

Nutrition for Recovery

Next to training, nutrition is **THE** most *modifiable* and *controllable* factor contributing to optimal exercise.



- ### Nutrition Influences
- muscle function
 - nervous system
 - immune system
 - muscle recovery
 - injury prevention
 - **ENERGY!**

Macronutrients

Carbohydrate
Maintain blood glucose levels during exercise
and replace muscle glycogen. Only source of energy for brain and nervous system (3-5g/lb of body weight per day)

Protein
amino acids chains that are essential for recovery, adapting muscle fibers, and replenishing energy stores (0.55-0.75g/lb of body weight per day)

Fat
a necessary source of energy, fat-soluble vitamins, and essential fatty acids. (0.5g/lb of body weight per day)

Fluids
important for health and optimal performance (enough to offset losses, 16-24oz/lb lost)

Reading a Food Label

Sample label for Macaroni & Cheese

1 **Start Here** →

2 **Check Calories**

3 **Limit these Nutrients**

4 **Get Enough of these Nutrients**

5 **Footnote**

| Nutrition Facts | |
|---|-----------------------|
| Serving Size 1 cup (228g) Servings Per Container 2 | |
| Amount Per Serving | |
| Calories 250 | Calories from Fat 110 |
| | % Daily Value* |
| Total Fat 12g | 18% |
| Saturated Fat 3g | 15% |
| Trans Fat 3g | |
| Cholesterol 30mg | 10% |
| Sodium 470mg | 20% |
| Total Carbohydrate 31g | 10% |
| Dietary Fiber 0g | 0% |
| Sugars 5g | |
| Protein 5g | |
| Vitamin A | 4% |
| Vitamin C | 2% |
| Calcium | 20% |
| Iron | 4% |

* Percent Daily Values are based on a 2,000 calorie diet. Your Daily Values may be higher or lower depending on your calorie needs.

| | Calories 2,000 | 2,500 |
|--------------------|-------------------|---------|
| Total Fat | Less than 65g | 80g |
| Sat Fat | Less than 20g | 25g |
| Cholesterol | Less than 300mg | 300mg |
| Sodium | Less than 2,400mg | 2,400mg |
| Total Carbohydrate | 300g | 375g |
| Dietary Fiber | 25g | 30g |

6 **Quick Guide to % DV**

- 5% or less is Low
- 20% or more is High



The above food pyramid was designed for an **AVERAGE** person. An athlete needs **MORE** calories, grains, fruits, fats, and hydration.

“To eat is a necessity, but to eat intelligently is an art”

-La Rochefoucauld

Nutrient timing, or the time at which you consume certain nutrients, can greatly enhance the body's responses to exercise.



Studies have shown proper recovery nutrition improves time to exhaustion, and gains in strength, muscle fiber size, and lean body mass.

Pre-Competition

A meal or snack should be low in fat and fiber to aid gastric emptying and reduce gastrointestinal distress, be relatively high in carbs to maximize maintenance of blood glucose, be moderate in protein, and consist of familiar foods.

Ideally eat 200-300g of carbs 3-4 hours prior, and another 50-75g of carbs 1-2.5 hours prior. If contest is early in the morning be sure to eat a good meal and night-time snack, and 300 calories of carbs one hour prior to competition.

During Competition

The main goal of nutrient consumption during competition is to provide carbohydrates for maintenance of blood glucose levels, especially for endurance or events in extreme environments.

Consumption levels may vary, but it is a good idea to consume 30-60g of carbs per hour of exercise. This can be started soon after an activity begins in smaller amounts every 15-20 minutes. It is good to avoid fat and select food that is familiar to the athlete.

Post-Competition

After exercise, dietary goals are to provide adequate electrolytes, energy, and carbohydrates to replace muscle glycogen and ensure rapid recovery.

A carbohydrate intake with a high glycemic index carbs of 0.5-0.7 g/lb of body weight during the first 30 minutes after exercise and again every 2 hours for 4-6 hours will be adequate to replace glycogen stores. Protein consumption of about 10g will provide the amino acids necessary for building and repairing muscle tissue. Fat amounts should be low or nonexistent

Pre-Competition

Consume sufficient fluid to maintain hydration. Too often athletes enter competitions dehydrated.

Drink 10-20 oz of fluid 4 hours prior and another 5-10oz if no/ concentrated urine output. If the contest is early in the morning consume 12-16oz of water one-hour prior to competition.

Hydration

During Competition

During exercise, the goal is to replace fluid losses and provide electrolytes when the sweat rate is high/long due to endurance or extreme environments.

Drink 4-8oz after warm-up and in 15-20 minute intervals (1 oz \approx 1 normal swallow).

Post-Competition

After competition look to consume 150% of the fluid lost per activity.

Drink 16-24oz of fluid for every pound of weight loss. If a scale is not available, aim for at least 24oz of fluid. Do not drink in extreme excess of sweating rate, as this can lead to hyponatremia.