

Performance Nutrition in Spring Training

It's Spring Training and Opening Day is just around the corner. You've probably been following a structured strength and conditioning program in your off-season to keep your muscles and level of endurance in top shape. It's time to transition your focus on performance on the field, and if you haven't been following a nutrition program, now is the time.

What you eat or don't eat WILL affect your level of play, whether you are a new or veteran player trying to obtain a roster position or a current player practicing before the season begins. You need to be in top physical shape. Baseball is a sport that requires speed, quickness, agility, intense mental focus with short spurts? The primary fuel for baseball is carbohydrates, but adequate protein also is important for muscle growth and maintenance.

As a professional player, a good nutrition program can give you a performance edge. Choosing the proper foods and beverages and selecting the correct time to consume them will help maintain a good level of energy before a game and better recovery after.

Obtaining enough calories from the right food sources, determining when to eat before and after a game and paying attention to proper hydration are all critical to your success. Choosing the right foods will provide your body with fuel from carbohydrates, protein and fats, all of which will supply ample levels of vitamins and minerals.

Adequate Calories:

What do I eat?

The first step in determining what to eat is to determine how much or how many calories you need each day. Too many calories will lead to weight gain. Too few calories will lead to weight loss and possibility loss of lean muscle tissue.

Calculate Your Total Calorie Needs

There are many ways to calculate your calorie needs. One way is to factor your Resting Energy Expenditure (REE) and level of physical activity. These calculations are just estimates, so it is important to consult with a qualified professional if you have questions or would like a more accurate

Step 1: Estimate REE

$$\text{Men } 10 \times \text{weight(kg)} + 6.25 \times \text{height(cm)} - 5 \times \text{age} + 5$$

$$\text{Women } 10 \times \text{weight(kg)} + 6.25 \times \text{height(cm)} - 5 \times \text{age} - 161$$

Step 2: Multiply REE by Activity Factor

	Activity Factors
Sedentary (little or no exercise)	1.200
Lightly active (light exercise/sports 1-3 days/week)	1.375
Moderately active (moderate exercise/sports 3-5 days/week)	1.550
Very active (hard exercise/sports 6-7 days a week)	1.725

Extra active (very hard exercise/sports and physical job)	1.900
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You should choose from a variety of food sources in order to obtain adequate vitamin and minerals. Carbohydrates, the primary source for energy, are found primarily in breads, cereals, rice and pasta as well as fresh fruits and vegetables. Proteins, responsible for building and maintaining muscles, are sourced from meat, chicken, milk and beans. Fats are necessary for multiple functions in the body and can be found in oils such as olive and canola oil and in salad dressings, nuts and seeds. Vitamins and minerals are needed for the body and assist with normal growth, body functions and overall health.

Example: A 35-year-old infielder with a height of 6'3" and a weight of 195 lbs will need 3000 - 3400 calories which can be obtained from the following food group categories:

- Grains – 10 oz
- Vegetables – 4 cups
- Fruits – 2.5 cups
- Milk – 3 cups
- Meat/Beans – 12-14 oz
- Oils/Fats – 8-11 teaspoons

Nutrient Timing:

Timing of meals/snacks - When to eat?

The transition from the off-season requires you to pay attention to what you eat and when you eat. You should try to eat five or six meals each day. Three of these should be large meals and the others should be snacks spaced evenly throughout the day.

To ensure you have enough fuel, consume a light snack 1-2 hours prior to practice or a game. After the game, eat a snack consisting of both carbohydrates and proteins within 30-minutes. Carbohydrates that come from whole grains, fresh fruits and vegetables are the most performance enhancing, as they supply the necessary fuel without added fat and calories.

Hydration

Fluids for

It is important to keep hydrated before and after the games. Dehydration is a loss of 2% of your body weight and can affect both physical and mental performance, this is especially important in hot and humid weather as this increases the loss of your body's fluid through sweat.

Drinking beverages that contain electrolytes (sodium and potassium) and carbohydrates not only helps maintain fluid and electrolyte balance, but also prevents energy levels from dropping during the game. The sodium and potassium help replace electrolytes lost through sweat, and sodium stimulates thirst and fluid retention. The carbohydrates provide energy. For events lasting longer than an hour you should consume beverages that contain electrolytes and 6% to 8% carbohydrate.

For best hydration, you should drink 2 cups of water 2 hours prior to the event. During the event you should drink 1 cup every 15-20 minutes, and afterwards, you should drink 2-3 cups for every pound of weight lost during practices or games.

Grains – 10 oz/day - try and obtain whole grain sources at least 3/day

Type	Serving Size = 1 oz
Pasta – whole grain	½ cup
Breads – whole grain	1 slice
Rice/noodles	½ cup
Oatmeal	½ cup
Breakfast Cereal	1 cup
Tortillas	1-2
Potatoes	1 small – size of a computer mouse

Vegetables – 4 cups/day

Category	Type	Serving Size = 1 cup
Dark green vegetables	Broccoli, spinach, dark green leafy lettuce	½ cooked, 1 cup raw 2 cups raw leafy greens
Orange vegetables	Squash, carrots, sweet potatoes	1/2 squash, 2 med carrot or 12 small
Dry beans and peas	Black, kidney, pinto, garbanzo, white	1 cup
Starchy vegetables	Corn, peas, potatoes	1 cup or 1 small potato the size of a computer mouse
Other Vegetables	Asparagus, cauliflower celery cucumber, green beans, peppers, mushrooms, tomatoes, vegetable juices, zucchini	1 cup raw 4oz juice

Fruits – 2.5 cups/day

Category	Type	Serving Size = 1 cup
Fruit	Apples Apricots Bananas	1 small apple (2.5") 1 cup banana or 1 med banana
Berries	Strawberries, Blueberries, Raspberries, Cherries	1 cup raw 8 large strawberries
Citrus	Grapefruit, Grapes, Nectarines, Oranges, Peaches. Pears, Papaya, Pineapple, Plums	1 med grapefruit 32 grapes 1 large orange/peach/pear 1 cup canned 2 large plums 1 cup raw- mango, papaya, pineapple
Melons	Cantaloupe, Honeydew, Watermelon	1 cup diced
Mixed Fruits	Fruit Cocktail	1 cup raw, diced, canned drained
Dried Fruit	Raisins, prunes, apricots	½ cup
Juice	Apple, Orange, Grapefruit	1 cup

Milk – 3 cups/day

Category	Type	Serving Size = 1 cup
Milk	Milk fat-free (skim) Milk low fat (1%)	1 cup of milk
Cheese	Hard natural cheeses: Cheddar, Mozzarella, Swiss, Parmesan, Ricotta, Cottage cheese Processed cheeses American	1 ½ ounces of natural cheese, or 2 ounces of processed
Yogurt	All yogurt	1 cup or yogurt

Meat/Beans – 12-14 oz/day

Category	Type	Serving Size = 1 cup
Meats	<i>Lean cuts of:</i> Beef, ham, lamb, pork, veal	1 ounce of meat (3oz of meat = the size of a deck of cards)
Poultry	Chicken, duck, turkey, ground chicken and turkey	1 ounce of poultry (3oz of meat = the size of a deck of cards)
Eggs	chicken eggs duck eggs	1 egg
Dry beans and peas	black beans, black-eyed peas, chickpeas (garbanzo beans), kidney beans, lentils, lima beans (mature)	¼ cup cooked dry beans
Nuts & seeds	Almonds, cashews, hazelnuts, peanuts, peanut butter, pecans pistachios, pumpkin seeds, sesame seeds, sunflower seeds, walnuts	½ ounce of nuts 1 Tablespoon peanut butter
Fish	<i>Finfish such as:</i> Catfish, cod flounder, halibut, mackerel, salmon, sea bass, snapper, swordfish, trout, tuna <i>Shellfish such as:</i> Clams, crab, lobster, mussels, oysters, scallops, squid., (calamari), shrimp	1 ounce of fish (3oz of meat = the size of a deck of cards)

Fats/Oils – 8-11 teaspoons/day

Category	Type	Serving Size = 1 teaspoon
Oils	Canola oil , corn oil, cottonseed oil, olive oil , safflower oil , soybean oil , sunflower oil	1 teaspoon
Foods high in Oil/Fat	Margarine, Butter, Mayonnaise, Salad Dressing	1 Tablespoon
Foods sometimes considered fats/oils	Nuts, peanut butter, olives, avocados	1 oz nuts 2 Tablespoons – peanut butter 4 large olives ½ medium avocado

Karen Todd is a Registered Dietitian, Certified Sports Nutritionist and Certified Strength and Conditioning Specialist with more than 20 years experience in exercise performance and nutritional product development and education working for top multinational companies including Nutrilite, Rexall, Roche/DSM, and Kyowa Hakko USA.

Todd has developed products in the sports nutrition, weight-loss, cosmetic/skincare and heart-health categories as well as many condition-specific formulations with herbal, amino acids and vitamin/mineral ingredients. Additionally, she has created educational programs for healthcare professionals and consumers, as well as labeling, packaging and advertising components, Todd holds Bachelor's of Science degrees in Scientific Nutrition and Food Science Technology from Texas A&M University and a Master's of Business Administration degree from Nova Southeastern University. She is avid multi-sport athlete.