



# NUTRITION FOR ENDURANCE ATHLETES



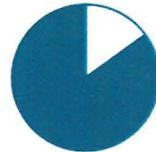
## What and When?

### Carbohydrates

- Carbohydrates are the primary fuels your muscles use for exercise; think of it the same way we use gasoline in our cars
- During regular endurance exercise you can burn 60 – 80 grams of carbohydrate for every hour you exercise
- 60% of your diet should come from carbohydrates. In other words, when looking at a plate of food, a little more than half of the food should be carbohydrates
- Good carbohydrate sources include rice, grains, fruits, pastas, and potatoes
- Foods that come packaged and/or contain high amounts of sugar are not good carbohydrate choices

### Protein

- Hours of exercise require your muscles to be able to recover
- Optimal recovery requires good nutrition and rest. Without proper recovery, your body will become tired and sore. This may make you more prone to sustain an injury
- Protein should make up around 15 – 20% of the calories you eat every day or what one large piece slice of pizza would look like when taken from a full pizza
- A 110 – 130 pound athlete should ingest around 100 – 115 grams of protein each day
- Don't eat TOO MUCH protein. Replacing carbohydrate with protein may limit your body's ability to recover and have a negative impact on your health and performance
- Good protein sources include chicken, turkey, beef, fish, dairy (milk, cheese, cottage cheese), and eggs
- Vegetables contain small amounts of lower-quality protein



### Fat

- A very important nutrient! DON'T AVOID or eliminate fat from your diet
- Your brain, nerves, and muscles all NEED fat to function
- Minimize your intake of saturated fats and trans fats. Cookies, donuts, and potato chips all contain high amounts of saturated and trans fats



### Timing

- Eat more frequent, smaller meals
- Eat breakfast every day, NO exceptions!
- Consume a small amount of protein with every meal and eat something **as soon as possible** after every workout. For every gram of protein, eat 3 – 4 grams of carbohydrates
- Eat a snack like this within 30 min of every workout !
- WHEN to eat may be just as important as WHAT to eat

## Hydration

### Background

- Hotter/more humid = More sweat = More dehydration
- Your body has to work much harder to cool itself when it's hot and humid
- With no plan in place to monitor fluid loss and to replace lost fluid, dehydration can reduce your performance in as little as one hour of exercise, maybe faster!
- The longer you exercise, the more you will sweat. This further increases fluid loss and makes dehydration even worse

### Strategy

- Don't wait until you are thirsty; dehydration has already reduced your performance
- You should drink fluids:
  - All day long
  - Before it's time to exercise
  - During your workout, practice or competition
  - After your workout, practice or competition
- Three things need to be replaced when your body sweats for a prolonged period of time:
  - 1)The fluid (water) you are sweating
  - 2)The carbohydrate your muscles are burning for fuel
  - 3)The electrolytes found in your sweat
- Drinking only water replaces the fluid you are losing
- Drinking a sports drink replaces all three of these things
- Soda, energy drinks, and alcohol do NOT provide adequate amounts and present additional challenges to your body
- If exercising for more than one hour, especially when hot, do NOT drink just water, you should drink a sports drink
- After exercise, chocolate milk is a good alternative to replace lost nutrients and help your body to recover



## Supplementation

### Let's Make a Deal

- Focus your time and energy on good food and building healthy habits in your diet
- Consider supplementation only after:
  - 1) You regularly eat breakfast on a daily basis
  - 2) You regularly eat three meals and two healthy snacks each day
  - 3) You only use a meal-replacement as a snack and NOT a meal
  - 4) You identify five quick healthy snacks that are available to you at all times
  - 5) You only use one serving of whey protein at a time (20 – 25g)
  - 6) You begin eating fresh fruit or whole grains with protein shakes or sports drinks



### Carbohydrate

- The most important consideration is to replace the fluid, carbohydrate and electrolytes you lose while exercising
- Regular ingestion of a sports drink before, during and after a workout or competition is critically important
- Drink 2 cups of a sports drink within 30 min of starting a workout
- Drink 1.5 – 2 cups of a sports drink every 15 min during exercise
- For every pound lost, drink 2 cups of a sports drink or alternate with water

### Protein is Important for Recovery

- Adding a little protein to a carbohydrate source may help speed up recovery and minimize muscle damage
- Whey protein is a popular, high quality form of protein found in milk
- 15 – 25 grams of a high quality protein source provide adequate nutrients to maximally stimulate recovery and muscle growth
- Ingesting 3 – 4 grams of carbohydrate for every gram of protein may be the most beneficial and an important combination for recovery



### Other Possibilities

- Caffeine may help improve focus and endurance exercise performance
- Energy drinks providing high amounts of sugar and caffeine may not be the best choice for health and performance; limited research suggests performance increases
- Nitric oxide stimulators have ZERO studies to show they help improve strength, muscle gains or anything related to a positive outcome
- Creatine is not ideally suited for endurance activities and may stimulate an increase in your body weight that may make it harder to compete effectively