



## COOL DOWN WITH FROZEN RED RASPBERRIES

An All-Star Berry for Athletes at Any Level

**Karen Collins, MS, RDN, CDN, FAND**

### **Frozen Raspberries & the Athlete**

The latest joint position statement on nutrition and athletic performance from the Academy of Nutrition and Dietetics, Dietitians of Canada, and American College of Sports Medicine emphasizes the role of healthy eating choices in overall diet and for specific pre-exercise and post-exercise recovery.<sup>1</sup> Individual athletes differ in nutrient needs, and raspberries are a healthy choice to support multiple nutritional priorities.

**Carbohydrate and protein are both vital.** Adequate carbohydrate increases endurance and improves athletic performance, especially for events or workouts of 90 minutes or more. Including carbohydrate during the hours before exercise can help top off muscle glycogen stores. Protein, especially during early recovery after exercise, optimizes muscle growth and repair and may enhance glycogen repletion.<sup>1</sup>

- Raspberries are a perfect vehicle to supply carbohydrate and beneficial nutrients while enhancing the flavor of helpful protein sources, such as yogurt or cottage cheese. Current evidence suggests that dairy protein is especially effective for promoting muscle protein synthesis,<sup>1</sup> and raspberries are an ideal companion.

**Antioxidant-rich foods deserve prime real estate on the plate.** Exercise may create additional oxidative stress, so antioxidant protection is important. Antioxidant supplements have not been shown to improve performance, and may even interfere with training adaptations that rev up body antioxidant systems.<sup>1</sup> A healthy eating pattern is the recommended solution to support antioxidant defenses.

- Vitamin C is a vital antioxidant, and raspberries are all-star sources, supplying 28% of Daily Value in one cup.
- Raspberries are top sources of anthocyanins and ellagitannins, and supply several other polyphenols, too. A growing body of evidence suggest that polyphenols, the bioactive compounds abundant in raspberries, have potential for increasing activity of enzymes in our body's antioxidant defense system.<sup>2</sup> While results seem promising, more research is necessary to see if these results can be replicated in humans.

**Timing is more important than a daily total for carbohydrate and protein.** Rather than setting goals focused only on a daily total, timing matters. In the one to four hours pre-exercise, food and drink choices should contribute to carbohydrate stores and support hydration.<sup>1</sup> Get protein throughout the day, including 15 to 25 grams (depending on body size and needs) within the first two hours after exercise, and a similar amount every three to five hours in meals and snacks.<sup>1</sup>

- Raspberries provide nutrient-rich carbohydrate and complement a variety of other foods and ingredients for portable options to make protein and fluid choices delicious.

**Athletes are not all the same, and needs differ.** Eating choices should support an individual's overall good health and sport-specific needs.

- Raspberries' bounty of vitamin C can help defend against iron deficiency, a problem for some athletes, especially females, vegetarians and distance runners. With or without anemia, low iron hurts exercise capacity and performance.<sup>1</sup> Boost iron intake with a two-pronged approach of choosing iron-rich foods and including foods rich in vitamin C to enhance absorption of non-heme iron from foods like cereal and other grains.
- Nitric oxide is a vasodilator that research suggests might help boost oxygen delivery to muscles and improve athletic performance.<sup>3</sup> Emerging data from in vitro, animal and limited human studies suggest that polyphenol compounds found in raspberries may promote increased production and reduced degradation of nitric oxide.<sup>2,4,5</sup>



## FROZEN RASPBERRIES THROUGHTOUT AN ALTHLETE'S DAY

### PRE-EXERCISE FUELING

Focus on fluids and carbohydrate with low fat and fiber content in the one to four hours before events and workouts. Including some low-fat protein may be beneficial.

- Raspberry smoothies are a go-to choice, with frozen raspberries always in the freezer, ready to pour out just the right amount. (Raspberries are high in fiber, but if you don't drink the seeds that settle to the bottom when blended in a smoothie, fiber intake won't be as high).
- Pancakes or waffles topped with lowfat vanilla yogurt and raspberries, cereal topped with raspberries, a yogurt parfait with layers of raspberries and low-fat granola.

### RECOVERY MEALS & SNACKS

A meal or snack within 15 to 60 minutes after exercise promotes recovery, especially important following high-intensity exercise or if another exercise session will occur within eight hours. Muscles need carbohydrate to replenish glycogen, and protein within two hours post-exercise supports muscle repair and growth.

- Cottage cheese or yogurt with frozen raspberries provides a delicious and refreshing source of protein.
- Energy bars and muffins can provide extra nutrition at lower cost when homemade. When baking with frozen raspberries, leave them frozen until you add them in to keep them whole and avoid color "bleeding".
- Raspberry salsa is great for dipping whole grain chips or veggies like celery or endive. See our raspberry salsa recipe here: <http://www.redrazz.org/recipe/raspberry-salsa>

### SNACKS FOR LOW CALORIE NEEDS

- Blending frozen unsweetened raspberries with nonfat milk and a scoop of protein powder provides nutrients and plenty of protein without excess calories.
- Add raspberries to a salad for color and flavor instead of high-calorie options like croutons.
- Raspberries alone or combined with other fruit are a great accompaniment to reduced-fat string cheese or topper for a dish or plain nonfat yogurt.

### SNACKS FOR HIGH CALORIE NEEDS

- Oatmeal becomes even more nutrient-rich when you make it with milk and stir in some peanut butter. Add frozen red raspberries and a sprinkle of your favorite nuts or seeds.
- Top a dish of yogurt with frozen raspberries (thaw for just a few minutes at room temperature) and a handful of trail mix.
- A raspberry smoothie can boost nutrients and calories. Frozen raspberries with milk or yogurt make a delicious base. Add additional nutrient-rich calories with your favorite nut butter, ground flax seed or chia seeds.

# LOVE RASPBERRY DRINKS AND TEAS? MAKE YOUR OWN!

Check the ingredient list on most bottled “raspberry” tea or juice blends. That tea often contains a heavy load of added sugars. For a healthier raspberry tea, add some muddled raspberries to your own unsweetened tea, or add frozen raspberries to the water as you brew tea at home to have a pitcher at the ready. Delicious flavor without the extra sugar!

Juice blends and commercial smoothies with raspberries on the front may not contain as much raspberry nutrition as you think. When you make your own, you can skip or minimize added sugars and keep costs lower.

Raspberries can make it more enticing to meet fluid recommendations. Older athletes may especially benefit, since they may have decreased thirst sensation and need encouragement to drink enough following exercise.<sup>1</sup> Adding some frozen raspberries to a glass of sparkling water can make it easier to reach a goal of less sweetened drinks and more water. If you have an infusion pitcher that flavors plain tap water, frozen raspberries are a perfect choice for the inner tube.

Visit [www.redrazz.org](http://www.redrazz.org) for raspberry recipes covering sweet to savory, to soups and smoothies!

## ABOUT THE WASHINGTON RED RASPBERRY COMMISSION

The Washington Red Raspberry Commission (WRRC) was formed in 1976 to support and promote the raspberry industry. The Commission operates programs that facilitate cultural and harvesting improvements, as well as regulates unfair trade practices within the industry. Also, the Commission establishes promotion plans and conducts programs for advertising, sales, promotion, and/or other programs for maintaining present markets and/or creating new or larger markets for raspberries, and it provides for research in the production and processing of raspberries.

## SOURCES

1. *Nutrition and Athletic Performance [Joint Position Statement]. Med Sci Sports Exerc. Mar 2016;48(3):543-568.*
2. *Burton-Freeman BM, Sandhu AK, Edirisinghe I. Red Raspberries and Their Bioactive Polyphenols: Cardiometabolic and Neuronal Health Links. Advances in Nutrition. Jan 2016;7(1):44-65.*
3. *Rassaf T, Lauer T, Heiss C, et al. Nitric oxide synthase-derived plasma nitrite predicts exercise capacity. Br J Sports Med. Oct 2007;41(10):669-673; discussion 673.*
4. *Zhu Y, Xia M, Yang Y, et al. Purified anthocyanin supplementation improves endothelial function via NO-cGMP activation in hypercholesterolemic individuals. Clin Chem. Nov 2011;57(11):1524-1533.*
5. *Yamagata K, Tagami M, Yamori Y. Dietary polyphenols regulate endothelial function and prevent cardiovascular disease. Nutrition. Jan 2015;31(1):28-37.*

**STAY IN  
TOUCH!**

[redrazz.org](http://redrazz.org) |  @red\_razz |  @redrazz |  @red\_raspberries |  @red\_razz