

# ATHLETE'S PLATE

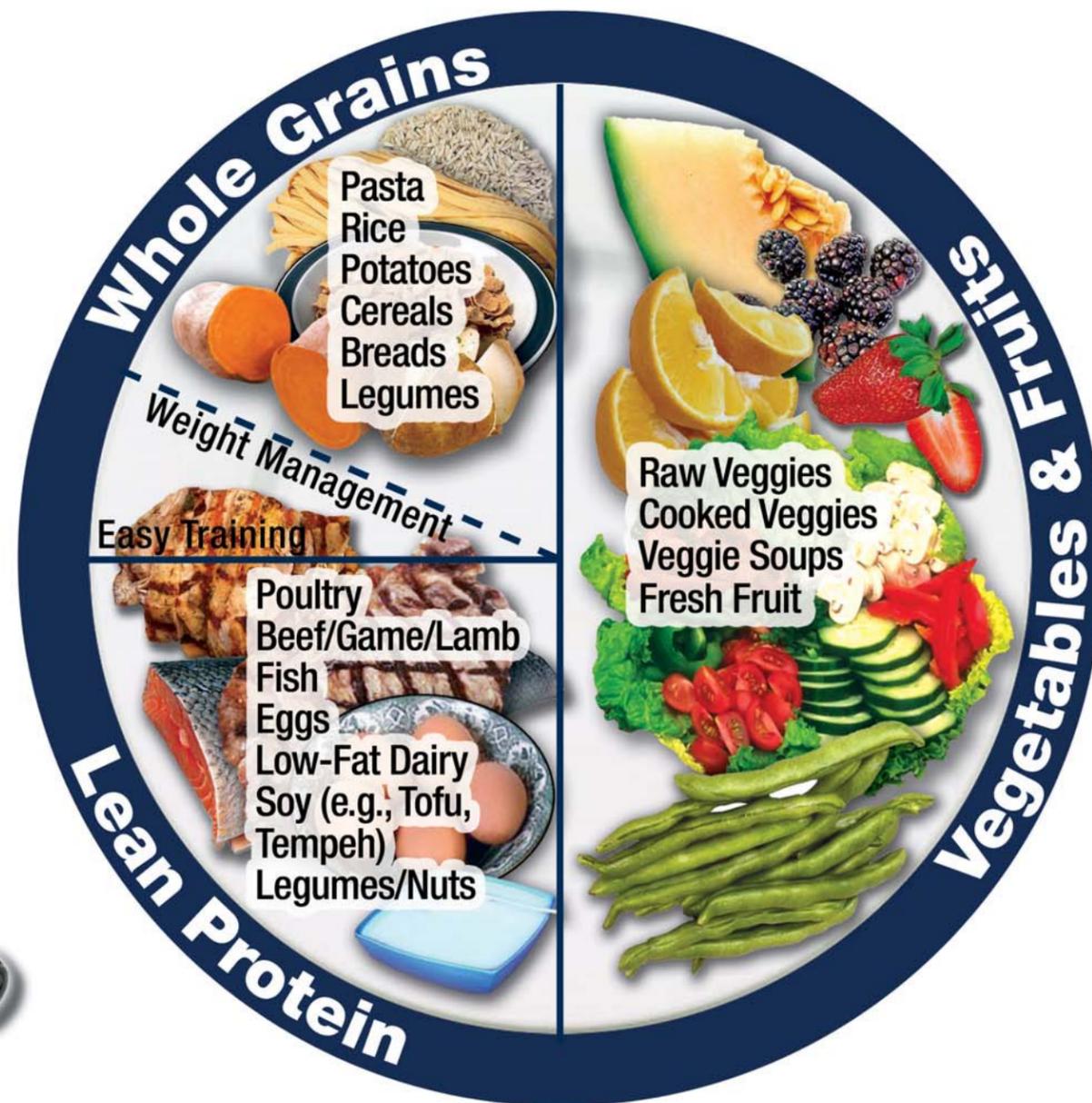
## EASY TRAINING / WEIGHT MANAGEMENT:

### FATS

1 Teaspoon



Avocado  
Oils  
Nuts  
Seeds  
Cheese  
Butter



### FLAVORS

Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup



# ATHLETE'S PLATE

Training volume and intensity vary from day to day and week to week along your training/competition plan. Eating your meals and fueling your workout or race should also be cycled according to how hard or easy it is. Consult with your sport dietitian to put the Athlete's Plate into practice!

## The Athlete's Plates are tools for you to better adjust your eating to the physical demands of your sport!

**EASY** An easy day may contain just an easy workout or tapering without the need to load up for competition with energy and nutrients. Easy day meals may also apply to athletes trying to lose weight and athletes in sports requiring less energy (calories) due to the nature of their sport.

**MODERATE** A moderate day may be one where you train twice but focus on technical skill in one workout and on endurance or strength in the other. The moderate day should be your baseline from where you adjust your plate down (easy) or up (hard/race).

**HARD** A hard day contains at least 2 workouts that are relatively hard or competition. If your competition requires extra fuel from carbohydrates, use this plate to load up in the days before, throughout, and after the event day.

### EASY TRAINING / WEIGHT MANAGEMENT:

**FATS**  
1 Teaspoon

**Whole Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables & Fruits**  
Raw Veggies  
Cooked Veggies  
Veggie Soups  
Fresh Fruit

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Beverages**  
Water  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored Beverages  
Coffee  
Tea

### MODERATE TRAINING:

**FATS**  
1 Tablespoon

**Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables**  
Raw Veggies  
Cooked Veggies  
Veggie Soups

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Beverages**  
Water  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored Beverages  
Coffee  
Tea

### HARD TRAINING / RACE DAY:

**FATS**  
2 Tablespoons

**Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables**  
Cooked Veggies  
Veggie Soups  
Raw Veggies

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Beverages**  
Water  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored Beverages  
Coffee  
Tea

The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

*For educational use only. Print and use front and back as 1 handout.*

# ATHLETE'S PLATE

## HARD TRAINING / RACE DAY:

**FATS**  
2 Tablespoons

**Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables**  
Cooked Veggies  
Veggie Soups  
Raw Veggies

**Fresh Fruit**  
Stewed Fruit  
Dried Fruit

**Water**  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored  
Beverages

**Coffee**  
**Tea**

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

Avocado  
Oils  
Nuts  
Seeds  
Cheese  
Butter

The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

*For educational use only. Print and use front and back as 1 handout.*

# ATHLETE'S PLATE

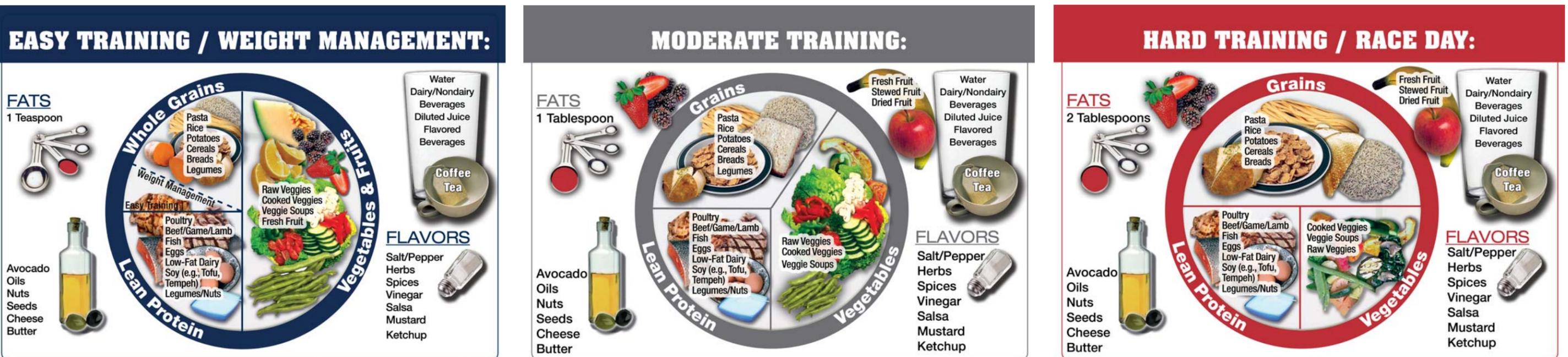
Training volume and intensity vary from day to day and week to week along your training/competition plan. Eating your meals and fueling your workout or race should also be cycled according to how hard or easy it is. Consult with your sport dietitian to put the Athlete's Plate into practice!

## The Athlete's Plates are tools for you to better adjust your eating to the physical demands of your sport!

**EASY** An easy day may contain just an easy workout or tapering without the need to load up for competition with energy and nutrients. Easy day meals may also apply to athletes trying to lose weight and athletes in sports requiring less energy (calories) due to the nature of their sport.

**MODERATE** A moderate day may be one where you train twice but focus on technical skill in one workout and on endurance in the other. The moderate day should be your baseline from where you adjust your plate down (easy) or up (hard/race).

**HARD** A hard day contains at least 2 workouts that are relatively hard or competition. If your competition requires extra fuel from carbohydrates, use this plate to load up in the days before, throughout, and after the event day.

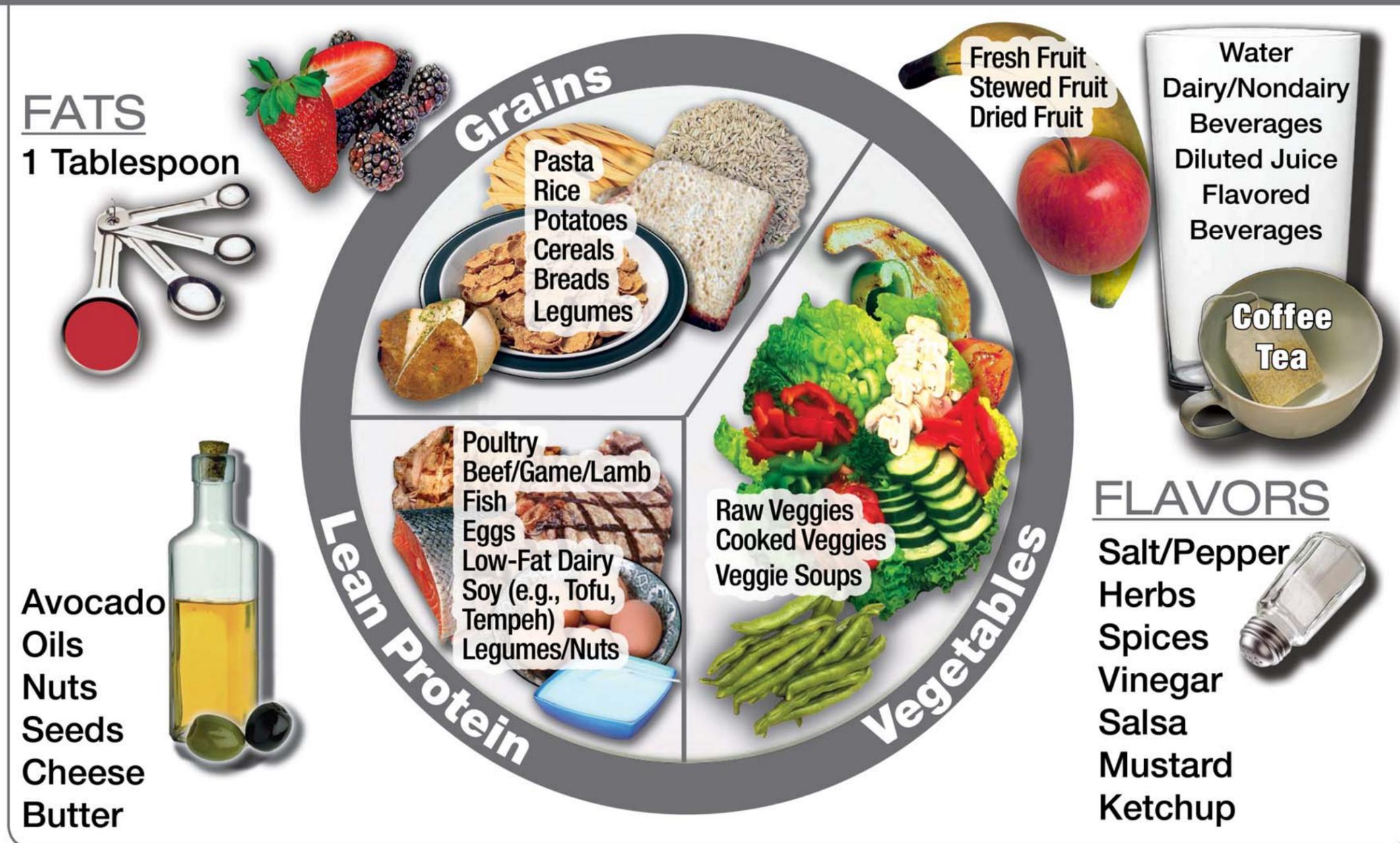


The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

*For educational use only. Print and use front and back as 1 handout.*

# ATHLETE'S PLATE

## MODERATE TRAINING:



The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

*For educational use only. Print and use front and back as 1 handout.*

# ATHLETE'S PLATE

Training volume and intensity vary from day to day and week to week along your training/competition plan. Eating your meals and fueling your workout or race should also be cycled according to how hard or easy it is. Consult with your sport dietitian to put the Athlete's Plate into practice!

## The Athlete's Plates are tools for you to better adjust your eating to the physical demands of your sport!

**EASY** An easy day may contain just an easy workout or tapering without the need to load up for competition with energy and nutrients. Easy day meals may also apply to athletes trying to lose weight and athletes in sports requiring less energy (calories) due to the nature of their sport.

**MODERATE** A moderate day may be one where you train twice but focus on technical skill in one workout and on endurance in the other. The moderate day should be your baseline from where you adjust your plate down (easy) or up (hard/race).

**HARD** A hard day contains at least 2 workouts that are relatively hard or competition. If your competition requires extra fuel from carbohydrates, use this plate to load up in the days before, throughout, and after the event day.

### EASY TRAINING / WEIGHT MANAGEMENT:

**FATS**  
1 Teaspoon

- Avocado
- Oils
- Nuts
- Seeds
- Cheese
- Butter

**Whole Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables & Fruits**  
Raw Veggies  
Cooked Veggies  
Veggie Soups  
Fresh Fruit

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Water**  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored  
Beverages

**Coffee**  
**Tea**

**Weight Management**  
**Easy Training**

### MODERATE TRAINING:

**FATS**  
1 Tablespoon

- Avocado
- Oils
- Nuts
- Seeds
- Cheese
- Butter

**Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads  
Legumes

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables**  
Raw Veggies  
Cooked Veggies  
Veggie Soups

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Water**  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored  
Beverages

**Coffee**  
**Tea**

**Fresh Fruit**  
Stewed Fruit  
Dried Fruit

### HARD TRAINING / RACE DAY:

**FATS**  
2 Tablespoons

- Avocado
- Oils
- Nuts
- Seeds
- Cheese
- Butter

**Grains**  
Pasta  
Rice  
Potatoes  
Cereals  
Breads

**Lean Protein**  
Poultry  
Beef/Game/Lamb  
Fish  
Eggs  
Low-Fat Dairy  
Soy (e.g., Tofu, Tempeh)  
Legumes/Nuts

**Vegetables**  
Cooked Veggies  
Veggie Soups  
Raw Veggies

**FLAVORS**  
Salt/Pepper  
Herbs  
Spices  
Vinegar  
Salsa  
Mustard  
Ketchup

**Water**  
Dairy/Nondairy  
Beverages  
Diluted Juice  
Flavored  
Beverages

**Coffee**  
**Tea**

**Fresh Fruit**  
Stewed Fruit  
Dried Fruit

The Athlete's Plates are a collaboration between the United States Olympic Committee Sport Dietitians and the University of Colorado (UCCS) Sport Nutrition Graduate Program.

*For educational use only. Print and use front and back as 1 handout.*



# Athlete Eating Guidelines

## Focus on the following nutrition principles year-round:

**Stay hydrated.** Your body is more than 60% water and your muscles depend on water to function properly. A dehydrated body cannot train or compete at its peak. Drink enough so that your urine looks like pale lemonade or apple juice and so that you are urinating frequently throughout the day.

**Fuel up before training.** Focus on eating lean proteins, fruits and vegetables and whole grains to ensure that your body is prepared for training. Try not to go into a training session with an empty fuel tank. Eat a meal 3-4 hours or a snack 1-2 hours before exercise.

**Boost your immune system.** Choose foods that are high in antioxidants such as fruits and vegetables to help keep your immune system healthy and reduce the amount of free radicals that your body builds up during high intensity training. Choose more colorful fruits and vegetables such as blueberries, strawberries, kiwis, oranges, broccoli, carrots and sweet potatoes.

**Limit fats.** Saturated and trans fats can cause inflammation which is the exact opposite of what elite athletes need. Stay away from foods that are processed or fried, and higher fat meats like chicken wings, bologna and pastrami. Choose non-inflammatory unsaturated fats such as olives, avocados, nuts, seeds, and salmon.

**Eat to recover.** Choose carbohydrate rich foods with some protein within 30-60 minutes of finishing a training session to help your body recover faster. Good choices after workouts include: peanut butter sandwich (half or whole), carton of chocolate milk, or a bowl of cereal with milk or yogurt.

**Sport products.** Sports bars, gels and drinks do have their place in an elite athlete's eating program. Be sure to not over-use these types of products, however, as they can deter body weight goals and can replace more beneficial calories from whole foods. Use sports products before, during or immediately after practice depending on your sport needs and goals.



## INFORMATION

A proper eating program is just as important to an elite athlete's success as a training program.

Think of your body as a car...

The foods and drinks you consume are the fuel. Elite athletes are like finely tuned cars that require high quality fuel to achieve optimal performance. Putting low quality fuel into your body can lead to poor health and sub-par performance.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)

# Branched Chain Amino Acids

## Information:

Branched-chain amino acids (BCCA), leucine, isoleucine, and valine, are three of the indispensable amino acids that the body cannot manufacture, and thus must come from the diet.

Amino acids are the building blocks of protein. They are necessary for several metabolic processes and stimulate the creation of new protein. Leucine in particular has been shown to promote muscle synthesis in the absence of carbohydrate energy; but only in small amounts.

Branched chain amino acids in the muscle are also easily converted to glucose in the liver and thus can be used as a limited fuel for working muscle during intense training.

## Application:

**Eat lean protein-rich foods at each meal and snack.** It is not necessary to supplement BCAA's. Choosing protein-rich foods of high biological value spread throughout the day will supply your body with ample amounts of branched chain amino acids.

**Include a small amount of high-quality protein in your pre- and post-exercise snacks.** Timing of protein intake may be as important as total daily intake. A protein-carbohydrate snack eaten before and after training will provide free amino acids that will, in combination with carbohydrate, begin the rebuilding and recovery of damaged muscle tissue.

## A Quick Look at Leucine:

Hydroxyl-methyl butyrate is the byproduct of leucine breakdown and has been popularized as HMB -a popular recovery supplement that promotes muscle synthesis.

*However, the effective dosage is 3g/day; which can easily be found in food...*

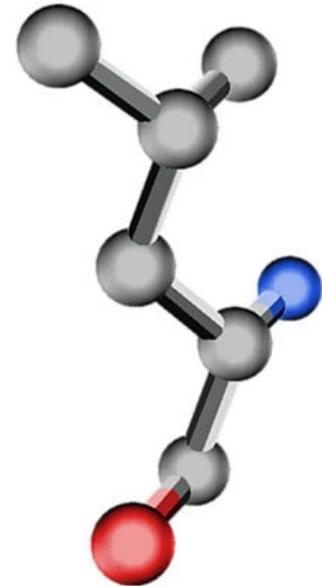
3 egg whites = 990mg leucine

1 cup 1% cottage cheese = 2880mg leucine

3oz tuna = 1740mg leucine

½ cup Edamame = 600mg leucine

3oz chicken breast = 3690mg leucine



## SOURCES OF BRANCHED CHAIN AMINO ACIDS

### Animal -

lean beef, pork, poultry, eggs, or fish.

### Dairy -

milk, yogurt, or low-fat cheese,

### Vegan -

Quinoa, soy, legumes (beans, peas, lentils, peanuts), and nuts and seeds

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# Eating Breakfast

## The importance of Breakfast:

**Breakfast is refueling-** the first opportunity to replenish glucose (blood sugar), glycogen (carbohydrate stored as fuel for the brain and muscles) and fluid.

**Breakfast eaters tend to have more strength and endurance.**

**Eating breakfast daily improves mental skills** athletes rely on, such as alertness, concentrations, problem-solving and memory.

**Eating breakfast can benefit an athlete's mood**, making it easier to stay calm relaxed, motivated and positive.

**Eating breakfast decreases the chances of inappropriate snacking later in the day.** Unplanned or out-of-control snacking can lead to higher intake of fat and calories, and unwanted weight gain.

**Breakfast provides a jump start** to meeting your daily requirements of key nutrients such a water, fiber, and more than 40 vitamins and minerals.

**Breakfast fuels and sustains the body through morning training sessions.** This helps decrease the ravenous hunger that athletes often experience later in the day.

**Breakfast eaters make better food choices throughout the day.**

## Eat breakfast daily! Great options include:

- Whole-grain cereal with fruit and 8 ounces of milk/yogurt.
- Waffles with peanut butter and a fruit smoothie.
- Oatmeal made with milk and dried fruit/nuts.
- One egg (not fried) and two pieces whole grain toast with fruit
- Smoothie made with milk/yogurt, fruit, honey, oats, ground flax, peanut butter, etc.
- Pancakes with fruit, maple syrup and a glass of milk.
- Bagel with peanut butter, small fruit smoothie.
- English muffin topped with melted cheese and tomato.
- Omelet made with vegetables and a piece of whole grain toast.



## INFORMATION

Breakfast is important for performance and health. It is an early-morning refueling stop for your body.

After 8-12 hours without a meal or snack, your body needs to be replenished with fuel and fluid.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# Calcium

## Information

Calcium is an essential and abundant mineral in the body. In fact 2-3 pounds of body weight is calcium, with 99% being stored in the bones and teeth.

*Calcium is essential for assisting in optimizing bone mineral density.*

- The major functions of calcium include bone metabolism, blood coagulation, blood pressure regulation, neuromuscular excitability, cellular adhesiveness, transmission of nerve impulses, maintenance and functionality of cell membranes, and activation of enzymatic reactions and hormonal secretions.
- The Recommended Daily Allowance (RDA) for Calcium intake is 1300 mg per day for teenagers, 1000 mg per day for adults 19-50 and 1500 mg per day for women who are amenorrheic. The upper limit of calcium intake is 2500 mg/day and toxicity symptoms include: constipation, and urinary stone formation.
- Calcium is found mostly in dairy products, such as milk, yogurt, and cheese. Green leafy vegetables also provide a source of calcium along with calcium fortified foods like OJ and cereal.
- Vitamin D, lactose, glucose and a healthy digestive system enhance calcium uptake while fiber, and caffeine may have small effects on calcium loss. Phytates, phosphorus compounds found primarily in cereal grains, legumes, and nuts can also bind with calcium and interfere with its absorption in the body.



## Application

**Eating an adequate amount of calcium** is essential for optimal performance. It will help increase your bone mineral density and help blood clot faster to improve recovery at times of injury.

**Adequate calcium intake is important** for bone injury rehabilitation (such as stress fractures). Since most of the calcium in the body is stored in the bones, it is important to maintain a high calcium intake during this healing process in order for the body to be able to repair the bone.

**Weight bearing exercise**, especially if your sport is low impact, is important to stimulate bone cell activity and increase calcium deposition.

## INFORMATION

Bone tissue in the skeleton, also known as bone mass, can continue to grow until around age 25. However, up to 90 percent of peak bone mass is acquired by age 18 in girls and age 20 in boys, which makes youth the best time to “invest” in bone health.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



## Calcium portions in common foods:

### Dairy:

Milk, whole	1 cup	291 mg
Milk, skim	1 cup	302 mg
Milk, evaporated, skim	1/2 cup	371 mg
Yogurt, frozen, regular	1/2 cup	143 mg
Yogurt, fruited, nonfat	1 cup	323 mg
Yogurt, plain, whole milk	1 cup	296 mg
Cheddar cheese, natural, regular	1 oz	148 mg
Cheddar cheese, natural, lowfat	1 oz	118 mg
American cheese, regular	1 oz	142 mg
Cottage cheese, regular	1/4 cup	32 mg
Cottage cheese, lowfat	1/2 cup	77 mg
Ice cream, regular	1/2 cup	72 mg
Ice milk	1/2 cup	92 mg
Cream cheese, regular	2 Tab	23 mg

### Fruit and Juice:

Orange, fresh	1 medium	52 mg
Orange juice, fortified with calcium	3/4 cup	215 mg
Blackberries, fresh	3/4 cup	35 mg
Raspberries, fresh, red	1/2 cup whole pieces	14 mg
Tangerine, fresh	1 medium	12 mg
Rhubarb, fresh, raw	1/2 cup	118 mg
Figs, dried, uncooked	5 each	137 mg
Apricot, dried, uncooked	5 halves	8 mg

### Beans:

Soybeans, cooked from dried or canned	1/2 cup volume	88 mg
Tofu (soybean curd), lowfat	4 oz	25 mg
Tofu (soybean curd), regular	4 oz	119 mg
Beans, white, cooked from dried or canned	1/2 cup volume	80 mg
Chickpeas/garbanzo beans, canned	1/2 cup	40 mg

### Vegetables:

Green or string beans, cooked	1/2 cup	31 mg
Broccoli, cooked	1/2 cup, chopped	40 mg
Cabbage, green, cooked	1/2 cup volume	231 mg
Spinach, cooked	1/2 cup	131 mg
Turnip greens, cooked	1/2 cup	99 mg
Artichoke	1 medium	54 mg
Okra, cooked	1/2 cup sliced	77 mg
Kale, cooked	1/2 cup volume	90 mg
Bok choy, cooked	1/2 cup volume	79 mg

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



### Grains:

Biscuit – baking powder, from mix	1 medium	105 mg
Muffins, banana, plain, from bakery	1 medium	82 mg
Bread, cornbread, from mix	1 piece	111 mg
Pancake, white flour, plain	1 each	11 mg
Amaranth, cooked	1/4 cup, dry	75 mg
Lentils, cooked from dried	1/2 cup	19 mg
Whole wheat bread	1 medium slice	20 mg

### Seafood:

Salmon, cooked from fresh/frozen	3 oz edible portion	13 mg
Salmon, canned	3 oz edible portion	181 mg
Sardines, canned in water, drained	1 ounce	21 mg
Sardines, canned in oil, drained	1 ounce	108 mg
Clams, cooked from fresh	3 oz edible portion	78 mg
Oyster, cooked from fresh	3 oz edible portion	77 mg
Shrimp, cooked from fresh	3 oz edible portion	33 mg

### Other:

Almonds, raw	1/4 cup whole pieces	94 mg
Eggs, boiled	1 large	25 mg

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

*[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)*

# Dietary Fat and Cholesterol

## Information:

Cholesterol is a fat-like substance that is produced naturally by the liver from fats and the breakdown of carbohydrate and protein. It is used in the body for making cell membranes & some hormones.

Because the body makes cholesterol, very little is needed from foods eaten.

*Cholesterol is only found in animal products!*

---

Eating a diet high in saturated fat can increase the body's total cholesterol which may increase the risk for coronary heart disease, stroke etc.

There are different types of cholesterol with LDL (low density lipoprotein) and HDL (high density lipoprotein) being the two predominant ones.

LDL cholesterol leads to build up of cholesterol in the arteries and the higher the LDL level in your blood the greater your risk of developing heart disease.

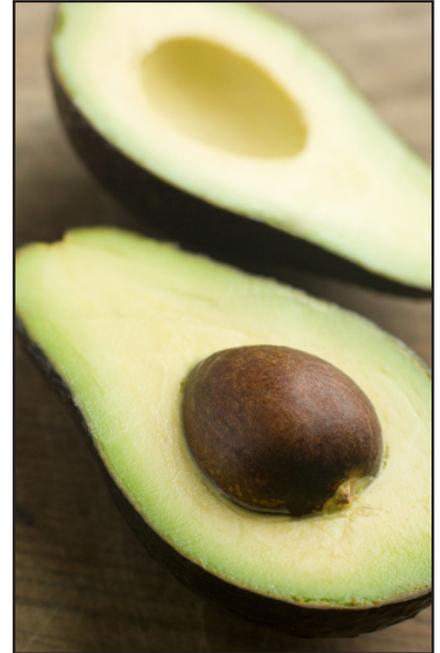
HDL cholesterol carries cholesterol from other parts of your body back to your liver. High levels of HDL can lower your chance of developing heart disease.

---

Fats and lipids play critical roles in the overall functioning of the body, such as in digestion and energy metabolism. Specifically, human fat stores are a major source of energy for skeletal muscle during aerobic exercise.

Fats and lipids also have important structural roles in maintaining nerve impulse transmission, memory storage, and tissue structure. It also helps to maintain body temperature and protect body organs from trauma

Fat soluble vitamins A, D, E, and K and carotenoids depend on fat for appropriate delivery and absorption. veggies and legumes.



## OPTIMAL PERFORMANCE AND HEALTH:

Maintain a moderate overall fat intake and be very cautious when offered products marketed to athletes claiming to "improve fat oxidation." Research clearly documents that exercise training is the best method to improve usage of fat---a trained individual is a better fat user than an untrained individual.

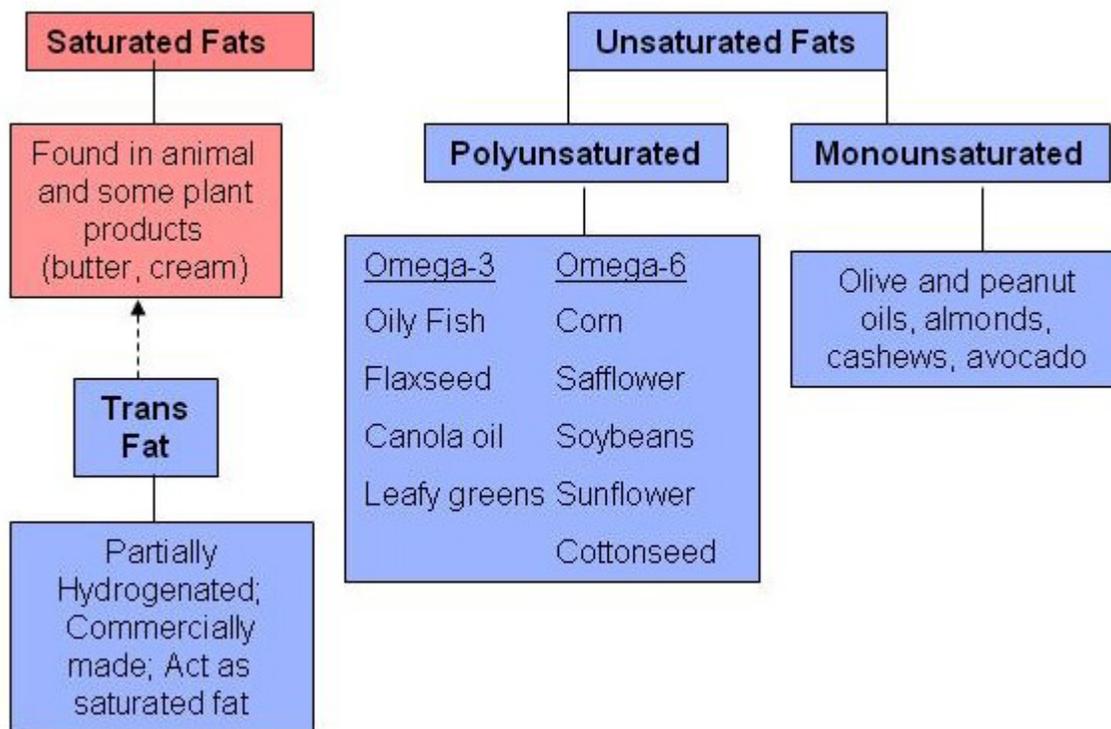
*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)

## Application:

- Eat a lower saturated fat diet (less than 7% of total calories) by having no more than 1 gram of saturated fat per 100 calories.. Limit foods high in saturated fats such as fast food, commercial baked goods, snack foods and full fat meats and dairy products.
- Eat more monounsaturated and polyunsaturated fats.
- Eat foods with plant sterols and sterols which are found in fruits, vegetables, nuts, seeds and commercially prepared butter-like table spreads.
- Dietary fat is classified according to it's chemical structure. Short chained fatty acids are considered saturated fat and are usually solid in structure. Medium chained fatty acids are monounsaturated fats and tend to be more liquid in structure and long chain fatty acids are polyunsaturated fats and liquid in structure.
- Chain length and degree of saturation are important to consider because it determines function within the body, effect on health and determines method of digestion and absorption.

Begin to recognize where different types of fat occur within your food choices:



*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# Reading Food Labels

Serving sizes are standardized for foods. Pay attention to how many there are in a food product.

Saturated and trans fats increase inflammation and slow recovery.

Sodium is essential for optimal hydration before, during and after training.

Complex carbohydrates and dietary fiber can stabilize blood sugar, prevent insulin spikes and keep body weight under control.

Nutrition Facts	
Serving Size 8 fl oz (236mL)	
Servings Per Container: 1	
Amount per serving	
Calories 170    Calories from Fat 25	
	% Daily Value
<b>Total Fat 3g</b>	5%
Saturated Fat 1.5g	8%
Trans Fat 0g	
<b>Cholesterol 5mg</b>	2%
<b>Sodium 150mg</b>	6%
<b>Total Carbohydrate 26g</b>	9%
Dietary Fiber 0g	0%
Sugars 25g	
<b>Protein 9g</b>	14%
Vitamin A 10%	Vitamin C 6%
Calcium 30%	Iron 0%

% Daily Value does not pertain to elite athletes.

Too much cholesterol can contribute to high blood cholesterol levels and be detrimental to health and performance.

Lean protein is necessary for muscle recovery after hard training sessions.

Vitamin and mineral dense foods are important during high intensity training.

## Example

Nutrition Facts SKIM MILK	
Serving Size 1 cup (247g)	
Servings Per Container: 1	
Amount per serving	
Calories 83    Calories from Fat 2	
	% Daily Value
<b>Total Fat 0g</b>	0%
Saturated Fat 0g	1%
Trans Fat 0g	
<b>Cholesterol 5mg</b>	2%
<b>Sodium 103mg</b>	4%
<b>Total Carbohydrate 12g</b>	4%
Dietary Fiber 0g	
Sugars 12g	
<b>Protein 8g</b>	
Vitamin A 10%	Vitamin C 4%
Calcium 30%	Iron 1%

VS

Nutrition Facts 2% MILK	
Serving Size 1 cup (247g)	
Servings Per Container: 1	
Amount per serving	
Calories 122    Calories from Fat 43	
	% Daily Value
<b>Total Fat 5g</b>	7%
Saturated Fat 3g	15%
Trans Fat 0g	
<b>Cholesterol 20mg</b>	7%
<b>Sodium 100mg</b>	4%
<b>Total Carbohydrate 11g</b>	4%
Dietary Fiber 0g	
Sugars 12g	
<b>Protein 8g</b>	
Vitamin A 9%	Vitamin C 1%
Calcium 29%	Iron 0%

More calories

Higher fat and cholesterol

Same protein and calcium



# Performance

**Eating a diet high in saturated or trans fats will promote inflammation which is detrimental to recovery. These types of fat are found in higher fat dairy products, meats, fried foods and processed foods/snacks.**

**Sodium promotes better hydration before, during and after training or competition. Endurance athletes may require more sodium than non-endurance athletes but remember that too much sodium can have a negative impact on health and could contribute to high blood pressure in athletes who are salt-sensitive.**

**Eating protein during the day will help replenish stores that are lost during higher intensity or longer duration training. In addition, eating protein with carbohydrate immediately following workouts will help speed recovery. Choose sources such as lean meats, dairy products and soy products.**

**Vitamins and minerals are always important for elite athletes but even more so during higher volume and intensity training times of the year. Foods that are rich in vitamins and minerals also contain antioxidants which are important for elite athletes. Antioxidant rich foods such as fruits and vegetables will keep the immune system in top shape for performance.**

# Weight Management

**Eating complex carbohydrates and at least 25 grams of fiber each day will help stabilize insulin levels and help maintain a good performance body composition. Be sure to eat frequently throughout the day and focus on fiber-rich foods such as whole grains and fruits and vegetables.**

**% Daily Value is based on 2000 or 2500 calorie meal plans and is not applicable to elite athletes. Calories consumed should vary based on weight and body composition goals and training cycle.**

**For athletes wanting to reduce body fat, it is important to eat more frequently throughout the day. Eating every 3-4 hours and focusing on lean protein, fruits and vegetables and whole grains will help improve body composition.**

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*



# SPORTS NUTRITION

## *Fluid for Athletes*

Fact Sheet  
**Hydration**

September, 2011

### **Drink Up!**

These are times when your fluid requirements are higher.

- ⇒ Heat
- ⇒ Humidity
- ⇒ Hard training
- ⇒ Beginning of heat acclimatization

Also watch your hydration status during...

- ⇒ Travel
- ⇒ Altitude training
- ⇒ Surgery
- ⇒ Illness
- ⇒ Recovery days

Consult with your sports dietitian to identify individual fluid replacement strategies using sweat rate testing and USG monitoring.

Optimal hydration supports daily training and recovery. Dehydration's effects can take hours to days to recover. Athletes need to develop strategies to monitor and adapt their hydration plan to intensity, duration, and frequency of training, fitness level, and environmental conditions.

At a temperature of 68-70F an exercise-induced body weight loss of 1-2% does not appear to affect performance of less than 90-min. Once dehydration exceeds 2% body weight loss and exercising for

greater than 90-min, performance decrements will likely occur.

### Signs and Symptoms of Dehydration

- ⇒ Lack of concentration
- ⇒ Early fatigue
- ⇒ High perceived exertion in training
- ⇒ Trouble tolerating heat
- ⇒ Delayed recovery
- ⇒ Muscle cramps

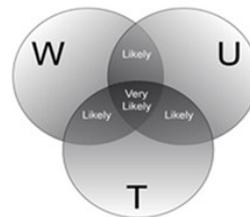
## *Monitoring Daily Hydration Status*

Three indicators of dehydration can be used to monitor athlete's daily hydration status: 1) color of urine, 2) waking weight and 3) thirst. If two or more of these simple markers are outside the normal range, it is likely the athlete is dehydrated.

The color of urine (U) is associated with urine specific gravity (USG, or the urine's concentration). USG measures the concentration of particles in the urine, with >1.020 indicating dehydration. USG should be assessed at first void of the morning, fol-

lowed by a nude body weight (W). Using the urine chart below, athletes should aim for an AM urine color of less than 4 (pale yellow or the color of lemonade). Thirst is assessed subjectively as a "yes" or "no", recorded at the same time as U and W. Dehydration is indicated by a U of  $\geq 4$ , W change of more than 1% (fluctuates to a greater degree in women before and during the menstrual cycle) and T is "yes."

Urine Color	#
	1
	2
	3
	4
	5



Date	Nude weight this AM	Nude weight yesterday AM	Weight change	Thirsty Yes/No?	Urine color $\geq 4$ Yes/No?	Dehydrated Yes/No?
8/2/11	144	143	-0.7%	No	2 (No)	No
8/5/11	145	142	2%	Yes	4 (Yes)	Yes
Your date here						



# SPORTS NUTRITION

## *Monitoring Daily Hydration Status*

The best fluid to consume is water; however sports drinks have their benefits too because they combine fluid, electrolytes, and carbohydrate. Here are some suggestions to help increase fluid intake at training or competition.

- Drink cool (~59F) fluids in hot weather and warm fluids in cold weather. Fluid temperature can affect your body's ability to regulate heat and cold.
- Sodium is critical for optimal cellular rehydration and should be included in drinks when athletes do not have the opportunity to consume electrolytes naturally found in food
- Flavored sport drinks taste better which stimulates drinking, and thus, may improve hydration.
- Low fat milk and flavored milk have also been shown to be effective rehydration solutions.

## *Daily Hydration Plan*

Time	What's happening	Fluid Intake
7am	Breakfast	Drink ~1-2 cups of water along with other fluids
9am	Training	Use body weight change during training to calculate fluid requirements 1lb loss in weight = 16 oz or 2 cups of sweat loss. Aim to replace ~80 - 100% of sweat losses. For long session consume sport drinks or water with gels or chews (note: these typically do not contain much sodium)
10:30am	Post training	Consume fluid to replace 150% of sweat lost in training Drink some low fat milk or flavored milk (see USOC Recovery Fact Sheet)
Midday	Lunch	Sip regularly. Drink water, diluted fruit juice, low fat milk
3pm	Mid-afternoon	Drink 1-2 cups (8-16 oz) of tea, ice tea, water, or sport drink (if you have another workout)
7pm	Evening meal	Drink ~2 cups (16 oz) of water
9-10pm	Before bed	Drink 1 cup (8 oz) of water herbal tea, or low fat milk
Note: Athletes should take the same precautions with sport drinks as with other sugar-containing beverages to prevent cavities and these include, 1) not swishing the sport drink and using a straw, 2) following intake with sugar free gum or any dairy products and 3) brushing teeth when possible		

## *Can You Overhydrate?*

It is possible to consume more fluid than is lost during exercise. This can cause gastric discomfort. However, most importantly, drinking too much increases the risk for hyponatremia (i.e., dilution of plasma sodium levels), also called water intoxication. Sodium maintains blood pressure and is needed for nerves and muscles to perform properly. When plasma sodium levels drop from an imbalance of fluids, confusion, fatigue, headaches, muscle weakness, and nausea can occur. Water can actually enter the brain and cause swelling. Although not common, it is seen during ultra-endurance events lasting >4 hours and is most likely due to an over-consumption of water, resulting in weight gain. Signs and symptoms of hyponatremia are strikingly similar to dehydration. Thus, monitoring body weight before and after exercise is the best way to avoid overhydration. Athletes should not gain weight from drinking too much.



# Minerals

## Information:

Similar to vitamins, minerals also assist in many body processes and are crucial in muscle contractions, energy expenditure and immune function. Minerals are divided into two groups: Macrominerals, which are required in amounts greater than 100 mg/d and microminerals, also known as trace elements, are required in amounts less than 100 mg/d. Elite athletes have an increased need for both macro and micro-minerals because of the higher stress that is placed on the body during training. The following is a list of all of the minerals, their functions and food sources.

### Macro minerals:

Mineral	Function in Body	Food Sources
Calcium	Growth and maintenance of bones and teeth, important for heart and skeletal muscle function, nerve impulse transmission, blood clotting, and release of some hormones	Dairy products, dark green leafy vegetables, calcium fortified foods/beverages
Phosphorus	Aids in bone strength and structure, acid-base balance, B-vitamin function	High protein foods, whole grains, carbonated drinks
Magnesium	Aids in protein synthesis, glucose metabolism, bone structure, muscle contraction	Milk and milk products, meat, nuts, whole grains, dark green leafy vegetables, fruit
Sodium	Aids in water balance, acid-base balance, muscle contraction	Processed and canned foods, cheese, soy sauce, (almost everything)
Chloride	Aids in water balance	Table salt
Potassium	Aids in water balance, glucose delivery to cells	Citrus fruits, potatoes, vegetables, milk, meat, fish, bananas

### Micro minerals:

Mineral	Function in Body	Food Sources
Iron	Aids in oxygen delivery, essential for aerobic metabolism	Meat, fish, poultry, shellfish, eggs, whole grains, vegetables, nuts
Iodine	Aids in metabolism control by forming thyroid hormone	Iodized salt and seafood
Selenium	Antioxidant	Meat, fish, seafood, whole grains, nuts
Copper	Aids in iron transportation	Meat, fish, poultry, shellfish, eggs, nuts, whole grains, bananas
Manganese	Aids in energy metabolism, fat synthesis, bone structure	Whole grains, legumes, green leafy vegetables, bananas
Zinc	Aids in energy metabolism, protein synthesis, immune function	Meat, fish, poultry, shellfish, eggs, whole grains, vegetables, nuts
Chromium	Aids in glucose control	Brewer's yeast, mushrooms, whole grains, nuts, legumes, cheese

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# SPORTS NUTRITION

## RECOVERY

### Why is Recovery Important?

As a high performance athlete, you've chosen a career where taking care of your body is your job. When you are training and competing full time, there are several physiological consequences that occur as a result of hard exercise. A sound recovery nutrition protocol will ensure you can optimize training adaptations and perform at 100% of your body's potential for the next training bout or in preparation for competition.

Physical Consequences of Hard Training	The 4 R's of Recovery Nutrition
Dehydration	<b>Re-hydrate</b> with fluids and electrolytes
Depletion of glycogen (carbohydrate stored in muscle and liver)	<b>Replenish</b> muscle glycogen stores with carbohydrates
Breakdown of muscle	<b>Repair</b> and regenerate muscle tissue with high quality protein
Cell damage and inflammation	<b>Reinforce</b> your immune system with nutritious, fresh foods (e.g., fruits, vegetables, whole grains, fish, nuts, olive oil)

### Key Considerations for Recovery Nutrition

- ❑ How quickly you should refuel and how much you need depends on your training intensity, volume, timing of your next training bout and your body weight. This means your daily approach to recovery fueling may change throughout the week or season.
- ❑ For **hard training** research shows that timing is critical and refueling with the following nutrients will optimize recovery:
  - **1g of carbohydrate per kg of body weight (0.5g of carb per 1lb)**
  - **15-20g of protein (high biological value from whey, found mainly in animal sources)**
  - **24oz (3 cups) fluid per pound of sweat lost from session**
  - **Electrolytes from a sport drink or some salty food**
- ❑ For **moderate training**, timing and balance of nutrients is also important, but less stringent. In **easy training** recovery can occur through your next meal or a small post-training snack.
- ❑ Successful recovery will only occur with proper planning! Think about your training sessions ahead of time, so you can plan and pack the appropriate fuels with you.



# SPORTS NUTRITION

## Recovery Nutrition Guidelines

Training Type	Nutrition Guidelines	Examples of Recovery Nutrition
<p><b>Hard training</b></p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>Higher volume and/or intensity phases</li> <li>Physical adaptation training (ie. heavy lifting, altitude training)</li> <li>Competition or simulated competition days</li> <li>Multi-day training bouts</li> </ul>	<ul style="list-style-type: none"> <li>Refuel <u>immediately</u> after training</li> <li>Ensure a minimum of 1 g/kg carbs, 15-20g protein, and fluids/electrolytes lost are replaced.</li> <li>Eat next meal within 1 hour of initial recovery fuel.</li> <li>Add a snack 1 hour later.</li> <li>Regular fueling and hydration throughout the day.</li> <li>Planning is essential!</li> </ul>	<p><b>45 - 60kg (110-132 lbs)</b></p> <ul style="list-style-type: none"> <li>16oz chocolate milk + water</li> <li>6oz non-fat Greek yogurt + fresh fruit + water</li> <li>Natural ingredient sport bar (fruit/nut) + glass of skim milk + water</li> <li>Recovery mix (carbohydrate + protein mixed)</li> </ul> <p><b>70-80kg (154-176lbs)</b></p> <ul style="list-style-type: none"> <li>24 oz chocolate milk + water</li> <li>Sport bar (45-50g carb/15-20g pro) +16oz sport drink</li> <li>2 x 6oz non-fat Greek fruit yogurt + 1 cup fruit juice + water</li> <li>Recovery mix + Banana</li> </ul> <p><b>90-100+kg (198-220+kg)</b></p> <ul style="list-style-type: none"> <li>24 oz chocolate milk + 1 banana</li> <li>Sport bar (50g carb/15-20g pro) + 24oz sport drink</li> <li>Recovery mix (aim for 90 g of carbs and 25 g of protein) + banana</li> </ul>
<p><b>Moderate training</b></p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>Single session with training the next day</li> <li>Maintenance of fitness/strength</li> </ul>	<ul style="list-style-type: none"> <li>Refuel within <u>30-60 minutes</u> after training session.</li> <li>Balanced snack with carbs, protein and fluids</li> <li>Eat next meal within 2 hours</li> <li>Regular fueling and hydration in the day.</li> </ul>	<ul style="list-style-type: none"> <li>8-16oz chocolate milk</li> <li>6oz non-fat Greek yogurt + fruit + water</li> <li>Natural ingredient sport bar (35-40g carbs and 15-20g pro) + water</li> <li>PB &amp; J + glass of milk</li> <li>Recovery mix + water</li> <li>8oz of fruit and yogurt smoothie + water</li> </ul>
<p><b>Easy training</b></p> <p><b>Characteristics:</b></p> <ul style="list-style-type: none"> <li>One session in day, followed by a rest day</li> <li>Recovery day</li> <li>Athlete in a weight loss phase</li> </ul>	<ul style="list-style-type: none"> <li><u>Timing is less critical</u>, but be sure to refuel within 1-2 hours following exercise.</li> <li>Top up glycogen storage with a small high carb snack or having your next core meal</li> </ul>	<ul style="list-style-type: none"> <li>Water followed by core meal</li> <li>8oz PowerAde</li> <li>Fresh Fruit + Water</li> <li>Fruit Leather Snack + Water</li> <li>4oz Fruit Juice + Water</li> <li>4-8oz Chocolate Milk or Soy + Water</li> <li>Plain Greek yogurt + Water</li> </ul>



# SPORTS NUTRITION



# Sport Nutrition Products

There are many sports nutrition products on the market and it is quite confusing at times to make a good choice based on your nutrition needs for your training cycle and body weight goals. Below is a description of the three main sports nutrition products.

## Sports Drinks

Sports drinks are flavored beverages that contain measured amounts of carbohydrate and electrolytes and are typically consumed before, during and after training sessions. They will help maintain hydration and carbohydrate replacement for optimal performance. Look for a product that supplies the following per 8 ounces: 14-15 grams carbohydrate and at least 100 mg sodium. Drink about 15-20 oz of sports drink 1-2 hours before training, 6-12oz of sports drink every 15-20 minutes during training >1 hour and 24 oz of sports drink after training for every pound of body weight lost.

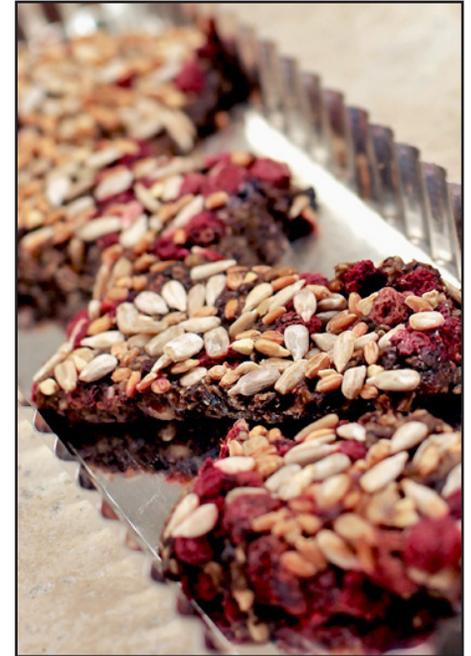
## Sports Bars

Energy bars are designed to provide athletes a compact source of calories, carbohydrate and protein before, during or after training sessions when other solid foods are not well-tolerated or available. Although the size and composition of these energy bars varies, it is typically best to consume one that contains 30-100 grams of carbohydrate and 6-20 grams of protein. If used before training, eat a bar that is higher in carbohydrate (60-100 grams), moderate in protein (10-15 grams) and low in fat (<6 grams) 3-4 hours before and a bar that is lower in carbohydrate (30-40 grams), protein (<8 grams) and fat (<3 grams) 1-2 hours before. The higher carbohydrate and protein bars are appropriate after exercise.

## Sports Gels

Energy gels are semi-solid forms of mostly carbohydrate that help to maintain blood sugar levels during training and competition. Most energy gels will contain at least 22 grams of carbohydrate and sometimes vitamins and minerals. If used during exercise, consume 1-2 gels per hour with 4-8 ounces of water for each gel eaten.

Refer to a qualified Sport Dietitian (RD: Registered Dietitian; CSSD: Board Certified Specialist in Sports Dietetics) for more information about choosing a product and deciding on a timing protocol that is best for your needs.



## INFORMATION

Athletes should rely mostly on real food to supply their energy needs throughout the day.

Sports nutrition products such as sports drinks, sports bars and gels have been designed to supplement an athlete's eating program before, during, and after training and not be a replacement or a substitute for food.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# Sports Drinks

## Information:

Athletes who exercise for extended periods of time both during training and at events can lose a substantial amount of sweat. When you sweat, you lose both water and sodium, as well as deplete the carbohydrate stores that help fuel your exercise. Sports drinks contain water, carbohydrates, sodium, and other electrolytes such as potassium and calcium

## What's in a Sports Drink?

**Carbohydrates** provide the fuel for muscles and the brain and they contribute to the palatability of the drink. Ideally the sport drink should have a carbohydrate concentration of 4-8%. Higher carbohydrate concentrations impair gastric emptying and can cause gastric distress.

**Sodium** is the main electrolyte in sport drinks. It increases fluid uptake, retention and it also helps with salt replacement in heavy or salty sweaters. Sodium also encourages fluid intake via the thirst mechanism. The sodium concentration of most sport drinks are in the range of 100mg/8oz. If you will be exercising hard in the heat (particularly for more than 3 hours) and anticipate losing significant amounts of sweat, consume a salty food within 2-4 hours pre-exercise to help stimulate thirst and retain the consumed fluids. Immediately post exercise then consume salty foods to help replace the salt lost in the exercise bout.

**Other ingredients** can be found in sport drinks which assist in flavor, free radical defense, energy metabolism, and recovery. Athletes should read the labels of their sport drinks and make sure they are free of any banned substances on the WADA Prohibited List.

## When should you consume sports drinks?

Sport drinks are typically consumed before, during and post training sessions and competitions. They help maintain hydration status and provide carbohydrate replacement for optimal performance.



## WHAT'S THE BEST SPORTS DRINK?

Fluid requirements vary remarkably between athletes and between exercise bouts. Fluid losses are affected by genetics, body composition, fitness, environment and exercise mode and intensity.

The best sport drink also depends on personal taste, and tolerance. Choose sports drinks that are 40 to 80 calories (10 to 20g carb) and 55 to 110 gm sodium per 8 ounces.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# Supplement Certifications

	 <a href="http://www.uspverified.org">www.uspverified.org</a>	 <a href="http://www.consumerLab.com">www.consumerLab.com</a>	 <a href="http://www.nsf.org">www.nsf.org</a>
<b>Summary of Usefulness to Elite Athlete</b>	<p>Tests for overall integrity. Does NOT test for banned substances</p>	<p>Tests for overall integrity. Athletic Banned Substances Screening Program (ABSSP). Does test for WADA banned substances.</p>	<p>Tests for overall integrity. NFL/NFLPA Supplement Certification. Does test for NFL banned substances.</p>
<b>Specifically Tests For</b> <b>*see page 2 for definitions</b>	<p>Integrity Purity Dissolution Safe Manufacturing</p>	<p>Identity Strength Purity Availability</p>	<p>Identity Purity Formula Evaluation Good Manufacturing Practices Testing for Metabolites Chain-of-Custody Procedures</p>
<b>One-Time Testing or Continual Monitoring?</b>	<p>Testing continually based on a random sample obtained on the open market</p>	<p>Non-ABSSP: Tested every 12 months based on a random sample obtained on the open market.</p>	<p>Each product lot (batch) undergoes analytical testing.</p>

## Internet Links

<b>US Anit-Doping Agency (USADA)</b>	<p><a href="http://www.usantidoping.org">www.usantidoping.org</a> Click on "Guidebook" for link to list of banned substances.</p>
<b>World Anti-Doping Agency (WADA)</b>	<p><a href="http://www.wada-ama.org/en/">www.wada-ama.org/en/</a> Click on "Prohibited List" for link to list of banned substances.</p>

**Continued...**



## Definitions

<b>Word/Phrase</b>	<b>Meaning</b>
<b>Integrity</b>	All listed ingredients are in the declared amount.
<b>Purity</b>	The supplement does not contain harmful levels of contaminants (heavy metals, pesticides, bacteria, molds, toxins, etc.).
<b>Dissolution</b>	The supplement will break down and release ingredients in the body.
<b>Safe Manufacturing</b>	Assurance of safe, sanitary, well-controlled and well-documented manufacturing and monitoring processes.
<b>Identity</b>	The product meets recognized standards of quality and the level of quality claimed on the label.
<b>Strength (quantity)</b>	The product contains the amount of ingredient claimed on the label.
<b>Availability</b>	The product breaks apart properly so that it may be used by the body.
<b>Formula Evaluation</b>	Review of product formulations to screen for potential banned substances.
<b>Good Manufacturing Practices (GMP)</b>	Production facilities inspected to ensure controls in place to avoid introduction of, or cross-contamination with, banned substances.
<b>Chain-of-Custody Procedures</b>	Each product lot tested for banned substances must be collected by an NSF auditor. All products pending testing are held under locked quarantine until the NSF notifies the manufacturer of successful test results.
<b>Testing for Metabolites</b>	At the client's request, NSF will oversee testing to determine if any ingredients metabolize into prohibited substances.

## Disclaimer and General Safety Advisory

- Information in this handout does not replace medical or legal advice.
- Consult a physician or health professional before taking any supplements.
- Review USADA and WADA Banned Substances List before taking any supplement.
- Most supplements have chemical and biological activity which may have side effects and may interact with certain medications and/or foods.

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)



# The Vegetarian Athlete

Any athlete, regardless of sport, intensity of training, gender, or age can successfully choose a vegetarian diet without risking nutrient shortages or deficiencies. However, such a lifestyle choice will require careful planning to maintain adequate energy for training and to reduce the risk of associated vitamin and mineral deficiencies.

*\*\*\*The key to a successful vegetarian diet is understanding which plant foods contain similar nutrients as the foods you are no longer consuming; and which nutrients may be at risk.*



## Nutrients at risk for the vegetarian athlete:

Iron  
Zinc  
Vitamin B-12  
Calcium  
Omega 3s  
Protein

## Nutrient Information and Sources:

*If you do have a known deficiency, it is important to consult your physician to determine appropriate dietary supplements regimen.*

**Zinc** - Necessary for protein synthesis, and supporting immune function, this mineral can be found in whole grains, fortified foods as well as nuts and seeds

**Vitamin B-12** - B-12 is necessary for protein synthesis and aids in energy metabolism but it is only found in animal products, so vegan athletes should look for foods fortified with B-12 or consume a multi-vitamin that contains B-12.

## FORMS OF VEGETARIANISM

### Vegan -

consisting of only plant-based foods

### Lacto-ovo -

includes milk, milk-based foods, and eggs;

### Pesca Vegetarian -

add fish, eat dairy products and eggs

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)

*Continued...*



**Iron** – The most bio-available form (heme) is found in meat, but vegetables contain a form of iron (non-heme) that can promote optimal iron stores if consumed regularly.

**Calcium** - Recommended Adequate Intake (AI) for athletes between ages of 19 and 50 years is 1000 - 1500mg. Athletes not eating dairy can find calcium in fortified foods, soy as well as some veggies and legumes.

**Omega 3s** – This essential fatty acid which promotes good heart health and inflammation can be found in high concentrations in nuts/seeds like almonds, walnuts, flax and sunflower seeds.

**Protein** – Depending upon the individuality of the sport, phase of training etc, most athletes will need 1-2g protein/kg body weight

### Common Sources of Iron

Food	Serving Size	Iron (mg)
Beef, round tip (cooked)	3 oz	2.5 H
Chicken, breast (roasted)	3 oz	0.9 H
Shrimp (cooked moist heat)	3 oz	2.6 H
Kidney beans, canned	½ cup	2.6 NH
Tofu, reg	3 oz	6.4 NH

### Common Sources of Calcium

Food	Serving size	Calcium (mg)
Skim milk	1 cup	306
Low-fat yogurt	1 cup	372
Cottage cheese	2 cup	304
Soy Milk	1 cup	333
Broccoli (raw)	1 cup	60
Kale (cooked)	1 cup	180
Cheerios	1 cup	122

### Common Sources of Protein

Food	serving size	Protein (g)
Peanut butter	2 tbsp	7
Almonds	¼ cup	8
Sunflower Seeds	¼ cup	6
Tofu	½ cup	20
Soy milk	1 cup	6-10
Beans (black, kidney etc)	½ cup	7-10
Edamame	½ cup	10
Quinoa, cooked	1 cup	9



# SPORTS NUTRITION

## TRAVEL NUTRITION

### *Nutritional Requirements for Training & Competition*

#### **Pack for Performance**

Traveling internationally poses serious challenges for athletes. When it comes to food preparation, follow these tips to fuel your body for competition.

#### Get organized and plan ahead

- Pack a travel nutrition kit to bring with you
- Book special meals on plane if needed (24-48 hrs prior to departure with airline)
- Investigate the availability of foods at destination
- Identify good meal options at your destination
- Plan ahead for eating out
- Carry a water bottle at all times
- Adopt a meal pattern on travel days
- Shop at large shopping center for necessary essentials
- Be aware food and water safety

#### What You Will Need:

Pack 1 nutrition travel kit per room for international travels, containing the following:

- Non-perishable food
- Electric hot pot or electric burner
- Food and refrigerator thermometer
- International plug adapter
- Measuring cups, spoons
- Tupperware w/ lid (microwave safe)
- Eating utensils
- Antibacterial wipes
- Antibacterial dish soap
- Cleansing brush
- Hand sanitizer



## SPORTS NUTRITION

### **Carbohydrates**

- Instant rice, noodles, couscous, quinoa, lentils
- Shelf-stable bread
- Instant mashed potatoes
- Instant oatmeal, cream of wheat
- Cold cereals such as muesli and granola
- Granola/protein bars
- Snack crackers
- Fruit snacks (dried, dehydrated, canned)
- Powdered sports drink
- Instant soup mixes
- Instant breakfast or meal replacement powder

### **Protein (Shelf Stable)**

- Non-fat dry milk
- Packed tuna, salmon, or chicken
- Peanut or almond butter
- Tofu
- Dried hummus mix
- Jerky (turkey, beef, buffalo)
- Nuts and seeds (raw, unsalted)
- Recovery drink mix
- Protein powder

### **Other**

- Spice blends
- Salt and pepper
- Boullion Cubes
- Olive oil (plastic jar)
- Honey
- Coffee/tea bags

### **Hot Pot Recipes**

#### ***Super Oatmeal***

Combine one scoop of instant soy milk (or non-fat milk powder) with oatmeal package and cook in hot pot according to package directions. Add one tablespoon of peanut butter. Meal for 1 in 1 minute!

#### ***Santa Fe Chicken***

Cook southwest ready rice in hot pot according to package directions, add 1 pouch chicken breast. (Serves 2 in less than 2 minutes)

#### ***Cranberry Couscous***

Cook garlic herb couscous in hot pot according to package directions, add in 1 pouch of chicken breast and 1/3 cup of dried cranberries. (Serves 2 in about 5 minutes)



## SPORTS NUTRITION

### Precautions when Traveling (*\*Extremely important when traveling to high risk areas like Asia, South America, the Middle East, and Eastern Europe*)

- Drink bottled, boiled or carbonated beverages
- Avoid ice cubes or anything made with tap water
- Avoid brushing teeth with tap water
- Avoid washing dishes with tap water
- Make sure food is fully cooked and served hot
- Avoid dairy products unless you know they have been pasteurized
- Don't eat from street vendors
- Avoid raw foods like sushi

### Food Handling

- Persons handling food should wash hands with bottled water and soap or use hand sanitizer before and after handling food.
- Hair should be tied back and out of face while preparing meals.
- Clean clothes should be worn while cooking to prevent contamination.
- If ill, persons should not handle the food
- Be careful about cross-contamination of food

### Food Storage

- Perishable foods need to be refrigerated
- Buy and eat fresh food immediately if you don't have proper storage
- Discard perishables left at room temperature for longer than 2 hrs
- Discard leftovers if not consumed within 1-2 days
- Make sure refrigerator temperature is 40 F degrees or below
- Store cooked foods above uncooked foods
- Do not use foods past expiration dates



# Vitamins

## Information:

Vitamins have many effects in the body and specific to athletes, they are involved in muscle contractions and energy expenditure. Elite athletes have an increased need for vitamins because of the higher stress that is placed on the body during training. The following is a list of all of the vitamins, their functions and food sources.

### *Water-soluble:*

Vitamin	Alternate Name	Function in Body	Food Sources
Thiamin	Vitamin B <sub>1</sub>	Aids in carbohydrate metabolism and nervous function	Whole grain cereals, beans, pork, enriched cereals
Riboflavin	Vitamin B <sub>2</sub>	Aids in energy metabolism, protein metabolism, skin and eye health	Dairy, dark green leafy vegetables, whole grain cereals, enriched grains
Vitamin B <sub>6</sub>	Pyridoxine	Aids in carbohydrate, fat and protein metabolism, protein synthesis	Meats, whole grain cereals, enriched cereals, eggs
Folic Acid	Folate	Aids in formation of DNA and red blood cells	Green leafy vegetables, beans, whole grain cereals, oranges, bananas
Vitamin B <sub>12</sub>	Cobalamin	Aids in energy metabolism, protein synthesis	Animal foods, fortified cereals
Niacin	Nicotinic Acid	Aids in energy metabolism	Milk, eggs, turkey, chicken, whole grains, meat, fish
Pantothenic Acid	Pantothenate	Aids in energy metabolism	All foods except processed and refined
Biotin	None	Aids in glucose and fat synthesis	Egg yolks, legumes, dark green leafy vegetables
Vitamin C	Ascorbic Acid	Aids in iron absorption, collagen synthesis	Fruits and vegetables



### Information:

Fat soluble vitamins are stored in the body whereas water soluble vitamins are not. Therefore, it is important to not take too high of a dose of fat soluble vitamins as there could be risk of toxicity and take water soluble vitamins frequently since they are not stored and are excreted in the urine.

### Fat-soluble:

Vitamin	Alternate Name	Function in Body	Food Sources
Vitamin A	Retinol	Aids in maintaining healthy cells, eyes and immune system	Liver, cheese, dark green and brightly pigmented fruits and vegetables
Vitamin D	Cholecalciferol	Aids in absorption of calcium and phosphorus	Fish liver oil, eggs, canned fish, fortified milk, margarine
Vitamin K	Phylloquinone	Aids in formation of blood clots and assists with bone strengthening	Dark green leafy vegetables, vegetable oils
Vitamin E	Tocopherol	Aids in antioxidant protection of cells	Poly- and monounsaturated vegetable oils, margarine, fortified cereals, eggs

*This material was developed by professional sports nutritionists at the United States Olympic Committee. For more information and additional sport performance resources, visit:*

[www.teamusa.org/resources/usoc-sport-performance](http://www.teamusa.org/resources/usoc-sport-performance)