Smart Athlete Nutrition/Hydration Guidelines – DHS Boys Lacrosse

In general, our kids need nothing more than a proper diet and water to provide them adequate fuel for training and games! Proper nutrition is very important for athletes, but you must recognize that the following information presented are only guidelines and must be modified to the needs of the individual.

Sleep, **proper nutrition** and constant **hydration** are key elements to enhancing your athletic performance. Proper planning of meals and the snacks you eat will help you be at your best during school, for the daily 6:30 – 8:30 practices, and late afternoon games this season.

1. Sleep 8-10 hours.

How Does Sleep Affect My Performance?
Recovery after exercise is critical to realizing the gains from all of your training, and adequate sleep is a vital component of the process of recovery. In addition to providing your muscles with the rest they need, sleep allows many other systems in the body to reset and rejuvenate themselves. Scientists have found that athletes who get inadequate sleep do not function optimally during exercise, are more susceptible to getting sick, and their use of carbohydrate muscle fuel is impaired. In short, you have a better shot at performing at your best when you get adequate sleep before practices and games.

2. Eat Healthy meals and snacks.

Fuel your body with proper Nutrition *(Eat for performance)*
Choose local, seasonal, organic fruits and veggies, grass fed beef… the less packaged or processed the better.

ENJOY - Whole grains, Fruit, Fruit juices, Veggies, Lean meats, Chicken, Fish, Nuts Pretzels, Pasta, Potatoes baked, Eggs, Beans, Yogurt, Hummus, cheese, etc.

AVOID - Fried, Soda (dehydrates you), Junk food (no nutritional value)
Tip: If you do drink Soda or Coffee/Tea drink a glass of water before.

3. Hydration All Day…Every Day.

Drink one 12oz Glass of water every morning when you first get out of bed.

During the Day – try to drink a bottle of water or electrolyte drink every 1-2 hours.

Hot Weather – When the weather gets hot athletes need to increase their fluid intake due to excessive sweat loss during workouts. Muscle cramps, Heat Exhaustion and Heat Stroke are all problems, which can develop without adequate hydration. Hydrating throughout the day and as often as possible during workouts with water and/or electrolyte drinks will enable the athletes to stay healthy and perform at their best. *(Read the important information on Heat Exhaustion and Heat Stroke on page 9).*

4. Before/During/After – Games and Practices

You NEVER want to be hungry or thirsty going into your workout or game.
Once you get behind it is very difficult to make it up…NO BONKING!

BEFORE

When Should I Eat Before Exercise?
Consume a high-carbohydrate pre-exercise meal about 2–4 hours before the start of a game or practice. Strive to consume about 200–300 grams of carbohydrates at this meal. Consume another 40–60 grams of easy-to-digest carbohydrates about 30–60 minutes before the start of exercise.

The night before
Meals with such items as pasta, rice potatoes, corn are preferred. Don't do too much exercise the night before because you don't want to burn off your glycogen stores.

Breakfast ideas
Oatmeal
Cereal such as cheerios
Toast (no butter or margarine)
Fruit
Waffle (light syrup)

Snack ideas
Any fruit (variety is good) even canned fruit is good
Fruit cups
Sugar snap peas
Edamame
Graham crackers
Animal crackers
Saltines
Pretzels
Popcorn (light)
Yogurt with wheat germ
Cottage cheese cups
Applesauce
Bagels with light cream cheese
Dry cereal

What Should I Eat Before Practice or Games?
Eat foods that are good sources of carbohydrates and that are familiar to you. Carbohydrates are the most important fuel during intense endurance exercise, and your stores of carbs are relatively small. So it's important to go into long practices or extended games with your carbohydrate muscle fuel stores fully loaded.

Games are not the time to experiment with unfamiliar foods during the pre-game meal. Instead, try out new foods prior to practices. Also, steer clear of foods that are high in fiber or fats before exercise. These foods tend to be slow to digest, can make you sluggish and can cause an upset stomach during exercise. A moderate amount of

protein with your high-carbohydrate pre-game meal is fine. Examples of high-carbohydrate foods are shown in the following list.

IDEAS FOR HIGH-CARBOHYDRATE PRE-EXERCISE MEALS

- Cold or hot cereal with fruit or fruit juice and low-fat or nonfat milk
- French toast or pancakes with maple or fruit syrup
- Toast with jam or honey and low-fat yogurt
- Breakfast burrito (scrambled eggs, salsa, & cheese in a flour tortilla) and fruit nectar
- Bagel or English muffin with jelly and/or peanut butter, banana, and fruit juice
- Pasta or cheese ravioli with low-fat, tomato-based sauce, French bread or low-fat breadsticks, steamed vegetables, low-fat/nonfat milk, pudding snack, canned fruit
- Grilled chicken sandwich with frozen low-fat yogurt and baked potato with low-fat sour cream or salsa
- Turkey sub sandwich with tomato, lettuce, mustard, baked chips, fruit juice, low-fat frozen yogurt
- Thick-crust cheese pizza, low-fat gelato, and canned peaches
- Baked or grilled lean beef, chicken, turkey or fish, steamed rice, dinner roll, cooked green beans, low-fat frozen yogurt, fruit juice

Offer several sources of carbs such as fruits, applesauce, raisins, crackers (only low fat) such as grahams, saltines, animal crackers, and bagels.

Do **not** have foods such as peanut butter, cheese, nuts and seeds, fried foods, mayo, butter etc as these contain too much fat and they will sit in the stomach and cause nausea.

Should I Eat Fruits or Vegetables Before Exercise?
It's a great idea to top off your muscle fuel stores by eating carbohydrates before exercise, and fruits and vegetables are examples of foods rich in carbs. However, your pre-exercise meal and snack should only include foods you're familiar with and know won't cause digestive discomfort during exercise. If you want to experiment with new foods before exercise, do so before practices and not before games.

What Should I Drink Before Exercise?
The best drink before exercise is either water or a sports drink. Water is fine if you are already pretty well hydrated and fully fueled going into your game or practice. A sports drink containing carbohydrates and sodium (electrolytes), such as EFS (Electrolyte Fuel System), Power Bar Endurance, Gatorade, Revenge Sport, etc. sports drink, is a better option than plain water if you've not had a chance to fully hydrate and top off muscle fuel stores before exercise, especially if your activity will last an hour or longer, or if you'll be exercising in hot or humid conditions.

• Why are electrolytes important:
• Keeps muscles firing and efficient.
• Maintains proper organ function (minimizes stress on your body)
• Better recovery so you are ready to go the next day.

When Should I Drink Before Exercise?
To hydrate optimally, drink 14–20 fl oz (about 400– 600 ml) of water or sports drink 2–3 hours before exercise. This should lead to urine production. If it doesn't, or the urine you

produce is dark in color, drink extra fluid about 2 hours before exercise. This will allow sufficient time for urine to be eliminated before starting exercise. **Continue to hydrate up to and during practice or games.**

DURING

Refuel with Carbs During Exercise

For practices and games lasting less than an hour, it's usually not necessary to refuel. Your carbohydrate stores should be adequate to meet your muscle fuel needs.\

When training or competing for an hour or two, or even longer, refueling with carbohydrates during exercise can extend your endurance and boost your performance.

- For exercise lasting 1–2 hours, consume 30–60 grams of carbs during each hour of exercise. Make sure to have easy-to-digest, high-carbohydrate snacks on hand.

IDEAS FOR QUICK-TO-DIGEST, HIGH-CARBOHYDRATE SNACKS

- Power Bars, Gu Chomps, Gu Gel, Powerbar Gel, ShotBlocks, Orange slices, Bananas

Why is it Important to Stay Hydrated During Exercise?

Dehydration impairs your ability to perform athletically, and this impairment occurs when you lose as little as 2% of your body weight due to fluid loss.

How can I increase my fluid Intake during practice and games?

Get into the habit of carrying your own sports bottle to games and practices. You may even want to bring 2 or 3, and put your name on them. This will allow you to have complete control over when you're hydrating, what you're hydrating with, and what volume you're consuming. Keep your sports bottle close at hand during games and while training, so that you can take sips at every opportunity.

A break in the action is your chance to rehydrate. For example, take the opportunity to rehydrate during time-outs, whenever you're on the bench, during quarter and half-time breaks, and between multiple events. Most athletes can easily consume about 5 fl oz (150 ml) during a quick stop in play, and even more during longer breaks. Each gulp from a sports bottle is about 1 fl oz (30 ml). The good news is that dehydration is completely preventable. But to accomplish that goal, you've got to use breaks in the action wisely.

AFTER

First 30 minutes:	**Replace Glycogen and Carbohydrates.** Orange juice, fruit, bagels, pretzels, salt crackers, Gels, Powerbars, etc. Good examples for proper replenishment: yogurt and fruit, or a glass of milk or hard-boiled egg with fruit. Continue to Hydrate
45 min – 1hour:	**Replenish, Rebuild** Protein drink or a Jamba Juice (all fruit) with soy or protein boost, Power Bars, peanut butter, Muscle Milk, etc.
	Sleep 8-10 hours

What Can I Do to Recover Quickly After Practice and Games?
Your body is ready to start the recovery process just as soon as you finish training or competing. But to get going on recovery, you need to provide the necessary nutrients, including carbohydrates to restore depleted muscle fuel stores, protein to repair and build muscle tissue, and fluids and sodium to rehydrate.

Carbohydrates: If you don't compete or practice again within 24 hours, your usual high-carbohydrate meals and beverages will generally promote a full recovery within about 24 hours.

Protein: Muscle tissue repair and building is another important facet of recovery. Muscle tissue is made up of protein, and protein is made up of building blocks known as amino acids. When you consume protein foods, the protein is digested and broken down into its component amino acids. These amino acids are then absorbed and repackaged into the proteins your body needs to repair and build muscle tissue. Consuming 10–20 grams of protein as soon as possible after practice or a game will provide the amino acids needed for repairing muscle tissue damaged during exercise, and for making new muscle tissue as an adaptation to your training. If you do resistance-training workouts, consume 10–20 grams of protein just before and immediately after lifting to ensure an adequate supply of amino acids for the muscle tissue repair and building process.

Fluids and Sodium: Even if you are diligent in your efforts to hydrate during practices and games, you may lose more fluids than you take in. Consume sodium sources along with your fluids. Rehydration will be more effective when sodium is included with the fluid and food you consume as you recover.

Please Note:
Everyone reacts differently to various foods. Some of us need more food and some need less. Either way, the athlete who has a firm understanding of his body's needs truly has an advantage in competition. We should encourage our kids to try different foods, liquids and times of consumption relative to training and games. Do so in either a practice week or in the off-season. Have your child describe how he/she felt with each combination so that he/she can identify the best food consumption strategy.

5. Additional Questions and Answers –

Excelling in your sport requires hard work, determination and practice. If you neglect your body and how you fuel it you may never reach your true potential in sport and in life!

Why is it important to plan what I eat BEFORE, DURING and AFTER a game or practice?
Consuming adequate food and fluid before, during, and after exercise can help maintain blood glucose during exercise, maximize exercise performance, and improve recovery time. Athletes should be well hydrated before beginning to exercise; athletes should also drink enough fluid during and after exercise to balance fluid losses.

What Are Some Practical Ways I Can Increase My Fluid Intake When Training or Competing?
Get into the habit of carrying your own sports bottle during the day as well as to games and practices. You may even want to bring 2 or 3, and put your name on them. This will allow you to have complete control over when you're hydrating, what you're hydrating with, and what volume you're consuming. Keep your sports bottle close at hand during games and while training, so that you can take sips at every opportunity.

How Do I Know If I'm Hydrated?
You can check your hydration status before exercise by monitoring the color of your urine. A light-yellow color is consistent with adequate hydration. If your urine is darker, more like the color of apple juice, that's a sign that you may need more fluids.

Should I Drink Water or a Sports Drink During Exercise?
Water is fine to hydrate with for light workouts or short games in mild weather conditions.

If your exercise will last an hour or longer, and any time you're exercising in the heat or humidity, a sports drink that provides carbohydrates, fluids, and sodium, such as Power Bar Endurance, Gatorade, EFS (Electrolyte Fuel System), Revenge Sport, etc. is a better option than plain water.

The advantages are many. First, a sports drink provides carbohydrates to fuel your muscles during exercise. Second, athletes freely consume more fluids when their hydration beverage is flavored, as is the case with a sports drink. Third, sodium and carbs in a sports drink cause the fluid in the beverage to be absorbed more quickly. The sodium also helps maintain your drive to continue drinking fluids when exercising, which is crucial to meeting your fluid needs. Finally, the sodium also helps you retain the fluid that you've consumed. Conversely, drinking plain water doesn't refuel muscle, it tends to satisfy your thirst before your fluid needs have even been met, and it can lead to the elimination of fluids and dilution of essential electrolytes.

What do Carbohydrates do and how do they affect my performance?
The most important fuel source, carbohydrate comes in fruits, vegetables, pastas, breads, cereals, rice (i.e. grains), and milk. and should provide about 60-65 percent of daily calories. Your body converts sugars and starches in carbohydrates to energy (glucose) for immediate use or stores it in the liver and muscle tissues (glycogen) for later use, especially important for endurance activities. If your body runs out of carbohydrate fuel during exercise, it will burn fat and protein for energy, <u>but not efficiently, causing your performance level to drop.</u> This can happen if 1) you start exercising without much muscle glycogen, 2) exercise heavily for more than an hour without eating more carbohydrates, 3) do repeated high-intensity, short-duration exercises or participate in multiple events or training sessions in a single day without adequate carbohydrate intake.

What is the Effect of Protein Intake on Performance?
It often comes as a surprise to athletes, but protein doesn't fuel your performance during exercise. Instead, that's the job of the carbohydrates you eat, along with your stores of fat. That being said, the protein you eat does play an important role: It helps in the repair and building of muscle tissue in response to training and games.

Your muscles are made up of proteins. Proteins are composed of biological building blocks called amino acids. When you eat food, whether it's a piece of meat or a slice of bread, whatever protein is present is gradually digested and broken down into its amino acid building blocks. These individual amino acids are then absorbed and repackaged together in different configurations to make the specific types of proteins you need, including muscle protein.

How Much Protein Should I Eat Per Day?
Timing of protein intake is as important as total protein intake. By consuming about 10–20 grams of protein just before and/or just after working out, you can be sure your muscles have access to the amino acid building blocks needed for the repair and building of muscle tissue after exercise.

As for total protein intake, teenage athletes require about 0.68–0.91 grams of protein per pound of body weight daily (1.5–2.0 grams per kilogram). For a 150-pound (68-kg) high school athlete, this equates to 102–137 grams of protein daily. Most athletes easily consume this amount of protein or more in a day. Consuming more protein than you need offers no performance benefit, and it does not further increase your muscle mass.

What Can I Eat to Gain Muscle and Bulk Up?
If you're trying to bulk up and add muscle mass, your muscles need a stimulus to get bigger and stronger, and that requires a well-designed resistance-training program. In addition, you need to provide the nutrition building blocks to increase muscle mass in response to your workouts. Two critically important nutrition factors for building muscles are calories and protein.

Cutting calories or dieting will work against your ability to bulk up. In fact, if your goal is to build muscle mass, you'll actually need a surplus of calories every day, so plan on consuming an extra 500 calories daily when you're training to build muscle. In addition to extra calories, consume 10–20 grams of protein just before and/or just after working out. This will help to ensure that your muscles have access to the amino acid building blocks needed for the repair and building of muscle tissue after workouts.

Below are a few practical strategies to get the calories and protein you need to build muscle:

- Don't skip meals or go long stretches without eating.

- After an overnight fast and when you skip meals, the breakdown of muscle outpaces the building of muscle tissue. To flip the switch to promote muscle building, you need to eat. So don't skip breakfast or other meals, and be sure to consume some high-quality protein with each meal.

- Promote the repair, building, and recovery of muscle tissue by providing protein, carbohydrates, and calories as soon as possible after workouts. For a muscle-building boost, keep a stash of protein bars in your gym bag, and down one as soon as possible after that last lift of your workout.

What Is a Healthy Diet?
A healthy diet provides the calories, carbohydrates, protein, fat, fiber, and essential vitamins and minerals you need to support growth, to keep you healthy, and to help you achieve your full potential as an athlete.

For example, a typical teenage male athlete weighing 150 lbs (68 kg) and exercising more than an hour daily requires about 3,200 calories per day. To achieve this calorie intake, a variety of foods are recommended, including grains, vegetables, beans, fruit, dairy foods, and meats.

As a practical strategy, you can ensure that you're eating a healthy carb-rich diet during meals by filling ¾ of your plate with carbohydrate foods like cereals, grains, pasta, bread, potatoes, fruits, vegetables, and beans. Fill the other ¼ of your plate with protein foods like meats, poultry, or fish and low-fat or nonfat dairy products. Choose lean cuts of meat, and trim the fat and skin from poultry. Fish, nuts, and seeds contain healthy oils, so eat these foods frequently in place of meat and poultry.

Plan meals and snacks ahead of time. By thinking ahead, you can ensure that healthy food choices are always available to you, and you won't be tempted by quick fixes like fast foods and packaged snacks, which are often relatively higher in fat, sugar, and calories, than foods prepared at home.

In addition, strive to eat smaller high-carbohydrate meals and snacks frequently throughout the day. This will help maintain your carbohydrate muscle fuel stores and will help you ward off the extreme hunger that can lead to overeating and unwanted weight gain. And by consistently replenishing your carbohydrate muscle fuel stores, you'll be able train longer and harder, delay the onset of fatigue, and help your muscles recover faster after workouts. Better workouts will translate to better performances during games.

To learn more specifics about a healthy diet for your weight, height, gender, and activity level, go to MyPyramid.gov.

What Foods Will Increase My Height?
Your height is largely determined by your genetics, and a healthy diet will enable you to achieve your full growth potential. Consuming inadequate calories, protein, or other key essential nutrients for a sustained period of time may suppress your growth, but consuming more of these nutrients than you need on a daily basis will not make you grow taller.

What Are Good Supplements to Take?
If you are consuming a healthy diet, you probably don't need to consume dietary supplements. However, if your diet is somewhat limited by food allergies or intolerances, you may benefit from a once-daily multivitamin/mineral supplement and/or a supplement with calcium and vitamin D. Ready-to-eat cereals are often fortified with vitamins and minerals, and can also serve as an excellent source of these essential nutrients.

What Are the Effects of Energy Drinks?
The "energy" in energy drinks comes from sugar and caffeine. The sugar concentration of these drinks is generally too high for them to be appropriate to consume during exercise. In fact, the high sugar concentration can actually **impair hydration** and lead to stomach upset during exercise in some individuals. Caffeine intake in the hour or so before exercise or during exercise may be of benefit to endurance athletes involved in events of an hour or more in length. Recent studies suggest that a total caffeine intake in the range of 70–150 mg prior to and/or during exercise may be all that is needed. However, the **disadvantage** of energy drinks as a caffeine source is that caffeine levels are often not indicated on the product labels, and in some cases can be extremely high, leading to symptoms such as nervousness, anxiety, inability to sleep, agitation, stomach upset, and rapid heartbeat.

A reliable and measured option for caffeine intake prior to or during exercise is an energy gel. The Gels are more concentrated than a drink would be, offer a combination of carbohydrates and electrolytes for performance, and come in a variety of flavors.

What is the difference between Heat Exhaustion and Heat Stroke?
HEAT EXHAUSTION AND HEAT STROKE
(Based on a CDC Prevention Guide for Emergencies and Disasters.)

Heat exhaustion is a mild form of heat-related illness that can develop after several days of exposure to high temperatures and inadequate or unbalanced replacement of fluids. People working or exercising in a hot environment are at risk for heat exhaustion.

Heat stroke is a form of hyperthermia, an abnormally elevated body temperature with accompanying physical and neurological symptoms. Unlike heat cramps and heat exhaustion, two forms of hyperthermia that are less severe, heat stroke is a true medical emergency that can be fatal if not properly and promptly treated.

Of course, an ounce of **prevention** is work a pound of cure. We'd all rather avoid the problem than fix it. Measures to prevent heat exhaustion and heat stroke include:

* The most important measures to prevent heat strokes are to **avoid** becoming dehydrated and to avoid vigorous physical activities in hot and humid weather.

* If you have to perform physical activities in hot weather, drink plenty of fluids such as water and sports drinks; avoid alcohol, caffeine, and tea.

* Your body will need replenishment of not only fluids but also electrolytes (such as sodium) if you are active in the hot sun for prolonged periods.

Sweat contains 2-3 grams of salt per liter, and the rate of perspiration in a long, hot practice or race can easily average 1 liter per hour. If the athlete replaces only the lost water and has minimal salt intake, hyponatremia can result. (Abnormally low concentration of sodium ions in the circulating blood)

So instead of drinking just water, drink some sports drink too. Look for one without a lot of sugar in it. Or make one yourself with a pinch of sugar and salt in your water bottle. Or better yet, eat oranges and bananas. Pretzels or chips will replace the salt, but make you thirsty.

Sources for this document taken from:

Sports Nutrition for High School Athletes: Frequently Asked Questions
By: Christopher D. Jensen, PhD, MPH, RD
http://www.powerbar.com/articles/96/sports-nutrition-for-high-school-athletes-frequently-asked-questions-.aspx

Joint Position Statement: nutrition and athletic performance. American College of Sports Medicine, American Dietetic Association, and Dietitians of Canada.

American College of Sports Medicine; American Dietetic Association; Dietitians of Canada

Timely Statement of the American Dietetic Association
Nutrition Guidance for Child Athletes in Organized Sports
Suzanne N Steen DSc, RD

Other resources:

Power Foods by Liz Applegte, Ph.D.
Eat Smart Play Hard by by Liz Applegte, Ph.D.
Eat to Win by Dr. Robert Haas