Rowers and Nutrition

Rowers are unique athletes who train in endurance and power and compete in sprints. These unique demands have important needs. Athletes will lose muscle mass and drop or slow their progress without good diet and impeccable timing of food intake.
Nutrition Assessment, where we gathered this information from, specializes in weight class sports and has a proven record with weight loss and top performance in competition with rowers. The Queen's University light weight women's program is second to none in Canada. Race days require careful planning for optimal timing of food intake and race times.
Erin Armitage is in the unique position of having competed as a varsity rower at Queen's University and attended Ryerson University to obtain her Nutrition degree. She had become a qualified dietitian and is rapidly gaining expertise in sports nutrition. She has been a rowing coach and manager at the Kingston Rowing Club. Erin has put together these articles using the latest sports nutrition research to give rowers some basic tips for Training. Competition Rowing Articles will follow from nutritionassessment.com

As with any nutritional advice on the internet, please check with a doctor before changing your diet.

Fluids & hydration:

1. Water: For workouts less than 60-90 minutes, water is likely to meet your fluid and fuelling needs. For workouts that are particularly sweaty (i.e. summer rowing) and/or longer than 60-90 minutes, a sport drink may be the best choice to meet your fluid needs.

2. Sport drinks: Sport drinks have more to offer than you may think. As you already know, the carbohydrate content of sport drinks can provide an essential source of glucose and help replenish glycogen stores and improve glucose availability to keep you going during your workouts. But the glucose can also enhance the absorption of fluids, as long as the carbohydrate concentration remains within 5-8% (5 g carbohydrate per 100 ml sport drink). The electrolytes in sport drinks (sodium and potassium) help to replace lost electrolytes in sweat, and sodium may also enhance fluid absorption.

What to eat:

Cereal and milk or soy milk

Toast and peanut butter or cheese

Fruit and yogurt

Sports bar (look for <10 g protein, <5 g fat, <5 g fiber) – Try Luna, Cliff or Power bar Harvest
Smoothie – banana + frozen berries + milk or yogurt

Nutrition for the High School Rower

Before training: Make sure that body glycogen levels are high with a small carbohydrate snack within the hour before training. Drink clear liquids to keep body fluids high. Allow time for food to be digested before training:

- 3-4 hours (large meal)
- 2-3 hours (small meal)
- 1-2 hours (liquid or blended meal)
- <1 hour (snack or carbohydrate meal)

During training: Take on carbohydrates to maintain blood glucose levels and delay the onset of fatigue. This should be in the form of an energy drink like Gatorade.

After training: This is the most important time to replace carbohydrates. Consume carbohydrates within two (2) hours after exercise, followed by a high carbohydrate meal after two hours, then at regular intervals thereafter. Consuming protein also helps to speed recovery. Drink clear fluids as necessary.

Competition Nutrition

- To boost glycogen stores, maintain a high carbohydrate intake during the taper period of training in the last few days before a major competition.
- Eating a high carbohydrate meal 3-4 hours before competing improves performance by maintaining blood glucose levels.
- The pre-competition meal should be high in carbohydrate and low in fat, protein and fiber so that it is easy to digest and not too bulky or filling.
- Do not try anything new before a competition, either in terms of food types or eating habits. Consume plenty of clear fluids along with the meal.
- Allow plenty of time for digestion.
- Do not eat any foods rich in simple sugars in the hour before training or a race.

Conditioning & Competition Needs: A Primer

These eight points are an essential guideline to the nutrition needs of a competitive high school rower. EVERY ROWER should read this primer at least ONCE A SEASON as a reminder of how important nutrition is for maintaining a high level of training!

1. UP YOUR FLUID INTAKE:

Physical activity consumes vast amounts of our body's fluid stores! The average fluid loss per hour of training:

- Hot weather: Men 8 cups; Women 6 cups
- Cool weather: Men 5 cups; Women 3 cups

How and when should you drink?

- Do not sip: drink in gulps of water
- 2 hours before practice: 10-18 ounces
- 15 minutes before exercise: 8-16 ounces of water or sports drink
- Every 15 minutes during exercise: 4-8 ounces of alternating water/sports drink
- Post-exercise: 24 ounces of fluid

Cool fluids are more quickly absorbed than hot drinks. If a sweet drink is preferred, the carbohydrate content should be less than 10%, so as not to delay fluid emptying. It's important NOT to wait until you feel thirsty to replace fluids. Thirst usually doesn't develop until 1-2% of body weight is lost through dehydration, and performance can be adversely affected at a 2% loss!

Sports and Energy Drinks:

These drinks contain easily digestible fuel in the form of carbohydrate particles and are an ideal way of boosting your energy stores mid-row. There are two main types to look out for: isotonic and hypotonic. Isotonic contain particles of carbohydrate at the same concentration as your body's natural fluids so that they are absorbed into the bloodstream at the same rate as water. Hypotonic contain particles that are less concentrated than natural body fluid, which means that they are more quickly absorbed by the body so that they can speed up the rehydration process.

2. CALORIE NEEDS

Minimum:
Current weight x 20 = number of calories for Women
Current weight x 25 = number of calories for Men

3. MEAL FREQUENCY

Small, more frequent meals will give you consistent energy more quickly to provide available fuel for your body. Think of eating 5 or more snacks/meals per day every 3-4 hours during the regatta season.

Ensure body glycogen levels are high with a small carbohydrate snack before training. Drink suitable clear liquids to keep body fluids high. Allow time for food to be digested before training:

- 3-4 hours (large meal)
- 2-3 hours (small meal)
- 1-2 hours (liquid or blended meal)
- <1 hour (snack or carbohydrate meal)

Do not eat any foods rich in simple sugars in the hour before training or a race. They will reduce blood sugar levels in the short-term.

4. CARBOHYDRATE NEEDS

Carbohydrates are the best fuel for exercise!

Intense training depletes carbohydrate stores resulting in poor performance and increased fatigue, so rowers need to consume carbohydrates with every meal:

- 3 grams per pound body weight for 1 hour training
- 4 grams per pound body weight for 2 hours training
- 5 grams per pound body weight for 3 hours training
- 6 grams per pound body weight for 4+ hours training

Great sources of carbohydrates include: bread, bagels, fruit, vegetables, English muffins, muffins, pita bread, tortillas, rice, pasta, dry non-sugar cereal, crackers, pretzels, potatoes, cereal bars and sports drinks. Stay away from fruit juices, sweet cereal, cookies, candy, soda, or chips as these all contain high amounts of sugar!

What to Consume Before, During, and After Workouts:

All meals should be 2/3rd carbohydrate and 1/3 protein

During exercise: 30-60 grams of carbohydrate per hour OR pre-load when eating during exercise is NOT possible.

5-10 ounces of sports drink every 15-20 minutes OR 2 sports gels per hour OR a packet of honey works well.

After exercise: Cereal bar, Pop-Tarts, crackers, pretzels, dry cereal, bagels, graham crackers, fruit punch/drink, frozen yogurt, fruit ice.

5. PROTEIN NEEDS

A rower's body cannot use more than 1 gram of protein per pound body weight because it is not immediately available as an energy source for exercise. However, it is important for recovery and to boost the immune system. Protein is used as a means to build muscle and to provide energy – a prolonged inadequate protein intake results in the body breaking down its own muscle tissue.

Protein sources include: chicken, fish, turkey, soy burgers, certain yogurts, peanut butter, peanuts, eggs, cheese, milk, shellfish, beef, pork, veal, assorted non-salted nuts.

6. FAT REQUIREMENTS

Fat is an essential fuel source for endurance activity. Too much can cause cramps and not enough can cause you to fatigue more quickly. Try to limit high fat food before and during exercise.

Foods to limit before and during exercise include: chips, french frieds, pizza, burgers, ice cream, doughnuts, chocolate, nuts, peanut butter, fried meats, bologna, salami, pepperoni.

7. PRE-WORKOUT MEALS

There is no single ideal pre-event meal and it will vary with the individual rower; you should try out as many different combination meals as possible in training until you discover what works for you. The following general guidelines may be of help:

Eat a small meal of no more than 500-800 calories about 2-3 hours before you row, so your stomach has time to empty. Emphasize starch or "complex" carbohydrate foods that are digested quickly and can boost glycogen supplies in the working muscle. Avoid excessive intake of foods high in sugar, which may cause stomach upset and may trigger reactive low blood-sugar levels. A small amount of protein should be eaten, but avoid fatty foods or those prepared in fat. Fat takes longer than any type of food to leave the stomach. Avoid spicy foods and those foods which tend to cause gas, such as beans, onions, peppers, etc. Steer clear of caffeine-based drinks such as tea, coffee, and cola as well as alcohol which can all promote dehydration. Fizzy drinks can cause bloating.

8. RECOVERY FOODS: Refueling the Muscles

Within two hours of exercise is the most important time to replace carbohydrates. To maximize muscle glycogen repletion between daily training sessions or competitive events, and to minimize fatigue during frequent bouts of intense rowing, carbohydrates should be consumed after exercise. Equal amounts of both solid and liquid carbohydrate (Gatorade) feedings work well in influencing muscle glycogen replacement.

As an example, if a rower weighs 150 pounds, then they should consume 110 grams of carbohydrate within two hours of rowing. What gives you that many carbohydrates? A

cup of raisins is surprisingly high at 115 grams. Gatorade provides 70 grams, and breads/cereal bars range in the 30s. A piece of fruit is around 40 grams of carbohydrates.

More on Nutrition: Conclusions You Should Know

Rowers have very high energy and carbohydrate requirements to support training loads and meet body weight and strength goals. All rowers need to work hard to recover between training sessions. A high-energy, high-carbohydrate, nutrient-dense diet is required. Some rowers (particularly male heavyweights) struggle with the sheer volume of food they need to consume. Frequent snacks and use of compact, energy-dense foods or drinks such as juice, flavored milk, jam, honey, bars and liquid meals is necessary to keep the volume of food manageable. Rowers need to pay particular attention to recovery after training and organize themselves to have high carbohydrate snacks on hand immediately after training sessions are completed.

Rowers should go into each race with fluid and fuel stores topped up, and feeling comfortable after the last meal. The challenge is to recover between each day's sessions and to prepare for the next race. Generally a meal with carbohydrates should be consumed 2-3 hours before a race. Suitable foods include breakfast cereal, toast, muffins, sandwiches, yogurt, fruit, pasta with tomato sauce, and rice. Some rowers need to take special care with pre-race eating – it can be very uncomfortable to race with a full stomach. Low bulk choices such as liquid meals and sports bars can be useful in these situations.

With much of the day tied up in preparation and the race itself, there is usually little opportunity for rowers to meet their usual high-energy intake. Consequently, some rowers find that they quickly lose weight over the course of the competition. Rowers need to organize themselves to have nutritious food supplies at their fingertips at all times. Take along a supply of cereal bars, liquid meal supplements, sports bars, fruit bars, dried fruit, sandwiches, yogurt, juice, etc. Start your recovery after each race by consuming some of these snack foods. Don't neglect fluid needs. You can be dehydrated from your rowing, practices, or from sitting in the sun watching the competition. Carbohydrate-containing fluids such as sports drinks are useful for topping up both fluid and carbohydrate stores.