

# SportsNutrition

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## The Athlete's Kitchen

Whether you are looking for a hit, boost, pleasing stimulant, or excuse to socialize with your friends, coffee is the go-to beverage for many athletes. Coffee-drinkers enjoy the way a cup of morning brew enhances their feelings of well-being and their ability to accomplish daily tasks. An estimated 80% of us drink coffee daily. Why, we are more likely to drink coffee than eat fruit! Thank goodness moderate coffee intake is typically not associated with health risks.

For athletes, caffeine is a proven performance enhancer. In their new book *Caffeine for Sports Performance*, sports dietitians Louise Burke and Ben Desbrow and exercise physiologist Lawrence Spriet address all-things-caffeine that an athlete might want to know. Here are just a few tidbits that I gleaned from this comprehensive yet interesting-to-read resource. Perhaps the information will help you add a little bit of zip to your workouts. *Note:* No amount of caffeine will compensate for a lousy diet. If you choose to use caffeinated products to enhance your sports performance, make sure you are also fueling wisely!

- A cup of pre-exercise coffee can help most athletes work harder—without realizing it. Caffeine has been shown to enhance performance by about 1% to 3%, particularly in endurance sports. For example, cyclists who consumed caffeine prior to a 24-mile (40-km) time-trial generated 3.5% more power than when they did the ride without caffeine.
- Athletes vary in their responsiveness to caffeine, from highly effective to negative. Some of the side effects associated with too much caffeine include higher heart rate, anxiety, “coffee stomach”, irritability, and insomnia.
- The recommended performance-enhancing dose of caffeine is about 1.5 mg/lb (3 mg/kg) body weight. This can be consumed 1 hour before the event, and/or during the event (such as a caffeinated gel or defizzed cola every hour). For example, triathletes commonly consume caffeinated gels before each segment, to distribute the caffeine throughout the event rather than have a big pre-race jolt that might make them feel shaky and unable to concentrate. Some athletes delay caffeine intake until fatigue starts to appear, and then they ingest 0.5-1 mg/lb (1-2 mg/kg) body weight.
- Caffeine's ergogenic effect maxes out at about 200 to 250 mg caffeine. (This is much less than previously recommended.) *More is not better.* Experiment during training to learn what amount (if any) works best for your body!
- Because the amount of caffeine in coffee and tea varies, elite athletes commonly use caffeine pills or commercial products to ensure the desired intake. A comparison of the caffeine content in 16 ounces coffee from 20 coffee vendors ranged from about 60 to 260 mg. Even when the researchers purchased the same brand of coffee (Starbucks Breakfast Blend) on six consecutive days, the caffeine content ranged from about 260 to 565 milligrams per 16 ounces.
- Research suggests the caffeine content of espresso also varies. A customer might get served 0.5 to 3.0 ounces of espresso (depending on the barista's generosity) with a caffeine range of 25 to 214 mg. In general, the larger vendors (such as Starbucks) offer a more consistent product. But this

## Caffeine: Performance Enhancement in a Mug

means you don't know what you will be getting if you plan to purchase a pre-exercise espresso or coffee.

- Energy drinks are a popular source of caffeine. A study of 500 college students in North Carolina reports 51% drank at least one energy drink in an average month in the semester. Sixty-seven percent used the energy drink to stay awake; 65%, to increase energy; and 54%, to drink with alcohol while partying. Of the party-drinkers, 49% consumed 3 or more energy drinks. That makes for a wide-awake drunk who may believe it's OK to drive a car...
- Caffeinated chewing gum is popular among (sleep deprived) soldiers. The gum effectively boosts physical and mental performance and helps maintain reaction time, vigilance, and ability to think clearly. The caffeine in chewing gum gets delivered quicker than via a pill (5 vs. 30 minutes) because it gets absorbed through the cheeks, not the gut.
- Caffeinated colas offer not only caffeine but also a hefty dose of sugar for fuel. The combination works! Hence, some athletes claim defizzed Coca-Cola is their preferred sports drink despite having only 35 mg per 12-ounce can.
- Caution: Consuming caffeine might contribute to negative effects. For example, let's say you are running, rowing, or swimming in more than one competitive event in a day. If caffeine helps you go harder in the first event, will that “fry” you for the second event? Can taking another dose of caffeine counter that fatigue? With a weekend tournament, will too much caffeine on the first day ruin your sleep, so you are unable to perform as well on the second day? Until research answers those questions, be sensible!
- Caffeine is only a weak diuretic and is no longer considered to be dehydrating. A novice coffee drinker can become tolerant to the diuretic effects of caffeine in 4 to 5 days of regular caffeine intake. Even high doses (3 mg/lb; 6 mg/kg) have no significant effect on urine production in coffee or tea drinkers. Hence, there appears to be no hydration-related reason for athletes to avoid caffeinated beverages.
- In 1984, caffeine was banned by the International Olympic Committee (IOC) and the World Anti-Doping Agency (WADA). But in 2004, WADA reversed the ruling. New research indicated the amount of caffeine needed to reach the threshold dose was detrimental to performance. Although caffeine is no longer banned by WADA, it is on the banned list for NCAA, the governing body of collegiate sports. Collegiate athletes can be cited for doping if their caffeine level is higher than 15 micrograms/ml urine. (A normal urine caffeine level is between 1-2 micrograms).
- Youth athletes should be fully mature and fueling optimally before even considering the use of caffeine. Again, no amount of caffeine will compensate for a lousy sports diet.
- For even more helpful tips, read *Caffeine for Sports Performance*. The book is not a snoozer!

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