ATHLETE NUTRITION

CAMBRIDGE RINDGE AND LATIN SCHOOL CREW

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BREAKFAST

Breakfast is important for performance and health.

After 8-12 hours without a meal or snack, your body needs to be replenished with fuel and fluid. Breakfast is the first opportunity to replenish glucose (blood sugar), glycogen (carbohydrate stored as fuel for the brain and muscles) and fluid.

Breakfast eaters tend to have more strength and endurance.

Eating breakfast daily improves mental skills athletes rely on, such as alertness, concentration, problem solving and memory. This is especially important for student-athletes.

Eating breakfast can benefit an athlete's mood, making it easier to stay calm relaxed, motivated and positive.

Breakfast provides a jump-start to meeting your daily requirements of key nutrients such a water, fiber, and more than 40 vitamins and minerals.

Breakfast fuels and sustains the body through morning training sessions. This helps decrease the ravenous hunger that athletes often experience later in the day.

Breakfast eaters make better food choices throughout the day.

Breakfast Options

- Whole-grain cereal with fruit and 8 ounces of milk/yogurt.
- Waffles with peanut butter and a fruit smoothie.
- Oatmeal made with milk and dried fruit/nuts.
- One egg (not fried) and two pieces whole grain toast with fruit
- Smoothie made with milk/yogurt, fruit, honey, oats, ground flax, peanut butter, etc.
- Pancakes with fruit, maple syrup and a glass of milk.
- Bagel with peanut butter, small fruit smoothie.
- English muffin topped with melted cheese and tomato.
- Omelet made with vegetables and a piece of whole grain toast.

HYDRATION

OPTIMAL HYDRATION SUPPORTS DAILY TRAINING AND RECOVERY.

The best fluid to consume is water; however, sports drinks have their benefits too because they combine fluid, electrolytes, and carbohydrate.

Breakfast: Drink ~1-2 cups of water along with other fluids
Mid-morning: Drink 1-2 cups (8-16 oz) of tea, water, or sport drink
Lunch: Sip regularly. Drink water, diluted fruit juice, low fat milk
Practice: Use body weight change during training to calculate fluid requirements. 1lb loss in weight = 16 oz or 2 cups of sweat loss. Aim to replace ~80-100% of sweat losses. For long session consume sport drinks or water with gels or chews.
Post practice: Consume fluid to replace 150% of sweat lost in training. Drink some low fat milk or flavored milk
Dinner: Drink ~2 cups (16 oz) of water
Before bed: Drink 1 cup (8 oz) of water, herbal tea, or low fat milk

When your fluid requirements are higher:

- Heat
- Humidity
- Hard training
- Beginning of heat acclimatization

Watch your hydration status during:

- Travel
- Altitude training
- Surgery
- Illness
- Recovery days

DEHYDRATION

DEHYDRATION'S EFFECTS CAN TAKE HOURS TO DAYS TO RECOVER.

Signs and Symptoms of Dehydration:

- Lack of concentration
- Early fatigue
- High perceived exertion in training
- Trouble tolerating heat
- Delayed recovery
- Muscle cramps

Three indicators of dehydration can be used to monitor athlete's hydration:

1) Color of urine
2) Waking weight
3) Thirst

If **two or more** of these markers are outside the normal range, it is likely the athlete is dehydrated.

OVERHYDRATION

It is possible to consume more fluid than is lost during exercise. This can cause gastric discomfort. However, most importantly, drinking too much increases the risk for hyponatremia (i.e., dilution of plasma sodium levels), also called water intoxication.

Sodium maintains blood pressure and is needed for nerves and muscles to perform properly. When plasma sodium levels drop from an imbalance of fluids, confusion, fatigue, headaches, muscle weakness, and nausea can occur.

Signs and symptoms of hyponatremia are strikingly similar to dehydration. Thus, monitoring body weight before and after exercise is the best way to avoid overhydration. Athletes should not gain weight from drinking too much.

SPORTS NUTRITION PRODUCTS

Athletes should rely mostly on real food to supply their energy needs throughout the day.

Sports nutrition products such as sports drinks and sports bars have been designed to supplement an athlete's eating program before, during, and after training and not be a replacement or a substitute for food.

SPORTS DRINKS

Sports drinks contain measured amounts of carbohydrate and electrolytes and are typically consumed before, during and after training sessions. They will help maintain hydration and carbohydrate replacement for optimal performance.

Look for a product that supplies the following per 8 ounces:

- 14-15 grams carbohydrate
- At least 100 mg sodium

Drink about 15-20 oz. of sports drink 1-2 hours before training
6-12oz of sports drink every 15-20 minutes during training >1 hour
24 oz. of sports drink after training for every pound of body weight lost

SPORTS BARS

Energy bars are designed to provide athletes a compact source of calories, carbohydrate, and protein before, during or after training sessions when other solid foods are not well tolerated or available.

It is typically best to consume a bar that contains:

- 30-100 grams of carbohydrate
- 6-20 grams of protein

If used before training, eat a bar that is:

- Higher in carbohydrates (60-100 grams)
- Moderate in protein (10-15 grams)
- Low in fat (<6 grams)
- 3-4 hours before training

AND

- A bar that is lower in carbohydrates (30-40 grams)
- Protein (<8 grams)
- Fat (<3 grams)
- 1-2 hours before

The higher carbohydrate and protein bars are appropriate after exercise.

RECOVERY NUTRITION

A sound recovery nutrition protocol will ensure you can optimize training adaptations and perform at 100% of your body's potential for the next practice or in preparation for competition.

The 4 R's of Recovery

Dehydration: RE-HYDRATE with fluids and electrolytes
Depletion of Glycogen (carbohydrate stored in muscle and liver): REPLENISH muscle glycogen stores with carbohydrates
Breakdown of Muscle: REPAIR and regenerate muscle tissue with high quality protein
Cell Damage and Inflammation: REINFORCE your immune system with nutritious, fresh foods (e.g., fruits, vegetables, whole grains, fish, nuts, olive oil)

How quickly you should refuel and how much you need depends on your training intensity, volume, timing of your next practice, and your body weight. This means your daily approach to recovery fueling may change throughout the week or season.

Hard Training, timing is critical and refueling with the following nutrients will optimize recovery:

- **0.5g of carbohydrate per 1lb of body weight**
- **15-20g of protein**
- **24oz (3 cups) fluid per pound of sweat lost from session**
- **Electrolytes from a sport drink or some salty food**

Moderate Training, timing and balance of nutrients is also important, but less stringent.

Easy Training, recovery can occur through your next meal or a small post-training snack.

HARD TRAINING

Characteristics:

Higher volume and/or intensity phases
Physical adaptation training (i.e. heavy lifting, altitude training)
Competition or simulated competition days
Multi-day practices

Nutrition Guidelines:

Refuel immediately after training (within 40 minutes)
Ensure a minimum of 0.5g/lb. carbs, 15- 20g protein, and fluids/electrolytes lost are replaced.
Eat next meal within 1 hour of initial recovery fuel.
Add a snack 1 hour later.
Regular fueling and hydration throughout the day.

RECOVERY NUTRITION EXAMPLES:

110-132lbs (athlete weight)
16oz chocolate milk + water
6oz non-fat Greek yogurt + fresh fruit + water
Natural ingredient sport bar (fruit/nut) + glass of skim milk + water
Recovery mix (carbohydrate + protein mixed)

154-176lbs
24oz chocolate milk + water
Sport bar (45-50g carb/15-20g pro) +16oz sport drink
2 x 6oz non-fat Greek fruit yogurt + 1 cup fruit juice + water
Recovery mix + Banana

198-220+lbs
24oz chocolate milk + 1 banana
Sport bar (50g carb/15-20g pro) + 24oz sport drink
Recovery mix (aim for 90 g of carbs and 25 g of protein) + banana

MODERATE TRAINING

Characteristics:

Single session with training the next day
Maintenance of fitness/strength

Nutrition Guidelines:

Refuel within 30-60 minutes after training session
Balanced snack with carbs, protein and fluids
Eat next meal within 2 hours
Regular fueling and hydration during the day

RECOVERY NUTRITION EXAMPLES:

8-16oz chocolate milk
6oz non-fat Greek yogurt + fruit + water
Natural ingredient sport bar (35-40g carbs and 15-20g pro) + water
PB & J + glass of milk
Recovery mix + water
8oz of fruit and yogurt smoothie + water

EASY TRAINING

Characteristics:

One session a day, followed by a rest day
Recovery day
Athlete in a weight loss phase

Nutrition Guidelines:

Timing is less critical, but be sure to refuel within 1-2 hours following exercise
Top up glycogen storage with a small high carb snack or having your next main meal

RECOVERY NUTRTION EXAMPLES:

Water followed by main meal
8oz PowerAde
Fresh Fruit + Water
Fruit Leather Snack + Water
4oz Fruit Juice + Water
4-8oz Chocolate Milk or Soy + Water
Plain Greek Yogurt + Water

NUTRITION LABELS and WEIGHT MANAGEMENT

Eating a diet high in **saturated or trans fats** will promote inflammation, which is detrimental to recovery. These types of fat are found in higher fat dairy products, meats, fried foods and processed foods/snacks.

Sodium promotes better hydration before, during and after training or competition. Endurance athletes may require more sodium than non-endurance athletes but remember that too much sodium can have a negative impact on health and could contribute to high blood pressure in athletes who are salt-sensitive.

Eating **protein** during the day will help replenish stores that are lost during higher intensity or longer duration training. In addition, eating protein with carbohydrate immediately following workouts will help speed recovery. Choose sources such as lean meats, dairy products and soy products.

Vitamins and minerals are always important for elite athletes but even more so during higher volume and intensity training times of the year. Foods that are rich in vitamins and minerals also contain antioxidants, which are important for elite athletes. Antioxidant rich foods such as fruits and vegetables will keep the immune system in top shape for performance.

Eating **complex carbohydrates** and at least 25 grams of fiber each day will help stabilize insulin levels and help maintain a good performance body composition. Be sure to eat frequently throughout the day and focus on fiber-rich foods such as whole grains and fruits and vegetables.

% Daily Value is based on 2000 or 2500 calorie meal plans and is **not** applicable to elite athletes. Calories consumed should vary based on weight and body composition goals and training cycle.

For athletes wanting to reduce body fat, it is important to eat **more** frequently throughout the day. Eating every 3-4 hours and focusing on lean protein, fruits and vegetables, and whole grains will help improve body composition.

VEGETARIAN/VEGAN ATHLETES

Any athlete can successfully choose a vegetarian diet without risking nutrient shortages or deficiencies. However, such a lifestyle choice will require careful planning to maintain adequate energy for training and to reduce the risk of associated vitamin and mineral deficiencies.

The key to a successful vegetarian diet is understanding which plant foods contain similar nutrients as the foods you are no longer consuming; and which nutrients may be at risk.

Nutrients At Risk For The Vegetarian Athlete:

Iron
Zinc
Vitamin B-12
Calcium
Omega 3s
Protein

If you do have a known deficiency, it is important to consult your physician to determine appropriate dietary supplements regimen.

Iron – The most bio-available form is found in meat, but vegetables contain a form of iron that can promote optimal iron stores if consumed regularly.

Zinc - Necessary for protein synthesis, and supporting immune function, this mineral can be found in whole grains, fortified foods as well as nuts and seeds

Vitamin B-12 – B-12 is necessary for protein synthesis and aids in energy metabolism but it is only found in animal products, so vegan athletes should look for foods fortified with B-12 or consume a multi-vitamin that contains B-12.

Calcium - Recommended Adequate Intake (AI) for athletes between ages of 19 and 50 years is 1000 - 1500mg. Athletes not eating dairy can find calcium in fortified foods, soy, as well as some veggies and legumes.

Omega 3s – This essential fatty acid which promotes good heart health and inflammation can be found in high concentrations in nuts/seeds like almonds, walnuts, flax and sunflower seeds.

Protein – Depending on the phase of training most athletes will need 0.5-1g protein/lb. bodyweight

Common Sources of Iron

Food	Serving Size	Iron (mg)
Beef, round tip (cooked)	**3 oz.**	**2.5 H**
Chicken, breast (roasted)	**3 oz.**	**0.9 H**
Shrimp (cooked moist heat)	**3 oz.**	**2.6 H**
Kidney beans, canned	**1⁄2 cup**	**2.6 NH**
Tofu	**3 oz.**	**6.4 NH**

Common Sources of Calcium

Food	Serving Size	Calcium (mg)
Skim milk	**1 cup**	**306**
Low-fat yogurt	**1 cup**	**372**
Cottage cheese	**2 cup**	**304**
Soy Milk	**1 cup**	**333**
Broccoli (raw)	**1 cup**	**60**
Kale (cooked)	**1 cup**	**180**
Cheerios	**1 cup**	**122**

Common Sources of Protein

Food	Serving Size	Protein (g)
Peanut butter	2 tbsp.	7
Almonds	1/4 cup	8
Sunflower Seeds	1/4 cup	6
Tofu	1/2 cup	20
Soy milk	1 cup	6-10
Beans (black, kidney etc.)	1/2 cup	7-10
Edamame	1/2 cup	10
Quinoa, cooked	1 cup	9