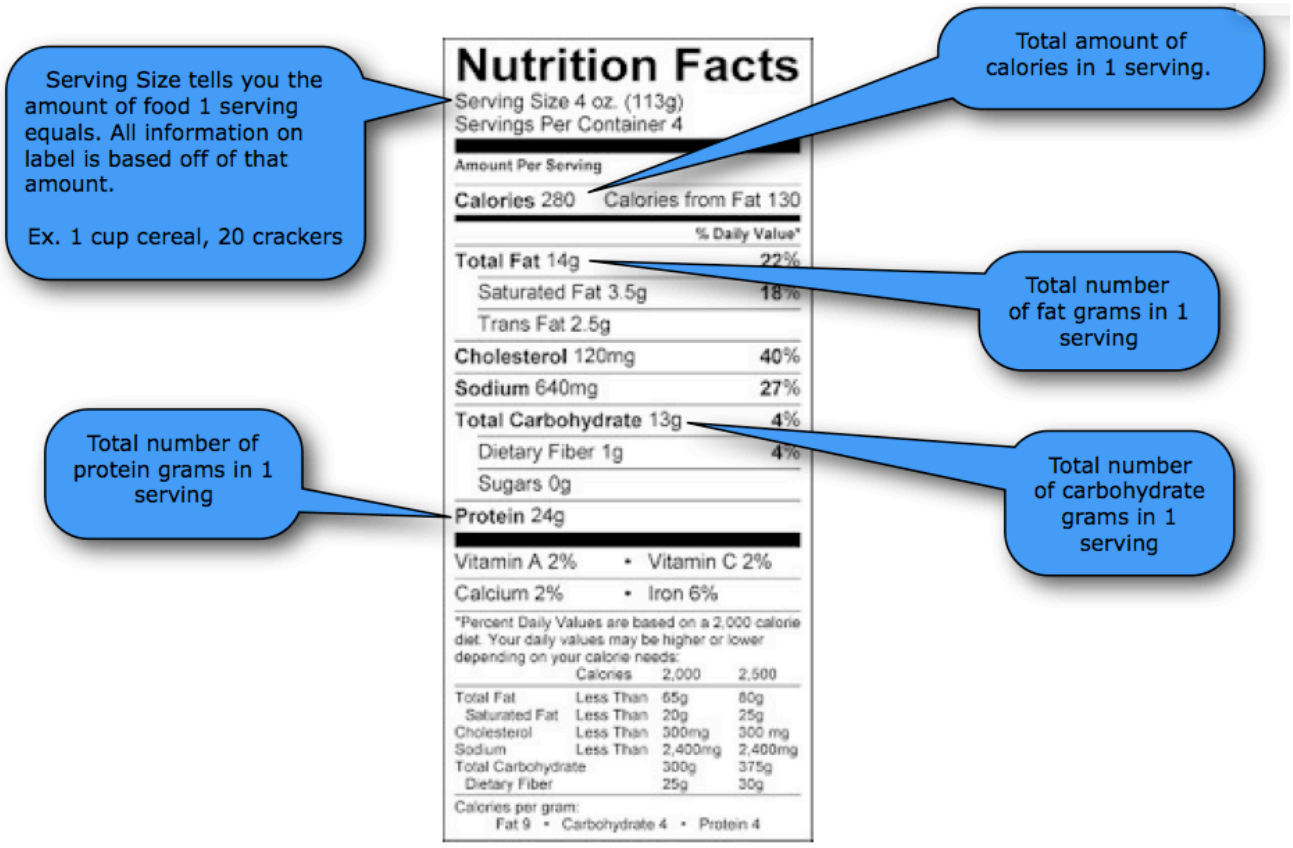
6. MINERALS: Responsible for building the structures in the body like bones, and teeth. Secondly, minerals help to regulate bodily processes. Found in various foods. Ex) phosphorus, iron, calcium

Label Reading 101

Before we get into the specifics about what you should eating to perform your best, it's important to understand how to read a food label. If you can't figure out what's in the foods you are eating then knowing what to eat does not help you.

Currently, almost all food products are required to have these labels. In the near future, restaurants will also need to make food label available for their products.

Below is an example of a food label and information on how to read it:



DO NOT WORRY ABOUT PERCENTAGES!

WE WILL ONLY WORK WITH GRAMS AND MILLIGRAMS.

Carbohydrates

Carbohydrate are an essential part of your diet as a soccer player because they are the body's main source of energy. Your body can only hold enough carbohydrate to last one day of strenuous training. This means you must be regularly consuming carbohydrate food and drink to replenish these carbohydrate stores.

Guidelines for how much you should consumed are based on your body weight. How much you consume also differs depending on the situation.

Below are guidelines:

Post training/match carbohydrate intake:

1 gram per kilogram of your body weight per hour (1 kg = 2.2 pounds) This should be consumed at frequent intervals 0-4 hours after training or a match. Ex) If I weight 123 pounds first I need to convert that to kilograms.

123 lb / 2.2 kg = 55.9 kg.

Now take 55.9 * 1 g carbohydrate = **55.9 grams of carbohydrate per hour**
Daily Recovery from moderate duration with lower intensity training session: 5-7 grams per kg of your body weight per day. Ex) Using the same body weight of 55.9 kg

55.9 * 5 = 279.5, 55.9 * 7 = 391.3

In 1 day I need to eat between **279-391 grams of carbohydrate**
Recovering from an intense and heavy endurance training session or pre

match fueling:

7-10 grams per kg of your body weight per day. Ex) Again, using the same body weight of 55.9 kg

55.9 * 7 = 391.3, 55.9 * 10 = 559 In 1 day I need to eat between **270-391 grams of carbohydrate**

Protein

Protein plays a key role in the changes that occur in the body due to training. Protein makes up approximately 20 percent of all muscle tissue. Protein is also a vital part of bones, ligaments, and tendons: all tissues that support muscles.

All the enzymes in the body are proteins. Enzymes are compounds that drive chemical reac- tions. For example, the chemicals that help produce energy from carbohydrates and fats are en-

zymes. Proteins in blood help control the body's water balance. Proteins also help transport nutrients to cells and waste products away from cells. Antibodies that function in the immune system are proteins. Protein also can be used as a source of energy (calories).

Guidelines for how much you should consumed are based on your body weight. Below are guidelines: Soccer players need to eat 1.4 to 1.7 grams of protein per kilogram body weight daily. Ex) If I weight 123 pounds first I need to convert that to kilograms.

123 lb / 2.2 kg = 55.9 kg.

Now take 55.9 * 1.4 g protein = **78 grams of protein**

55.9 * 1.7 = **95 grams protein**

This means in 1 day I would need to consume between 78-95 grams protein

* Training Stress: As an player moves to a higher level of training (increased volume or intensity) protein requirements will increase temporarily until the athlete adapts to the new level of training requirements. Thus protein requirements increase with increased training stress.

Good Sources of Protein with Protein Content

Food	Serving Size	Protein Content (grams)
Beef	3 ounces	20 to 25
Pork	3 ounces	18 to 21
Chicken	3 ounces	18 to 24
Fish	3 ounces	17 to 24
Beans, peas	1 cup	14 to 16
Nuts	½ cup	12 to18
Grains (rice, etc.)	1 cup	11 to 16
Milk	1 cup	8 to 9
Eggs	1 large	6 to 7
Cheese	1 ounce	5 to 7
Bread	1 slice	2 to 3

Fat

A player will perform best when the amount of body fat is within his or her individual optimum range. This is not the same for every player. It will also change throughout a players career. Body fat is very important, if it falls too low the player will struggle to keep healthy. If a player has too much body fat, they will be slowed down due to the face they are carrying extra weight.

There are two different types of fat:

Saturated fats are found in foods such as red meat, egg yolks, cheese, butter, milk and commercially prepared cakes, pies and cookies. Saturated fats are the less healthy of the two types of fats. No more than 10% of the diet should come from saturated fats.

Unsaturated fats come in the form of monounsaturated fats and polyunsaturated fats. Monounsaturated fats are found in foods like olive oil, canola oil, avocados, almonds and pecans. Polyunsaturated fats, found in sunflower oil, safflower oil and corn oil are not thought to contribute to heart disease but don't offer the same protection as monounsaturated fats.

The number of grams of each type of fat will printed on the food label.

Guidelines for how much fat you should consumed are based on your body weight. Below are guidelines: A general range for fat intake is 1 gram per kilogram per day. Ex) If I weight 123 pounds first I need to convert that to kilograms.

123 lb / 2.2 kg = 55.9 kg. Now take 55.9 * 1 g fat = **~56 grams protein This means in 1 day I would need to consume around 56 grams of fat.**

****Avoid fats in the hours before training or game because they take longer to digest, and you do not want to have intestinal cramping or pain during the workout****

Hydration

A human body is mostly water, comprising over 60 percent of your weight. Water plays a big part in keeping you cool, as well as in flushing toxins from your system. When you exercise strenuously, you can lose a significant amount of fluid, and it is important to replace that fluid (re-hydrate) so that your body can continue to function at its best.

Signs of dehydration include feeling dizzy or lightheaded, having a dry mouth and not urinating as much as usual. If you are dehydrated, you will not be as strong and your reactions will not be as fast as they could be.

You can lose 2 liters of fluid in sweat during games played in moderate temperatures. In hot weather, you can lose more than 3 quarts of fluid in sweat.

Sweat loss should not be greater than 2% at any time during training or competition.

Here is how to calculate sweat loss:

1. Measure body weight before training

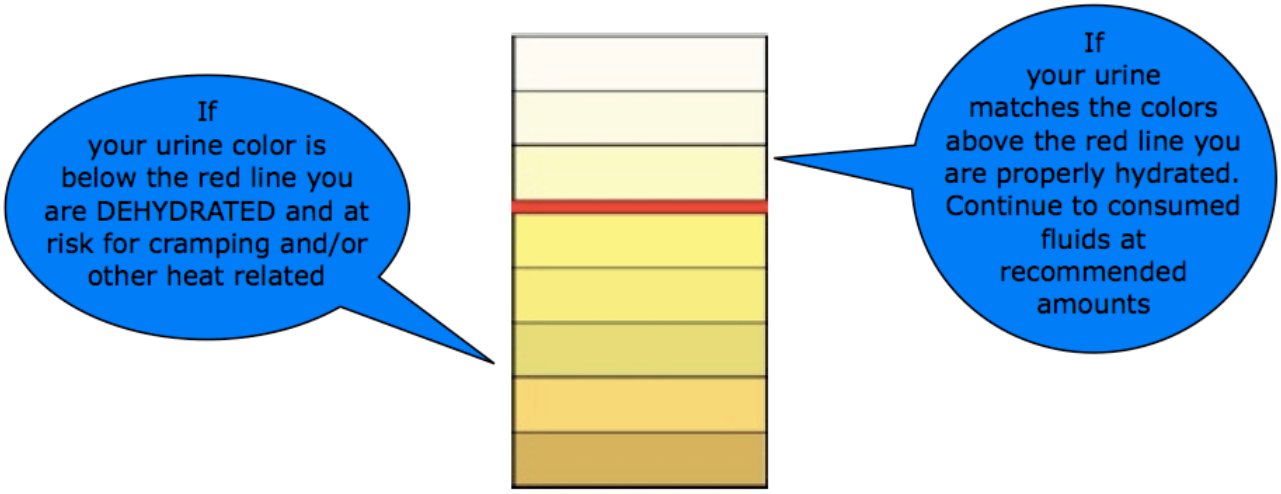
2. Measure body after training

3. Note how much fluid was consumed during the training session

4. Body weight before exercise (kg) - Body weight after exercise (kg) + fluid consumed during exercise (Liter) = Sweat loss (Liters)

5. To convert to a sweat rate per hour, divide by the exercise time in minutes and multiply by 60

You can also determine hydration status based on urine color:



During a match:

To precent dehydration, players should consume 200-400 ml (7-14 oz) of water 5 to 10 minutes before kick off. During the half time players should try to drink another 300-500 ml (10-17oz) of a sports drink.

During training:

During training sessions (especially very hot conditions or strenuous sessions) coaches should try to provide players with 150-250 ml (5-8oz) of drink about every 20 minutes.

Re-Hydrating after training/matches

Aim to drink about 1.2-1.5 liters of fluid for each kg of weight lost in training or matches.

Drinks should contain sodium (the main salt lost in sweat) if no food is eaten at this time, but most meals will contain adequate amounts of salt. Sports drinks that contain electrolytes can be helpful, but many foods can also supply the salt that is needed. A little extra salt may be added to meals when sweat losses are high.

Selecting a Sports Drink:

Pick a sport drink with 14 to 19 grams of carbohydrate and 110 to 165 milligrams of sodium per 8 ounces.

If you plan on trying a new hydration strategy, DO NOT do it before or during a match. Any change in your nutritional strategy should be practiced in training first!

Vitamins and Minerals

Vitamins and Minerals do not give you more energy, but they help to unlock the energy stored in food so your body can use it as fuel. Adequate intakes of energy, protein, iron, copper, manganese, magnesium, selenium, sodium, zinc, and vitamins A, C, E, B6, and B12 are particularly important to health and performance.

It is best to get these nutrients from a varied diet based on nutrient dense foods, like vegetables, fruits, beans, legumes, grains, lean meats, fish, dairy products, and unsaturated oils. Most players are able to meet the recommended intakes for vitamins and minerals by eating everyday foods. However a player is a risk for deficiencies when they restrict how many calories they are consuming or a players diet that lacks variety and consumes a high amount foods with a poor nutrient-density.

Try to include fruits and vegetables at EVERY meals. Think about eating in colors. Try to make your plate as colorful as possible!

There are two nutrients that get extra attention because they are the ones that are most likely to be low in player.

Iron deficiency is the most common nutrient deficiency in the world. And can be detrimental to a soccer player because it can impair training and match performance. Any unexplained fatigue, should be address and handled by a medical doctor and a nutrition expert. Taking iron supplements without the supervision of a medical doctor or nutrition expert is not a good idea because it can become toxic if a player has too much iron.

Calcium is very important for healthy bones. It's important to consume at least 3 servings of low fat dairy sources on a daily. In times of growth, a player will need to consume 2 additional servings. Fortified soy foods may be a useful substitute where players cannot consume dairy foods.

SOURCE	SERVING SIZE
Milk & Milk Products	
Low-fat yoghurt	1 carton (200g)
Low-fat milk	1 glass (250ml)
Cheese	1 slice (20g)
Fish/ Meat/ Beans/ Nuts	
Dried ikan bilis (with bones)	2 tablespoons (40g)
Soya beans (cooked)	1 mug (180g)
Canned sardines (with bones)	1 fish (50g)
Beancurd, firm (tau kwa)	1 small cake (90g)
Almonds	1/4 mug (40g)
Dhal (raw)	1/4 mug (50g)
Soya beancurd with syrup (tau huay)	1 bowl (540g)
Beancurd, silken (tofu)	2 squares (170g)
Roasted peanuts, without shell	1/4 mug (60g)
Egg	1 (50g)
Soya bean drink	1 glass (250ml)
Fruit/ Vegetables	
Dried figs	5 whole (95g)
Kailan (cooked)	3/4 mug (100g)
Spinach (cooked)	3/4 mug (100g)
Chye Sim (cooked)	3/4 mug (100g)
French beans (cooked)	3/4 mug (100g)
Broccoli (cooked)	3/4 mug (100g)
Apricot, dried	1/4 mug (60g)
Papaya	1 wedge (130g)
Raisins	1/4 mug (60g)
Green peas(cooked)	3/4 mug (100g)
Calcium-Fortified Products	
High-calcium milk powder	4 scoops (25g)
High-calcium soya bean milk	1 glass (250ml)
Egg noodles	1 portion (100g)
Bread	2 slices (60g)

Nutrition on the Road:

Traveling is a major part of being a high level soccer players. There are many nutritional considerations for this - there may be a different environment (heat, cold), food availability and lifestyle changes - that may all affect your nutritional requirements.

Below are tips on how to handle these changes so your performance does not suffer:

PLAN AHEAD: Research where you are traveling and figure out if you will have access to the foods you are comfortable eating before matches and training. Pack foods that are non-perishable so you will never be left without nutrition.

Below are good options:

Breakfast cereal Granola bars Rice Cakes Honey, Jam, Peanut butter Sports drinks

Sports Bars Trail Mix Nuts and dried fruit

PACK A WATER BOTTLE: Hydration while traveling is just as important as when you are at home. Even more important if you are flying, the pressurization of the cabin air increases fluid losses, so dehydration can be a problem when the flight lasts several hours or longer. Pack a water bottle so you always have way to hydrate in the bus, car, plane, train or however you are traveling.

Meal/Snack Suggestions:

Pre-game meal ideas (higher in carbohydrate):

Breakfast:

Toast and jam/honey Breakfast cereal and milk Pancakes and syrup Yogurt with granola

Fruit Smoothie Fruit drink Bagel with peanut butter Any piece of fruit Waffles with syrup

Lunch or Dinner:

Sandwiches and pretzels Pasta and light sauce Rice meals Peanut butter and Jelly sandwich Any piece of fruit

* Avoid high fat or fiber meals before a match because could cause digestion issues.

Post training/game snacks:

Fruit smoothie Breakfast cereal with milk and a piece of fruit Bagel and peanut butter Sports Bar Chocolate milk Turkey Sandwich Granola and yogurt

* The most important aspect of a post training/match snack is to have a high carbohydrate food WITH a good source of protein. It is the combination that aids in recovery the best.

Pre-game Nutrition and Hydration Plan based on a 3:30 PM game.

The plan below is an example of proper fueling for a game starting at 3:30 PM.

Day before the game:

6. Eat a nutrition diet mainly made up of high-carbohydrate foods.

7. Avoid high-fat foods and fried foods.

8. Drink plenty of fluids – either water, fruit drink, or a sports drink. **Day of the game:**

- Eat a high-carb breakfast (see meal ideas on previous page)
- Drink plenty of fluids (sports drink, water, or fruit drink)
- Have a mid-morning snack consisting of carb-rich foods
- Eat a nutritious, high-carb lunch (see lunch ideas on previous page)
- Finish eating 21/2 hours before the game begins (i.e. 1:00 pm for a 3:30 pm game).

10:00 am	Mid-Morning Snack
12:00 pm	Lunch
1:30 pm	Finish all meals
1:30 – 2:00 pm	Drink 16 oz. of water or Gatorade
Every 15 – 30 min. afterwards	Drink 8 oz of Gatorade or water

* This only an example. Nutrition is very individual and if you are having problems figuring out what works for you, set up an individual session with the Rush dietitian.

Myth Busters:

Myth #1 – What I eat and drink doesn't affect my soccer performance.

The truth is that if you are not careful about what you eat and drink, you will run less, run more slowly, make bad decisions, touch the ball less, score fewer goals, and give up more goals late in the match.

Myth #2 – Drinking fluids during practice and matches is for wimps.

If you play hard in practice and in matches, you lose lots of sweat, especially when it's hot and humid. Some of the water in that sweat comes from your blood, and the last thing you want to do is reduce your blood volume. If you do not replace most of the fluids you lose in sweat, your performance will deteriorate and you may become susceptible to muscle cramps, heat exhaustion, and even heat stroke.

Myth #3 – As long as I drink whenever I'm thirsty, I'll get plenty of fluids.

Thirst is not a good indicator of fluid needs, so you must force yourself to drink early and often, whenever there are stoppages in play. Your goal should be to never lose more than about 2% of your body weight in a practice or match.

Myth #4 – When the team travels to an away match and the game is over, it's O.K. to eat whatever I want at restaurants.

Even when your team is taken to a restaurant or a food court where good selections are available, many players will make poor choices, but you can be smarter. The idea is to get ready for the next match. Proper food choices—lots of carbs, little fat—will put more energy in your muscles, which means better performance in the next game. If your opponent isn't as enlightened as you, then you will be at an advantage. If you are unsure about which foods are high in carbs and low in fats, ask for help.

