

CREATING THE OPTIMAL TRAINING DIET

Your daily food choices have significant impact on your performance, health and recovery. But it is not just about what to eat. How you portion and time your food intake are also important practices which make the difference between an ordinary way of eating and a peak performance way of eating.

Adequate Calories

While in regular training, eating adequate calories is most important. The demands of training can be tough and draining; eating enough food is essential to completing longer exercise bouts at the intensities outlined in your training program. Knowing the right amount of calories to consume depends on many factors including the intensity and frequency of your training, as well as your height and current weight and goal weight, if applicable. Knowing your body composition is also helpful in determining your daily calorie recommendation. A registered dietitian can help you determine this. The following chart can help guide you assuming you do not need to lose weight.

Activity Description	Calories per pound	Example for 150 pound person
Mild activity with no purposeful exercise or training	12 - 14	1800 - 2100
Moderate activity with up to one hour daily of moderate intensity exercise	15 - 17	2250-2550
High activity of one to two hours daily of moderate intensity	18 - 24	2700-3600
Very high activity of several hours training daily	25 - 30	3750 - 4500

Fuel of Choice

Carbohydrate is the fuel of choice while protein and fat play important roles as well. Carbohydrates are stored in blood as glucose, and in the liver and muscle as glycogen. Muscle glycogen stores far more calories than liver or blood glycogen and therefore needs regular replacement. In general athletes should consume approximately 60% of daily calories from carbohydrate, 20% from protein and 20% from fat. See CHART

Calories	Grams Carbohydrates (60%)	Grams Protein (20%)	Grams Fat (20%)
1800	270	90	40
2400	360	120	53
3000	450	150	67
3600	540	180	80
4200	630	210	93

Water

Do not take water for granted. Water is basic, as it is an essential part of your daily training diet. Anywhere from 60 to 70 percent of your body weight is water. Muscle tissue is also high in fluid content, with about 70 to 75 percent of your muscle comprised of water. Most of your body's water is stored inside your body cells, giving them their shape and form. Water is the primary component of sweat and therefore plays a major role in body temperature regulation. At rest, urine output represents our greatest loss, while sweating during exercise can incur significant fluid loss, especially for the endurance athlete. In general your body loses about 64-80 ounces of fluid daily through the urine, feces, skin and lungs. Your daily water requirements are based upon the amount of calories you consume. Your body requires 1 milliliter of water per calorie. Athletes who consume 3500 calories require 3500 milliliters of fluid, or approximately 14 1/2 cups of fluid daily.

Unfortunately thirst is not a good indicator of the amount of fluid that your body requires, during exercise or at rest. When you are thirsty, you have already lost 1 percent of your body weight through fluid loss. Symptoms of dehydration are listed in the following chart.

Symptoms of Dehydration	
Mild Dehydration	Severe Dehydration
Dark urine	Delirium
Decreased appetite	Difficulty swallowing
Fatigue	Dry, shriveled skin
Heat intolerance	Muscle spasms
Light-headedness	Sunken eyes
Small amount of urine	
Thirst	

Fluid Requirements

Dehydration is one of the most significant problems that occur during endurance exercise, and it can put a halt to your training long before glycogen depletion will stop you. Even the "best" drinkers will replace only about 80 percent of sweat losses. At all costs, avoid starting training or competition in a dehydrated state. This can lead to a slower rate of gastric emptying and in extreme cases can result in bloating and vomiting.

One of the best gauges of your hydration efforts during exercise is to weigh yourself before and after training. Every pound of weight loss represents 16 ounces of fluid loss. But to compensate for urine losses when rehydrating, you should consume 24 ounces of fluid for every pound decrease in weight. For example a 5 pound difference in before and after exercise weights means 120 ounces (15 cups) needs to be replaced.

Hydration Guidelines:

- consume 16 ounces of fluid before bedtime
- consume 16 - 24 ounces (mostly caffeine-free) in early morning
- consume 8 - 10 ounces every hour during the day before training
- hyperhydrate one hour before training with 16 - 24 ounces (sports drinks may be useful here)
- consume another 8 - 16 ounces, twenty minutes prior to training
- consume 4 - 8 ounces every 15 minutes during training (start drinking early)

Pre-Exercise Guidelines

The most important factor in good performance is how the body is fuelled on a daily basis, not the pre-exercise meal or snack. Eating breakfast within an hour of getting up and re-fuelling every 3 - 6 hours throughout the day can help maintain energy levels. Athletes should make pre-competition nutrition part of their training program. Then, on competition day, you will be both physiologically and psychologically ready to compete. Eating a new food on the day of competition poses the risk of impaired performance. The timing of the pre-exercise meal or snack depends on the eating schedule during the day, the length of the activity and individual tolerance.

The pre-exercise snack generally doesn't provide energy to working muscles unless you're exercising for more than 1 ½ to 2 ½ hours. If the glycogen stores are full, it will provide energy for 1 ½ to 2 ½ hours of moderate intensity exercise.

Purpose of the pre-exercise snack:

- To prevent hunger during exercise
- To prevent low blood sugar and its symptoms of fatigue, dizziness and blurred vision
- To provide adequate fluid

Characteristics of the pre-exercise meal or snack

- High in carbohydrate, but avoid sugary foods or drinks as well as high fiber foods
- Low to moderate in protein
- Low in fat

When to eat:

- Generally allow 3-4 hours for a large meal to digest
- 2-3 hours for a smaller meal
- 1 hour or less for a snack

Suggestions:

- low fat crackers or cookies (soda crackers, arrowroots, graham wafers, melba toast)
- fruit
- dry cereal
- bread, bagel

During Exercise Guidelines

For exercise that lasts less than an hour, water is all that is needed. For exercise lasting longer than an hour, consuming carbohydrates may help to improve performance. Either solid foods or liquids can be consumed, however liquids tend to be tolerated best.

Suggestions:

- Sports drinks (those that contain 6 - 10 grams of carbohydrate per 100 mls)
- Diluted juice (1 part juice, 1 part water)
- Soda crackers, fruit, fig newtons

Post-Exercise Guidelines

Attention should be given to replenishing glycogen stores after exercise. This is most important if one exercises day after day or regularly exercises for more than an hour. It takes about 24 hours to replenish glycogen stores in the body. Muscles will store energy or glycogen the quickest right after exercise. The longer one waits to eat, the longer it takes to replenish glycogen stores. High carbohydrate foods replenish glycogen stores.

Suggestions:

- Start consuming carbohydrates 15-30 minutes after exercise
- Fruit, juice, breads, pasta, milk

Recent research suggests a combination of carbohydrate and protein enhances glycogen repletion right after exercise so you may want to try to eat some protein afterwards also (milk, yogurt, cheese and crackers, meat sandwich).

INC Power Granola

Yield: About 6 cups (serving size: about 1/2 cup)

- 2 cups regular oats
- 1/3 cup ground flaxseed
- 2 tsp ground cinnamon
- 1/3 cup orange juice
- 1/3 cup honey
- 1/4 cup packed brown sugar
- 2 tsp canola oil
- 1 tsp vanilla extract
- Cooking spray
- 1/3 cup dried cranberries
- 1/3 cup roasted pumpkin seeds
- 1/3 cup raw almonds
- 1/3 cup mini semi-sweet chocolate chips

Preheat oven to 300°. Combine oats, flaxseed and cinnamon in a medium bowl.

Combine orange juice, honey, and brown sugar in a small saucepan. Cook over medium heat just until sugar dissolves, stirring frequently. Remove from heat; stir in oil and vanilla. Pour honey mixture over oat mixture, stirring to coat. Spread mixture in a thin layer onto a jelly-roll pan coated with cooking spray. Bake at 300° for 10 minutes; stir well. Bake an additional 10 to 15 minutes or until golden brown.

Spoon granola into a bowl; stir in dried cranberries, roasted pumpkin seeds, almonds and mini chocolate chips. Cool completely.

Note: Store completely cooled granola in an airtight container at room temperature for up to 2 weeks.

Fuel Foods

Here are fuel-foods which will aid in recovery and provide healthful nutrients for sore tired muscles

- fresh fruit - plums, apples, peaches, nectarine
- dried fruit without sugar-coating
- 100% juice with pulp
- colorful veggies - carrots, broccoli, peppers
- low-sodium vegetable juice
- whole grain crackers
- whole grain bagels
- whole grain pasta, bulgur, quinoa, buckwheat, barley
- whole grain cereal
- oatmeal
- whole grain waffle
- Fig Newtons
- low fat graham crackers
- light popcorn
- low-fat granola (less than 3g fat per serving and no trans fat)
- non-fat or low-fat yogurt
- non-fat or low-fat milk/soymilk
- low-fat cottage cheese
- peanut butter/jelly sandwiches on whole wheat bread
- vegetarian pizza
- bean burrito
- homemade macaroni & cheese
- pasta, barley, bean soups (instant dried soups like *Fantastic & Nile Spice* brand)