

# Eating for Energy & Precision!

## **FOOD AS FUEL**

The foods you choose to consume on a daily basis have a profound effect on your health, energy, performance at work/school, and while you're training and competing. The smarter you are when it comes to fuelling your body, the more energy your muscles can store, the better you can perform and the faster you can recover! Your "fuel" determines your potential – it's the foundation of your ability to perform.

## **Fuel and its components**

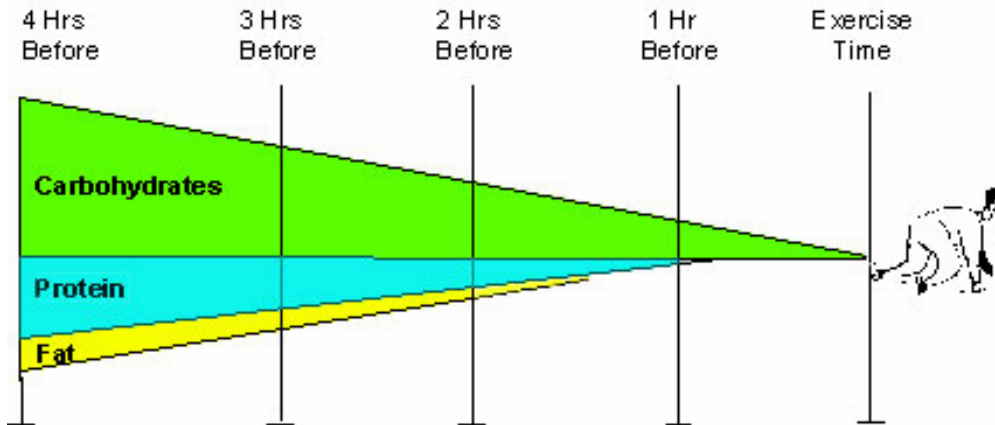
There are 3 main food sources: Carbohydrates, Protein and Fat. To better understand the roles of these nutrients, think of your body as a high performance car:

Carbohydrates: The main fuel for exercise – and the only fuel your brain runs on. You must keep your "gas tank" topped up at all times to avoid "running out of gas", and therefore should consume carbohydrates regularly throughout the day. Choose high quality "fuel" by consuming complex carbohydrates.

Protein: It's the engine of your car. It facilitates repairs – especially muscle repair. It is NOT burned as a main fuel therefore you do not need to eat large quantities of it.

Fat: You require a small amount of high quality fats in your diet to keep everything running smoothly, similar to the oil in your car.

## Game Preparation



Your pre-meal 3-4 hours before exercise can include carbohydrate with some protein and fat. As you near the time of exercise the size of the meal/snack should decrease and the selection should be primarily carbohydrates with minimal fat and protein.

## Eating Before Exercise

### 1. Choose foods high in CHO, moderate in fibre, and low in sugar.

- CHO is the main nutrient that keeps your blood sugar stable.
- High fibre CHO (>5g fibre/serving) will add bulk to your meal and leave you feeling uncomfortably full for exercise.
- Sweet CHO will be absorbed very quickly contributing to a rise and crash in blood sugar levels leaving you tired and sluggish at the beginning of exercise.

Examples: whole grain products like breads, pitas, bagels, pasta, potatoes and fruits, cold cereals (low in sugar and fibre) or warm cereals like oatmeal.

### 2. Your pre-exercise meal should contain some protein if eaten more than 2 hours before exercise.

- Protein slows the absorption of CHO to help maintain constant blood sugar.
- Choose lower fat proteins to promote faster digestion.

Examples: lean cuts of sandwich meats (turkey, chicken, roast beef and ham), light peanut butter, fish (e.g. tuna canned in water, varieties like sole or cod), eggs, and low-fat dairy or soy products (e.g. cheese <20%MF, yogurt 1-2%MF and skim-1% milk).

### 3. Choose low-fat foods.

- Fats slow digestion and may lead to discomfort if eaten too close to exercise
- Similar to protein, limit your fat intake as you get closer to your exercise time

Examples to limit: regular fat cheeses, nuts, sauces (Alfredo), gravies, butter, margarine, fried foods, croissants and baked goods.

## Carbohydrate and Protein Sources

<b>Carbohydrate Sources</b> For lasting energy...	<b>Protein Sources</b> With lower fat for heart health...
<p><u>Grain Products</u></p> <ul style="list-style-type: none"> <li>• Whole wheat bread, bagel, crackers</li> <li>• Whole wheat pita, flat bread</li> <li>• Multi-grain cereal, oatmeal</li> <li>• Popcorn (plain)</li> <li>• Pasta, rice</li> <li>• Tortilla wraps</li> <li>• Quinoa, Bulgur</li> </ul> <p><u>Fruits &amp; Vegetables</u></p> <ul style="list-style-type: none"> <li>• Fresh fruit</li> <li>• Fruit juice</li> <li>• Unsweetened apple sauce</li> <li>• Dried fruit</li> <li>• Chopped raw vegetables</li> <li>• Frozen mixed vegetables</li> <li>• Baked potato</li> <li>• Sweet potato</li> <li>• Tomato sauce</li> </ul>	<p><u>Meat, Poultry, Fish</u></p> <ul style="list-style-type: none"> <li>• Tuna packed in water</li> <li>• Lean deli meat</li> <li>• Shellfish (shrimp, crab, lobster)</li> <li>• Roasted chicken/turkey (1-3oz)</li> <li>• Lean beef (roast, ground)</li> <li>• Egg salad with light mayo, boiled egg</li> </ul> <p><u>Dairy Products</u></p> <ul style="list-style-type: none"> <li>• Milk (skim, 1%)</li> <li>• Yogurt (0-2% MF), cottage cheese</li> <li>• Low fat cheese (&lt;21% MF)</li> </ul> <p><u>Vegetarian Proteins</u></p> <ul style="list-style-type: none"> <li>• Peanut butter, almond butter</li> <li>• Chick peas, roasted soy beans</li> <li>• Hummus</li> <li>• Brown and black beans, lentils</li> <li>• Soy hot dog, soy slices</li> <li>• Soy milk/cheese</li> </ul>
<p><b>High Sugar Carbohydrates</b> Not suitable for lasting snacks...</p> <ul style="list-style-type: none"> <li>• Granola bars</li> <li>• Canned fruit in syrup</li> <li>• Jelly beans</li> <li>• Gummy bears</li> <li>• Licorice</li> </ul>	<p><b>High Fat Protein Sources</b> Use in moderation...</p> <ul style="list-style-type: none"> <li>• Regular cheese (22-40% MF)</li> <li>• Milk (2%-homo)</li> <li>• Nuts (almonds, peanuts, cashews)</li> <li>• Seeds (sunflower, sesame)</li> <li>• Tuna packed in oil</li> <li>• Cream cheese: not a good source of protein</li> </ul>

### Balanced Snack Ideas

½ - ¾ c	Trail mix ( <u>nuts</u> , raisins, cereal, seeds, <u>soy nuts</u> ...)
1 Tbs	<u>Peanut butter</u> rolled in a tortilla
1-2 c	<u>Skim milk</u> shake (chocolate powder + skim milk powder + water)
1	Individual serving of <u>tuna</u> with 4-5 crackers, pita or on salad
1	<u>Yogurt</u> (add granola or bran buds if you like a crunch)
1oz/28g	<u>Cheese</u> (< 21% MF) and apple
½ - ¾ c	<u>Cottage cheese</u> and fruit
2-4 Tbs	<u>Hummus</u> and veggies or ½ pita to dip
1 c	Three bean salad ( <u>kidney beans</u> , green/wax beans, vinaigrette dressing)
1	Soup: <u>pea</u> , <u>lentil</u> , <u>bean</u> , <u>chicken</u> (look for brands with 7-15 grams of protein)
2-4 Tbs	Each: salsa, light sour cream, <u>black beans</u> . Dip with baked chips
½-1 c	Potato salad with <u>egg</u> , low-fat mayo and low-fat plain yogurt
2-4 Tbs	Roasted <u>soy nuts</u> and unsweetened applesauce or raisins
1 bar	<u>Power Bar</u> or other sport bar with 7-10g protein

## **HYDRATION**

Water is the foundation of performance in both exercise and in daily life. Muscle is made up of 75% water and even a 3% loss in water can cause a 10% reduction in strength and an 8% reduction in speed! Many athletes are chronically dehydrated and don't even know it. We cannot rely on our thirst to guide our fluid consumption.

*“The problem is that our thirst mechanism does not “kick in” until approximately 3% dehydration. That means that by the time you are thirsty, you may have already lost 10% of your performance”*

*“A loss of just 2lbs of fluid can increase heart rate by 8 beats/minute”*

### **How much do I need?**

**During the Day:** adults need 8-10 cups per day of non-caffeinated fluids (in addition to drinking during and after exercise). At least 4 hours before exercise, consume 2-3mL/lb body weight of water (this allows enough time to optimize hydration status and for the excretion of any excess fluid).

**During Exercise:** aim to consume 2-4 cups (500mL – 1 L) of fluid per hour of exercise. Drinks should be dilute with no more than 4-8% CHO (Gatorade: 6%, e-load: 6%, Powerade: 8%, Juice: 10%, Pop: 11%). Drinks that are too concentrated can draw water into the stomach rather than being absorbed. This can cause stomach cramping, bloating and nausea. The sport drink you choose should contain 200-350mg of sodium per 250mL (this is because sweat contains ~250g/250mL).

**After Exercise:** Weigh yourself before and after exercise to determine how much fluid you lost – you want to stay between your pre-exercise weight and 2% less. *Weight loss during a workout is water loss, not body fat loss.* To replenish fluids lost during exercise you need to drink 2-3 cups of fluid for every pound lost. Prevention is the best strategy.

### **Eating After Exercise = Faster Recovery**

After a hard workout, your glycogen stores will be depleted, you may be dehydrated and your muscles will need some repair and rebuilding time.

*“If you provide the right fuel soon after exercise you can double the speed of recovery”*

#### **Eating Tips for Faster Recovery from Exercise**

##### **1. Consume a high CHO, moderate protein snack**

- Preferably within 15-30 minutes of your workout

##### **2. The post workout snack should contain a minimum of 50 grams of CHO and 7-15g of protein**

- High CHO are needed because this is the fuel that has been burned
- Consuming a normal high CHO training diet composed of frequent small meals and snacks every 2-3-hours will help achieve glycogen recovery
- Include a source of protein (7-15 grams) to help the muscle repair faster
- This can often be found in an energy bar (be mindful of fat and calories)

##### **3. Drink enough water**

- Staying adequately hydrated will help your circulation to carry waste products away from the muscles
- Consuming a sports drink that contains sodium will help re-hydrate you.

#### **Post Workout Snack Ideas**

<b>Snack</b>	<b>Cals (kcal)</b>	<b>Carbs (g)</b>	<b>Protein (g)</b>
2c chocolate milk (1% or soymilk)	340	56	17
¾ skim milk powder, 2 tbsp chocolate milk powder, 2c cold water	278	50	18
1 L 6-8% carbohydrate sport drink	224	56	0
1c milk (or soymilk), 1-1/4c cereal (e.g. Vector)	275	53	13
Banana + low fat yogurt (175mL)	250	48	13
Peanut butter and jam sandwich	350	50	12
½ trail mix	260	40	10