

Sports Nutrition Primer

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Food Basics:

Carbohydrates – the *primary* energy nutrient for fueling muscles; these exist in 2 forms: simple (sugars) and complex (starches); 1 gram of carbohydrate yields 4 calories; 55-60% of calories in diet should come from carbohydrates.

- All carbohydrates - simple and complex – are digested and converted to blood sugar (glucose) and transported to muscles for fuel; the rate at which this occurs varies from fairly rapid to slow & steady and is termed the *glycemic index*
- Best eating strategy for pre-game and post-game recovery is picking a blend of foods that span the glycemic index (ideas below)
- What are "bad carbs"? Essentially anything white (flour, sugar, rice) and highly refined foods (packaged, many frozen meals, "junk food")
- Minimize these when possible and replace with whole grains and fruit

Fat – the *secondary* energy nutrient for long term fueling ("slow burning"); 1 gram of fat yields 9 calories; 20-25% of calories in diet should come from fat.

- Moderate amounts of *unsaturated* fat is healthy; fats from vegetables, nuts, fish
- *Saturated* fats come from animal and animal products (eg milk, butter); use sparingly and/or replace with low-fat dairy products

Protein – for muscle recovery and repair, but NOT a good source for energy fuel; 1 gram of protein yields 4 calories; 15-20% of calories in diet should come from protein

- A regular well-balanced diet provides adequate protein
- Some athletes who don't "eat well" may benefit from a small amount of protein supplement

Water – it's essential that athletes stay well hydrated before, during, and after competition; sports drinks are okay replacement for some water intake.

Carbohydrates & Glycemic Index:

(quickest to slowest energy release)

- Very high: sports drinks
- High: honey, potatoes, corn, bagels | breads | muffins, cereals, snack bars, anything with table sugar | high-fructose corn syrup | dextrose (candy, cookies, sodas)
- Moderate: raisins/grapes, crackers (graham, wheat), whole grains & bran, oatmeal & granola, bananas, oranges, pasta
- Low: dairy, beans/legumes, apples, pears, peaches, cherries, nuts

Timing:

- Best strategy is to eat balanced meals all week and stay hydrated; for early morning game, eat high carbohydrate dinner the night before and consume extra water
- Before game - **no later than** 75 minutes prior, consume 300-400 calories from multiple types of carbohydrate based foods; drink 12-16 oz water or sports drink; sip liquid on way to game
- During game - drink 5-10 oz water or sports drink for every 15 minutes of play time
- After and Between games - imperative to replenish blood sugar levels via carbohydrates; protein can be introduced at this time; consume water until urine is clear
 - within 30 minutes: consume 200-300 calories primarily from high glycemic index foods and include protein (4:1 carbs:protein ratio)
 - 2-4 hours after: continue carbohydrate intake with some protein; 300-400 calories

Meal Planning & Ideas:

1. Overall format:
 - glass of water
 - grapes/raisins, orange juice, or banana
 - milk or yogurt
 - sizable serving of primarily whole grain carbohydrate food (ideas below)
 - options: add low glycemic index fruit and handful of nuts (almonds, pecans, peanuts, cashews)
 - supplement options: multi-vitamin, fish and/or flax oil

2. High energy carbo Breakfast ideas:
 - Whole wheat or multi-grain* pancakes
 - French Toast with whole grain or multi-grain bread
 - Oatmeal
 - Whole grain Cereals (sugar coated is okay) with milk
 - Whole grain Toast: top with melted cheese, peanut butter & jelly/honey, cinnamon & sugar
 - Yogurt and Bagel (whole grain preferably)
 - Yogurt with Granola
 - Muffins (whole wheat or multi-grain*)

* blend white flour, wheat flour, bran, oat flour, cornmeal to taste, other grains

3. High energy carbo Lunch ideas:
 - Anything from the Breakfast menu!
 - Pasta (only if no second game or game is more than 2 hours after finished eating)
 - Chicken Salad, Tuna Salad, or lean meats on whole grain bread
 - Meals that include baked potato or corn
 - Soups, especially those loaded with noodles, pasta, rice, and beans
 - GOOD Restaurant Choices: Subway, Quiznos, Chik-Filet (all these offer soups)
 - DON'Ts: fast food, heavy & high fat meals, high sodium foods

4. Liquid combo meal:
 - Yogurt-based fruit "smoothie"
 - vanilla yogurt, fruit juice, fruits (bananas, berry & fleshy types work best)
 - options:
 - *power-carbo* - add powderized oatmeal (do this in blender first)
 - add small amount of protein powder
 - add honey for sweetener

5. Pack ahead for "On the Run" times:
 - Peanut butter sandwich on whole/multigrain bread
 - *power-carbo* options: add honey and/or sliced bananas
 - Power Bars, NutriGrain Bars, Trail Mix Bars, Snickers
 - Granola, Cheerios (come in all kinds of flavors now)
 - Trail Mix (nuts, dried fruit, M&Ms or baking chips, granola)
 - Grapes/Raisins, Bananas, Oranges, Apples, Pears