

# The Nutrition File – Nutrition and Athletic Performance\*

.....Trusted information on healthy eating from Dietitians of Canada

The saying, “you are what you eat” might be tailored to an athlete as, “you compete how you eat!” Research shows that what an athlete eats and drinks has an effect on exercise performance. So whether you’re playing amateur soccer or running a marathon, your performance depends not only on your training methods, but also on eating the right foods.

\*A joint position paper - *Nutrition and Athletic Performance* - was released by Dietitians of Canada, the American Dietetic Association and the American College of Sports Medicine and endorsed by the Coaching Association of Canada [www.dietitians.ca/news/highlights\\_position\\_athletic.html](http://www.dietitians.ca/news/highlights_position_athletic.html). The position paper provides important information on keeping you fuelled for optimal health and peak performance. This fact sheet reviews the key points in the position.

## ATHLETES NEED MORE ENERGY!

Meeting energy needs is a top priority for any athlete. The main fuel used by the body during exercise is carbohydrate (e.g. from grains, fruit, vegetables), which is stored in muscle as glycogen - a form of sugar. During exercise, muscle glycogen reserves can be used up, especially when activity lasts longer than 90 minutes. Because the amount of glycogen that the body can store is limited, it is important for athletes to replace glycogen stores between exercise sessions by consuming a diet that is high in carbohydrates. Meeting energy needs can help improve performance during the sport, as well as improve overall strength and endurance.

Eating carbohydrate-rich foods like grains, fruits and vegetables and by following *Canada’s Food Guide to Healthy Eating* <http://www.hc-sc.gc.ca/hppb/nutrition/pubef/foodguid/index.html> can meet these energy requirements. These energy needs may be difficult to meet in just three meals, so athletes may need to snack throughout the day.

During training, athletes may need more than the upper range of food from the grains and fruits & vegetables food groups. This is especially true for endurance-trained athletes or those involved in multiple daily training sessions. If you are already taking the upper end of the food guide consult a Registered Dietitian with expertise in sports nutrition for more assistance with meal planning.

### To meet energy needs:

- Snack frequently throughout the day on a variety of foods from the four food groups
- Emphasize complex carbohydrates (pasta, rice, whole grains) and fruits & vegetables

## KEEP HYDRATED!

Sweating is an effective way to cool your body, but sweating can lead to dehydration, especially during exercise in the heat. Even a small amount of dehydration can significantly impair performance. It’s essential that athletes drink plenty of fluids before, during and after exercise to replace fluid lost from sweating.

For activities less than an hour long – plain water is okay to drink. For activities lasting longer than an hour – choose a sport drink that contains 4 to 8% carbohydrates along with some added sodium.

### Hydration Tips:

- Before exercise (2 - 3 hours before): drink about 400-600 mls
- During exercise: drink 150 mls to 350 mls every 15 to 20 minutes
- After exercise: replace sweat losses – drink 450 – 675 mLs for every .5 kg of weight lost during exercise.

## CONCERNED ABOUT WEIGHT?

Achieving a healthy weight is important for all athletes. It promotes athletic ability, decreases the risk of injury or illness and decreases risk factors for disease.

Sometimes athletes gain or lose weight rapidly to fit into a weight category. Beware! Rapid weight gain can result in increased body fat while rapid weight loss can result in a loss of muscle mass, loss of fluids and decreased performance. Any desired weight change should start slowly, before the competition season begins.

### Weighty Tips:

- Weight loss/gain takes time if you want to remain in peak condition
- Talk to a qualified nutrition and sports professional about your weight goals

## WHAT ABOUT PROTEIN & FAT?

Many athletes believe that a high protein, low fat diet is the answer to better performance. While it is true that protein is important to repair muscle tissues after exercise, research indicates that protein needs of most athletes can be met by a well-balanced diet. Strength-trained and endurance athletes do have higher protein needs. Canada’s Food Guide to Healthy Eating has a generous allowance for protein that easily covers even

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these higher protein needs as long as energy needs are also met. Protein supplements can be expensive and are generally not necessary.

#### Good Sources of Dietary Protein:

- Meat, fish, poultry, milk, cheese, eggs
- Combinations of legumes and grains

Fat provides energy as well as fat-soluble vitamins. Studies show that both high-fat diets and excessively low-fat diets have negative effects on health.

#### To get a 'healthy' fat intake in your diet:

- Choose leaner meats, poultry, fish, and legumes more often
- Choose lower fat milk products more often
- Emphasize complex carbohydrates and fruits and vegetables

### DO YOU NEED VITAMIN SUPPLEMENTS?

Supplementation will not improve athletic performance for an athlete eating a balanced diet. Vitamin and mineral deficiencies are rare (with the exception of iron in the female athlete). But, restricting your food intake, rapidly losing weight, or eliminating food groups from your diet can put you at risk for deficiencies.

#### For maximum vitamins/minerals from food:

- Choose a wide variety of foods from Canada's Food Guide to Healthy Eating

For the female athlete, performance can be negatively affected if you are iron deficient. Avoiding meat, fish and poultry or eating a vegetarian diet that is not well balanced can cause iron deficiency. If you prefer vegetarian eating, consult a Registered Dietitian to help prevent any nutritional deficiencies. Check out Dietitians of Canada website [www.dietitians.ca](http://www.dietitians.ca) to find a registered dietitian in your area specializing in sports nutrition.

#### Tips to get an "iron clad" diet...

- Choose meat, legumes, vegetables and grains.
- If eating non-meat sources of iron (legumes, grains), also eat Vitamin C containing foods (oranges, strawberries, tomatoes) to enhance absorption
- Avoid drinking coffee or tea with meals

### DO DIETARY SUPPLEMENTS IMPROVE PERFORMANCE?

The supplement industry is a multi-billion dollar business promoting unproven products to vulnerable athletes looking for a performance edge. The effectiveness of the majority of these expensive supplements has never been proven with acceptable scientific methods. Furthermore, the purity of the supplements cannot be guaranteed. Caution is advised when it comes to using supplements.

Consult with a sport nutritionist or other health professional to assist in the evaluation of supplements.

## PUTTING IT ALL TOGETHER - The Training Diet!

### 1. Before Exercise: Allow time to digest your food.

- Eat a meal four hours before activity. Also, allow 2 hours to digest a snack before activity.
- Eat foods that are high in carbohydrate, moderate in protein and are low in fat. Remember - drink fluids!
- Examples of meals/snacks:
  - A. Cereal, fruit, milk, toast
  - B. Yoghurt, muffin, fruit
  - C. Pasta and tomato sauce
  - D. Soup, sandwich with lean meat, milk

### 2. During Exercise: maintain energy stores and fluids, especially when activities last longer than an hour:

- Every 15 to 20 minutes drink a sport drink **or**
- Eat some carbohydrate and drink water

### 3. After Exercise: replace fluids and re-fuel muscles as soon as possible. Drink fluids; eat carbohydrate-rich snacks and / or a meal with carbohydrate and protein.

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