



Sports Nutrition for Performance

Our bodies and minds need quality nutrition to function at their highest level. We expect the best from our young athletes both academically and athletically. One of the best things that we can do is provide the fuel and nutrients that young, developing athletes need.

Athletes need:

- Easily digestible, high-quality complex carbohydrates to fuel activity.
- Easily digestible, high-quality lean protein to promote musculoskeletal growth and repair.
- Easily digestible, high-quality essential fats for energy production and cellular repair.
- Water (mountain spring or artesian water such as Arrowhead, Crystal Geyser, Trinity, or Fiji, et al.)
- Easily absorbable, high-quality vitamins and minerals for anti-oxidation to promote muscular contraction, growth and repair; and also provide essential components of metabolism, blood and bone.

Good Carbs vs. Bad Carbs

All carbohydrates are not created equal. There are two types of carbohydrates, simple and complex. *Simple* carbohydrates are found in all foods using processed or white flour such as waffles, pancakes, bread, donuts, as well as most fruits, soda and sweetened beverages. The simple carbohydrates in fruit are better choices than those in white sugar. *Complex* carbohydrates are found in whole wheat and grain flour products, vegetables, and beans or legumes.

Simple carbohydrates are quick sources of energy and are needed during and immediately after sustained-activity. At other times they are stored as fats in our bodies. It is essential for athletes to be strong and lean with low body fat. So, athletes should use these types of carbohydrates only during activity (i.e., Gatorade) and immediately following activity (i.e., Muscle Milk.)

Why consume simple carbohydrates this way? Our bodies use stored carbohydrates and fats to fuel activity. When carbohydrate and fat stores run low, our bodies pull protein out of our muscles to use as fuel. Because it is important to build muscle, providing small amounts of simple carbohydrates during activity prevents protein or muscle breakdown. Muscle building is preserved. By consuming simple carbohydrates immediately after a workout, carbohydrate stores are restored and protein is saved for muscle growth and repair.

Complex carbohydrates are sources of sustained-energy and are necessary to fuel long-term activity. They cause water storage in muscles that promotes metabolic activity and thermoregulation. They also provide essential catalysts in metabolic pathways. Complex carbohydrates need to be consumed with all meals to ensure storage for future physical activity.

How much complex carbohydrates are enough? At each meal try to consume the equivalent of the size of your fist (you can go up to 2 fists.) Three slices of whole wheat bread or 1 cup cooked brown rice or pasta equals one serving.



Good Carbs

- 100% whole wheat bread, bagels, tortillas, pita, naan
- Whole grain cereals
- Potatoes with the skin (no French fries)
- Brown and wild rice
- Beans or Legumes
- Vegetables
- Fruits
- 100% fruit and vegetable juice

Whole grain flour and brown/wild rice provide fiber (prevents cancer,) protein (cellular growth and repair,) and B-vitamins (metabolic support) which processed flour and white rice do not.

To Build or Not to Build

Our bodies need *complete* proteins to promote growth and repair. Although plants do provide us with adequate protein, animal sources are superior in *bioavailability* or usefulness. *Complete* proteins provide us with all of the necessary building-blocks to promote growth and repair of the muscles and skeleton.

Animal sources of protein also have a lot of fat, so we need to emphasize lean sources in our nutrition plan. Lowfat and nonfat sources of dairy should be used to minimize caloric consumption. Eggs, fish, poultry, and only very lean cuts of red meat should be consumed to minimize fat consumption.

At each meal, we need to consume approximately the equivalent of the size of a deck of playing cards or two. It is also useful to have a small amount (about half the usual serving size) of protein immediately following activity.

Good Proteins

- 100% whey protein isolate (derived from milk)
- Egg whites
- Dairy products
- Fish
- Poultry (skin removed)
- Lean red meat
- Tofu or soy
- Nuts
- Beans or legumes

List reflects descending order of bioavailability. The plant sources have the same effect and should be eaten with whole grains or brown rice, if meat is not consumed.

When preparing fish, poultry, and lean meats, please grill, broil, bake, or sauté. Please do not fry any foods.



The Right Fats are Where It's at

Some fats are great for us. They prevent heart disease, repair cellular damage, promote growth and repair, and provide energy. Other fats cause heart disease, cellular damage, inhibit growth and repair, and are not useful for energy.

Essential fats are the good fats and provide the healthful benefits listed above. Essential fats come from *unsaturated* fats, which are found in most plant and nut oils, and some fish. We need to emphasize these types of fats in our nutrition plan. These fats are most healthy when consumed in the “raw” or unheated form.

Saturated fats come from most animal sources and cause all of the health problems listed above. These fats are in animal proteins, so we need to always choose lean cuts. Additionally, we need to remove the skin from poultry.

Consume at least 60 – 70 grams (4 – 5 tablespoons) or more of unsaturated essential fats for a total of 90 – 100 grams of total fats daily.

Good Fats

- Plant oils, unheated (Olive, vegetable, canola, corn, avocado, flaxseed)
- Nut oils or butters, raw (Almond, cashew, walnut)
- Fish (Salmon, sea bass, tuna)

Healthy fats are best consumed in the raw or unheated form, but use these oils when cooking, too.

Adding raw almonds to any dish boosts the essential fatty acid content, as well as fiber.

A good substitute for any recipe using lard or shortening is *coconut oil*, which is a solid at room temperature.

Frying foods is not recommended because of increased calories, and the degradation of essential fats into harmful fats.

Water – The Elixir of Life

Water is essential to all physiological functions including metabolism, energy production, and cognition. A mere 2% - 3% loss of body weight from dehydration drastically impairs our ability to perform and think. Our muscles are 60% water, and our brain is 70% water.

Consume water early and often, as our “thirst” mechanism lags behind actual dehydration. In other words, if you feel thirsty, you are already dehydrated. Drink small amounts of water and/or sports drink about every 10 minutes during sustained-activity. Do not wait and drink a large amount after your workout or game. You need to provide water continuously and your body can be trained to use water in this way.

Get into the habit of drinking 2 – 3 sips of Gatorade with a sip of water each time you leave the field during a game and at every water break during practice. Please do not feel inhibited to drink water or sports drink ever. We may need to change our way of thinking about this idea especially, if we are accustomed to older-fashioned notions of hydration and performance.



Mother Always Said to Eat Your Fruits and Vegetables

Turns-out, Mom knows best. Fruits and vegetables are essential for anti-oxidation, metabolic support, and anti-inflammation. That means faster growth and repair. For instance papayas have the enzyme *papain* that is an anti-inflammatory. Pineapples contain *bromelain* that facilitates muscular damage repair.

Eat fruits throughout the day to sustain higher energy levels, and move to vegetables in the evening to limit calories. Vegetable and fruit juices can be substituted occasionally (sparingly,) but avoid mixing vegetable juice with any kind of citrus juice. Make your own juice whenever possible and use all available parts of vegetables.

Consume at least 5 fruits and 2 – 3 cups of mixed vegetables each day.

Please eat a variety of vegetables and try to include all of the following (1/4 cup of each):

1. broccoli
2. mushrooms
3. carrots
4. bell peppers (any color)
5. cucumbers (any variety)
6. spinach

This combination provides a wide-variety of vitamins and enzymes, and the vegetables are readily-available.

Feel free to also use corn, squash, bok choy, snow peas, any variety of mushrooms, jicama, onions, cactus, any variety of peppers, tomatillos, etc. as well.



Nutrition Plan

Complex Carbohydrates (eat approximately 2 – 3 servings at each meal)

Equivalent:

- 1 cup breakfast cereal (Kashi cereals or Cheerios are great choices) or oatmeal
- 1 cup cooked rice or pasta
- 3 slices whole wheat bread
- 1 whole wheat bagel
- 3 corn or 1 burrito size whole wheat tortilla
- 1 medium-size potato with skin
- 1 medium-size apple or pear
- 2 cups vegetables

Alternative whole grains – spelt, amaranth, bulgur wheat, rye

Proteins (eat 1 – 2 servings at each meal)

Equivalent:

- 4 oz. of any fish, poultry, or lean red meat (size of a deck of playing cards)
- 3 eggs
- 6 egg whites
- 25 grams (1 scoop) protein powder
- 3 cups milk
- Black beans w/ brown rice (3 cups, cooked and mixed)

Fats (consume approximately 1 – 2 servings at each meal)

Equivalent:

- 1 tablespoon olive, flax, or other unsaturated plant oil (use these oils in your preparation of other foods, try not to overcook)
- 2 tablespoons raw almond or cashew butter
- 2 tablespoons peanut butter (raw almond or cashew butter are better choices)



Meal Plans

All sandwiches are to be made using 100% whole wheat breads. Please feel free to substitute tortillas, pita, bagels, or English muffins, etc.

Breakfast

2 – 3 servings complex carbohydrates
1 – 2 servings protein
1 – 2 servings fats
1 banana
1 cup milk
1 cup OJ

Oatmeal	1 Bagel	3 pieces Toast	Cereal
Protein smoothie	2 – 3 eggs	2 – 3 eggs	Milk
Banana	Banana	Banana	Banana
OJ	OJ	OJ	OJ

Snack

½ - 1 servings complex carbohydrates
½ - 1 servings protein
½ - 1 serving fats
1 -2 fruits (pineapple)

½ - 1 PB and J	½ - 1 turkey or lean roast beef sandwich
Apple	Apple
Banana	Banana

Lunch

2 – 3 servings complex carbohydrates
1 – 2 servings protein
1 – 2 servings fats
1 banana
1 cup milk

1 Turkey or Lean roast beef sandwich	Poultry/Fish w/ rice/potato	3 fish tacos
Pineapple	Pineapple	Pineapple
Banana	Banana	Banana
Milk	Milk	Milk

Snack

½ - 1 servings complex carbohydrates
½ - 1 servings protein
½ - 1 serving fats
1 -2 fruits (pineapple)

½ - 1 PB and J	½ - 1 turkey or lean roast beef sandwich
Apple	Apple
Banana	Banana



Dinner

2 – 3 servings complex carbohydrates
1 – 2 servings protein
1 – 2 servings fats
4 – 6 servings vegetables
1 cup milk

Choose any protein with any complex carbohydrate and add mixed vegetables.

Eat a large amount of vegetables (the equivalent of your two hands formed into a large bowl.)

Eat either a large salad or lightly steam or sauté your vegetables.

Night-time Snack

Protein smoothie

Protein Smoothies

Protein smoothies are great sources of quality nutrients without feeling overly full. They can be used as breakfast or snacks. Here are 2 great recipes.

Yo, Adrienne

2 cups frozen fruit (partial thawed)
(pineapple, papaya, mango, strawberries, etc.)
1 tablespoon olive oil (cannot taste it)
1 cup fat free yogurt (unsweetened)
1 - 2 cups fat free milk
1 scoop protein powder (25 grams)

Nutty Buddy

2 – 3 bananas
2 tablespoons raw almond butter
(cashew or peanut butter is OK)
2 cups fat free milk
1 scoop protein powder (25 grams)