

## EAT TO COMPETE



### TYPES OF FUEL... CARBS, FATS, PROTEINS

Since most rowers train and compete at or above 65% of their maximum aerobic capacity (80% max heart rate), their body uses primarily the anaerobic system to fuel their working muscles.

- ✓ Carbohydrate is the only fuel burned efficiently by the anaerobic system
- ✓ Rowing can quickly deplete the athlete's carbohydrate supply
- ✓ The body's ability to store carbohydrates is limited
  - Muscles can store 375 grams of carbohydrate (glucose) and the liver can store 100 grams
- ✓ Rowers typically have multiple events within a short time period; therefore, it is essential they replenish their two fuel tanks (muscle and liver) with a complex carbohydrate rich diet
- ✓ 60% is the recommended level of carbohydrates for an athlete's diet
- ✓ A low carb diet may result in early fatigue and a decrease in endurance performance
- ✓ An active rower should consume 60% of total daily calories from carbohydrates
- ✓ No more than 10% of total daily calories should be from simple carbs
- ✓ Rower should try to consume complex carbs before and after rowing/exercising but avoid rowing/exercising on a full stomach

### TWO TYPES OF CARBOHYDRATES:



Complex carbohydrates:

- ✓ Often referred to as starches
- ✓ Include whole grain breads and cereals, bagels, pancakes, waffles, pasta, rice, potatoes, beans, fruits and vegetables.



Simple carbohydrates:

- ✓ Also called refined sugars
- ✓ Provide empty calories
- ✓ Include sugar, honey, jelly, syrup, candy, sweets and soft drinks



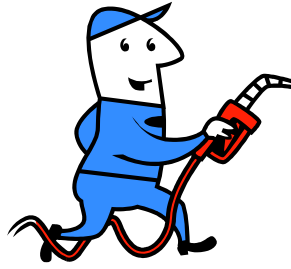
### **PRE-EVENT MEAL PLANNING TIPS:**

- There is no single food or “magic potion” that will guarantee top athletic performance
- Do Not rely on one “high quality” pre-event meal to make up for a week of eating “low quality/junk foods”
- Avoid unfamiliar foods and beverages just before competition
- 60-70% complex carbohydrates
- High protein and high fat foods (burgers, fries, steak, eggs, etc.) take longer to digest and absorb than nutrient dense carbohydrates
- A 500 calorie meal a few hours prior to competition will help prevent low blood sugar, dizziness and early muscle fatigue during competition
- Drink a few cups of water/sports drink along with the pre-event meal
- Avoid rowing on a full stomach



### **MEAL TIMING IS CRITICAL:**

- 3 to 4 hours before, consume only 500-1000 calories
- 3 to 3 hours before, consume only 300-500 calories
- 1 to 2 hours before, consume only 50-300 calories
- Sample of 500 calories: 1.5 cups of cereal, 1 cup 2% milk, 2 slices of toast w/ jelly, 1 cup of juice
- Sample of 1000 calories: 2 cups of pasta w/ red sauce, 4 oz. grilled chicken, small salad, 1 cup of juice



## RECOVERY FOODS: REFUELING THE MUSCLES

Two times to refuel:

1. During exercise- multiple events and training lasting longer than 60 minutes
  - a. Every 30 minutes = 80-120 calories (20-30 grams of carbs)
    - 16 oz sports drink = 100 calories
    - 1 banana = 110 calories
    - ½ a plain bagel = 125 calories
    - ½ a sports energy bar = 120 calories
    - ½ a soft pretzel = 85 calories
    - 1 orange = 80 calories
    - 1 slice bread = 80 calories
  - b. Every 15-30 minutes = at least 8 oz. of fluid
    - Water
    - Sports Drink
    - Diluted fruit juice (2:1) water/juice
  
2. After/Post Exercise- The sooner the better
  - a. 30-60 minutes after event: 240-400 calories (60-100 grams carbs)
  - b. Within 2 hours after event/exercise: 600-1000 calorie balanced meal (carbs, fats and protein)
  - c. Water: a minimum of 1 quart/32 oz. of water for each hour of practice/competition





## ADEQUATE HYDRATION

1. Best way to tell if the body is well hydrated is by the output and color of the athlete's urine.
  - a. Urination should be frequent and should be clear. If it is dark and very yellow, more fluids are needed
2. Measure body weight before and after exercising.
  - a. For every pound lost (sweat), drink 16 ounces of fluid
3. After exercise, the athlete should drink water and nutrient-rich drinks until no longer thirsty and then an additional 16-20 ounces



## PROTEIN

- ❖ Proteins are made up of the combination of 9 essential and 13 nonessential amino acids.
  - Nonessential amino acids can be produced by the body
  - Essential amino acids must be supplied by animal protein in the diet
- ❖ Two types of protein
  - Complete protein- has a good balance of the 9 essential amino acids. This type of protein is found primarily in animal proteins.
    - Lean meats, chicken, poultry, fish, eggs and low fat dairy products
  - Incomplete protein- missing one or more of the 9 essential amino acids. This type of protein is found primarily in plant sources.
    - Rice, beans, pasta, cereals, breads, nuts, vegetables and fruits



- ❖ Primary functions of protein
  - Growth and development of the human body
  - Protein builds repairs and maintains all body tissues including: muscles, bone, blood vessels, hormones and hair
  - Source of energy for the body. Carbohydrates and fats are the best sources of energy for the mind and muscles

**HOW MUCH PROTEIN DOES AN ATHLETE NEED?**

- ❖ 12%-15% of an athlete’s total daily calories should come from protein
- ❖ Recommended Daily Amount is .8 grams for each 2.2 pounds
- ❖ Athletes are not usually deficient in protein
- ❖ Strict vegans are those that have the greatest risk of a protein deficiency
- ❖ Daily protein needs also depend on age, body size, body type, intensity and duration of exercise
- ❖ Excess protein does not store as muscle; excess protein stores as fat.

**WHAT IS A “MAINTENANCE” NUMBER?**

An athlete’s maintenance number is the total number of calories a person needs each day in order to maintain their present body weight.

**HOW DO YOU CALCULATE A MAINTENANCE NUMBER?**



Females = (Body weight X 13) + calories burned during a training session

Males = (Body weight X 15) + calories burned during a training session

Calories “burned” during one hour of rowing...

110 lbs	128lbs	139lbs	154lbs	165lbs	176lbs	198lbs
504 cal	582 cal	636 cal	702 cal	756 cal	804 cal	906 cal

Example: A 165 pound male needs 3231 calories a day to maintain his present weight. If training lasts for 3 hours it would add an additional 1,512 calories needed.

Information provided by Eat to Compete® is listed at [www.usrowing.com](http://www.usrowing.com) Additional information can also be found at [www.eattocompetete.com](http://www.eattocompetete.com) . The information in this document is provided for educational purposes only. It does not replace professional medical advice. Please consult your physician or a certified nutritionist before starting any food modification plan.