



## Sport Nutrition

Tip of the Month | November 2010



# Sodium Facts for Athletes

## General Population and Sodium Concerns

Reducing sodium intake is a significant health goal for the majority of Canadians. The recommended daily intake is 1500 mg with a suggested upper limit of 2300 mg. The average sodium intake is estimated to be 3400 mg per day. This chronic over-consumption of sodium can lead to health concerns, such as hypertension (high blood pressure), strokes, heart disease and/or kidney problems.

## Application to Athletes

However, while the previously mentioned sodium guidelines apply to the majority of the population, the needs of athletes are different. Consider the following:

- Athletes sweat between 400 -1800 mL per hour of exercise, on average 1200 mL per hour.
- In addition to water, the main electrolyte lost in sweat is sodium
- The sodium content of sweat varies substantially from 115 - 5000 mg per 1000 mL of sweat.
- Thus, an athlete who is a “salty sweater” (i.e., has a high amount of sodium in their sweat) may lose well in excess of the recommended intakes
- **MOST** athletes should not follow a low-sodium diet!



## Consider the following example:

A female marathon runner who sweats approximately 800mL per hour in 20°C weather is hoping to do a 3-hour marathon. She has always been a salty sweater and her sweat was measured to have 1500 mg of sodium per 1000 mL of sweat. She has experienced muscle cramps in previous races, which were linked to sodium depletion.

During the 3 hour event she would lose approximately 2400mL of fluid which means her sodium losses would be approximately 3600 mg in 3 hours of running.

If she were to limit her diet and only consume the recommended daily intake of 1500 mg of sodium, her diet would be insufficient to replace what she lost in running and she would have a considerable deficit which could contribute to further muscle cramps, and other low sodium symptoms (such as: bloating, stomach upset, exhaustion, etc.)

Continued...

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### Consequences of Insufficient Dietary Sodium

As with over-consumption, there are performance consequences and health risks associated with under consumption of sodium including:

- Muscle cramping
- Heat illness
- Inability to properly rehydrate and restore electrolyte balance after exercise
- Increased risk for hyponatremia (diluted levels of sodium in the blood usually caused by excessive water intake)

### Athlete Action Plan

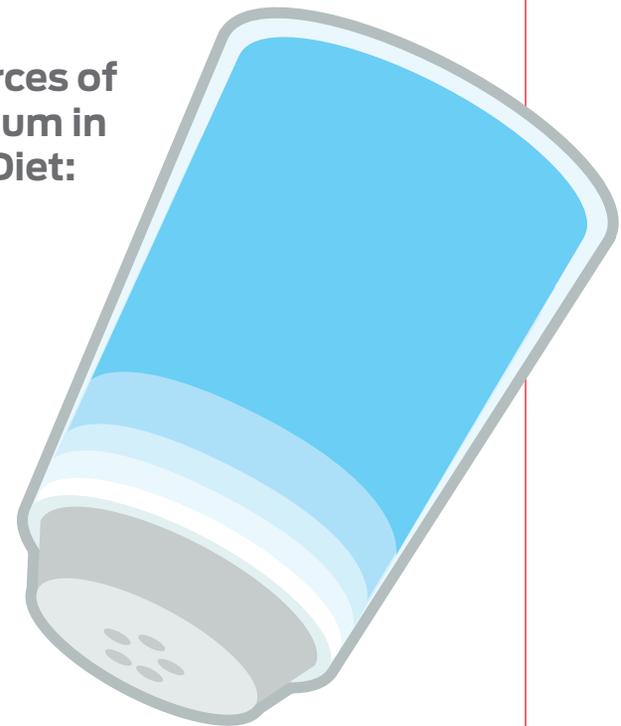
To achieve the optimal levels of sodium intake athletes should:

- Understand their typical dietary sodium intake by reading food labels and recording their sodium intake
- Consider their personal sweat losses for the temperature and duration of their training (see Fluids for Athletes worksheet)
- Look for signs of being a salty sweater such as white streaks on dry dark clothing after exercise; salt crystals on the skin after exercise; muscle cramping that doesn't go away when drink water during exercise; etc.
- Consider increasing their sodium intake before, during and after exercise if they've ever experienced muscle cramping, are a heavy sweater and/or salty sweater
- Speak to a sports medicine doctor or dietitian if the athlete has high blood pressure or kidney problems before increasing sodium intake

### Sources of Sodium in Foods and Fluids

- Table salt/sea salt, 1 tsp = 2300 mg
- Sports drinks (look for drinks with at least 500 - 700mg sodium per Litre)
- Some canned soups, pickles
- Some vegetable juices, tomato juices
- Cottage cheese, cheese and other dairy products
- Breads and pre-packaged cereals
- Snack foods like pretzels, flavoured rice cakes and crackers
- Soy sauce and many condiments like salad dressings, barbecue sauce, ketchup, etc.
- Deli meats, turkey bacon, back bacon or ham, and commercially prepared proteins (e.g., breaded chicken or fish, pre-made hamburger patties, etc.)

### Sources of Sodium in our Diet:



- 5% added in cooking
- 6% added as table salt
- 12% naturally occurring in foods
- 77% from food processing

