



**ROCKY
MOUNTAIN
HOOPS**

***NUTRITION
GUIDE***

***HEALTHY EATING FOR BASKETBALL
PLAYERS & ATHLETES***

Recommended Number of Food Guide Servings per Day

	Children			Teens		Adults			
	2-3	4-8	9-13	14-18 Years		19-50 Years		51+ Years	
	Girls and Boys			Female	Male	Female	Male	Female	Male
Vegetables and Fruit	4	5	6	7	8	7-8	8-10	7	7
Grain Products	3	4	6	6	7	6-7	8	6	7
Milk and Alternatives	2	2	3-4	3-4	3-4	2	2	3	3
Meat and Alternatives	1	1	1-2	2	3	2	3	2	3

A Food Guide Serving is simply a reference amount. It helps you understand how much food is recommended every day from each of the four food groups. In some cases, a Food Guide Serving may be close to what you eat, such as an apple. In other cases, such as rice or pasta, you may serve yourself more than one Food Guide Serving.

What is a Carbohydrate? Any member of a very abundant and widespread class of natural organic compounds that includes sugars, starch, and cellulose. In most animals, carbohydrates are the quickly accessible reservoir of energy.

What is a Protein? Large molecules consisting of amino acids which our bodies and the cells in our bodies need to function properly. Our body structures, functions, the regulation of the body's cells, tissues and organs cannot exist without proteins

What is a Fat? Fat is a nutrient. It is crucial for normal body function and without it we could not live. Not only does fat supply us with energy, it also makes it possible for other nutrients to do their jobs.

Recovery Nutrition

Did you know that in a typical hard two-hour workout, you can use up all your stored carbohydrate energy (muscle and liver glycogen), sweat away over two litres of water (along with approximately 1600 mg of sodium), and break down a variety of different body cells including muscle and red blood cells?

That's why what you consume within the critical minutes after training or competing are the most important! Without optimal recovery nutrition commencing within minutes after training, your body is likely to stay "broken down" and may not be fully recovered to train or compete to the maximum for the next 24 hours.

Timing

Experts have determined that your body cells, especially those that store glycogen (energy), are most receptive to being replenished within the first 30 minutes after intense activity. Recovery nutrition can

actually be broken down into two stages: stage 1 which occurs within 30 minutes after exercise, and stage 2 which lasts for 1 to 2 hours post exercise.

Refueling (carbs)

Scientists have determined that between 1 to 1.5 grams of carbohydrate for every kg of body weight should be ingested within stage 1 and then at least this amount consumed again in stage 2. For example, a 70 kg athlete may require 70 to 105 grams of carbohydrates within 30 minutes of training/competition and this amount again an hour later.

Repairing Muscle (Protein)

It has been estimated that 0.2 to 0.4 grams of protein for every kg of body weight be consumed during each stage of recovery. Therefore, a 70 kg athlete would need to consume between 14 to 28 grams of protein during stage 1, and this amount again during stage 2 recovery.

Rehydration (fluids)

Equally important for exercise recovery is rehydration. An athlete should check their weight immediately before and after exercise and aim to consume at least 500 to 750 ml for every 0.5 kg of weight that is lost during exercise. This amount of re-hydrating fluid will easily compensate for urinary losses so that the athlete remains in a positive fluid balance. If a weight scale is not appropriate or available, the athlete can simply continue to drink sufficient fluids until their urine is pale in colour (like pale lemonade), as an indicator of satisfactory fluid replacement. Because sodium is the main electrolyte lost in sweat during exercise, sodium-rich foods should also be consumed during recovery. Examples are: pickles, soy sauce, soup, vegetable juice and table or sea salt.

Examples of things to eat:

Stage 1: within 30 minutes after exercise

- Banana, yogurt, juice
- Peanut butter sandwich, strawberries, milk or juice
- Flavoured milk, granola bar, apple and water
- Sports drink, cheese strings, grapes, juice or water
- Low-fat muffin or bagel, homemade smoothie (blend milk, yogurt, fruit, juice and ice)
- Protein bar, orange, pretzels and juice or water
- Meal replacement drink (Boost™, Ensure™, etc.), carbohydrate sports bar, apple, water

Stage 2: 1-2 hours after exercise

- Meat or cheese submarine sandwich loaded with veggies, milk/juice
- Chicken and vegetable stir-fry with brown rice, milk/juice/water
- Whole wheat pasta with meatballs, vegetable salad, milk/juice/water
- Grilled salmon, quinoa or whole wheat couscous, raw veggies with light dip, milk/juice/water

- Bowl of cereal with yogurt or milk, fresh fruit, water/juice
- Scrambled eggs with cheese and diced peppers, whole wheat bagel, milk/juice/water
- Lentil soup, whole wheat bun, Greek yogurt/regular yogurt, fruit salad, water/soy beverage/milk
- Pasta salad tossed with chopped vegetables, canned tuna or chicken breast, milk/juice/water
- Cottage cheese or Greek yogurt, fruit salad, low-fat muffin, milk/juice/water

HYDRATION

Fluids before exercise:

- Drink enough fluid daily to maintain weight and adequate urine output.
- Drink 5–7 mL/kg of body weight (300–500 mL) of fluid at least 4 hours before exercise.
- Drink 3–5 mL/kg of body weight (150–350 mL) of fluid about 2 hours before exercise, if you have not produced any urine or if your urine is still bright yellow.

Fluids during exercise:

- Drink enough fluid to prevent excessive dehydration. Sweat rates range from 0.4 to 1.8 litres per hour, depending on the individual, the type of sport, and the weather conditions.
- Drink about 0.4–0.8 L of fluid per hour (about 130–250 mL every 20 minutes).

1 kg weight loss = 1 L of fluid loss

For sessions longer than an hour, carbohydrate helps maintain focus, technique, and energy.

Fluids after exercise:

- Replace any fluid and electrolyte deficit. Note that significant dehydration (more than 2–3 pounds weight loss) takes 24–48 hours for complete recovery.
- Athletes who need to exercise again in less than 12 hours should replace fluid loss by 150% (drink 1.5 L of fluid per kg of weight loss). The extra fluid is to compensate for urine lost after drinking a lot of fluid quickly.
- Include sodium with foods or in fluids consumed after exercise. Sodium enhances thirst and fluid retention and helps maintain plasma electrolyte balance.

Snack ideas DURING prolonged exercise

For training sessions lasting several hours and during competition, emphasize fluid and carbohydrate-rich snacks during rest breaks. The amount you consume will vary according to the amount of time available between the snack and the next bout of exercise. Allow time for digestion.

During exercise or for short exercise breaks (less than 1 hour):

- Diluted fruit juice or a sport drink;
- Fruit (dried, fresh, canned, or pureed);
- Bread, pretzels, or crackers and vegetable juice;

- Cereal, sport, or energy bars;
- Arrowroot, fig, oatmeal, or similar low-fat cookies;
- Plain or chocolate milk or meal replacement beverage;
- Fruit yogurt or fruit smoothie.

For a longer break in exercise (1 to 2 hours):

- Juice and a bagel with peanut butter;
- Yogurt, fruit, and water;
- Vegetable juice and a lean meat sandwich;
- Fruit, cookies, and chocolate milk.

For a small meal between practices or events (about 3 hour break):

- Fruit, cereal, and milk;
- Fruit, vegetable soup, lean meat sandwich and milk;
- Steamed vegetables, juice, rice, chicken or fish, yogurt.

Prior to competing, generally allow:

- 3–4 hours to partially digest a big meal;
- 2–3 hours for a moderate-sized meal;
- Less than 2 hours for a pre-event snack.

References

- Kelly Anne Erdman, (2013). Recharge and Replenish – Recovery Nutrition. Retrieved from <http://www.coach.ca/recharge-and-replenish-recovery-nutrition-p144453>
- M. Beelen, Burke, L.M., Gibala, M.J., and van Loon, L.J.C. Nutritional strategies to promote postexercise recovery. *International Journal of Sport Nutrition and Exercise Metabolism*. 2010; 20:515-532.
- American College of Sports Medicine, American Dietetic Association, and Dietitians of Canada. Joint Position Paper: Nutrition and Athletic Performance. *Journal of the American Dietetic Association*. 2009; 109(3):509-527.
- Howarth KR, Moreau NA, Phillips SM, Gibala MJ. Coingestion of protein with carbohydrate during recovery from endurance exercise stimulates skeletal muscle protein synthesis in humans. *Journal of Applied Physiology*. 2009;106(4):1394-1402.
- Karp JR. Chocolate milk as a post-exercise recovery aid. *International Journal of Sport Nutrition and Exercise Metabolism*. 2006;16:78-91.
- Canada's Food Guide, (2013). Recommended Number of Food Guide Servings per Day. Retrieved from <http://www.hc-sc.gc.ca/fn-an/food-guide-aliment/index-eng.php>

Nutrition Handout

Examples of things to eat:

Stage 1: within 30 minutes after exercise

- Banana, yogurt, juice
- Peanut butter sandwich, strawberries, milk or juice
- Flavoured milk, granola bar, apple and water
- Sports drink, cheese strings, grapes, juice or water
- Low-fat muffin or bagel, homemade smoothie (blend milk, yogurt, fruit, juice and ice)
- Protein bar, orange, pretzels and juice or water
- Meal replacement drink, carbohydrate sports bar, apple, water

Stage 2: 1-2 hours after exercise

- Meat or cheese submarine sandwich loaded with veggies, milk/juice
- Chicken and vegetable stir-fry with brown rice, milk/juice/water
- Whole wheat pasta with meatballs, vegetable salad, milk/juice/water
- Grilled salmon, quinoa or whole wheat couscous, raw veggies with light dip, milk/juice/water
- Bowl of cereal with yogurt or milk, fresh fruit, water/juice
- Scrambled eggs with cheese and diced peppers, whole wheat bagel, milk/juice/water
- Lentil soup, whole wheat bun, Greek yogurt/regular yogurt, fruit salad, water/soy beverage/milk
- Pasta salad tossed with chopped vegetables, canned tuna or chicken breast, milk/juice/water
- Cottage cheese or Greek yogurt, fruit salad, low-fat muffin, milk/juice/water

Hydration:

Before Exercise:

- Drink 5–7 mL/kg of body weight (300–500 mL) of fluid at least 4 hours before exercise.
- Drink 3–5 mL/kg of body weight (150–350 mL) of fluid about 2 hours before exercise

During Exercise:

- Drink enough fluid to prevent excessive dehydration. Sweat rates range from 0.4 to 1.8 litres per hour, depending on the individual, the type of sport, and the weather conditions.
- Drink about 0.4–0.8 L of fluid per hour (about 130–250 mL every 20 minutes).

1 kg weight loss = 1 L of fluid loss

For sessions longer than an hour, carbohydrate helps maintain focus, technique, and energy.

Fluids after exercise:

- Replace any fluid and electrolyte deficit. Note that significant dehydration (more than 2–3 pounds weight loss) takes 24–48 hours for complete recovery.
- Athletes who need to exercise again in less than 12 hours should replace fluid loss by 150% (drink 1.5 L of fluid per kg of weight loss). The extra fluid is to compensate for urine lost after drinking a lot of fluid quickly.

Snacks during a Tournament

During exercise or for short exercise breaks (less than 1 hour):

- Diluted fruit juice or a sport drink;
- Fruit (dried, fresh, canned, or pureed);
- Bread, pretzels, or crackers and vegetable juice;
- Cereal, sport, or energy bars;
- Arrowroot, fig, oatmeal, or similar low-fat cookies;
- Plain or chocolate milk or meal replacement beverage;
- Fruit yogurt or fruit smoothie.

For a longer break in exercise (1 to 2 hours):

- Juice and a bagel with peanut butter;
- Yogurt, fruit, and water;
- Vegetable juice and a lean meat sandwich;
- Fruit, cookies, and chocolate milk.

For a small meal between practices or events (about 3 hour break):

- Fruit, cereal, and milk;
- Fruit, vegetable soup, lean meat sandwich and milk;
- Steamed vegetables, juice, rice, chicken or fish, yogurt.

Prior to competing, generally allow:

- 3–4 hours to partially digest a big meal;
- 2–3 hours for a moderate-sized meal;
- Less than 2 hours for a pre-event snack.