Caffeine in Athletic Performance

I hear caffeine may give my workouts an extra boost and improve performance. I also know that high doses can cause a positive test for a banned substance.

Should caffeine be part of my nutrition plan? Are some forms a better choice than others?



KEY POINTS

Moderate daily caffeine intake (200-300 milligrams) from food, drinks or supplements is generally considered safe and well tolerated. Evidence suggests benefits for physical and mental performance, but the dose, source and timing of intake all need careful thought.

How Much Caffeine Do You Take In?

Food or Drink with Caffeine	Caffeine Content (Milligrams)
8 ounces of drip coffee brewed at home	80-100
8 ounces of instant coffee	65-100
2 ounces of espresso (latte, cappuccino, Americano)	100
8 ounces of decaf coffee	5
8 ounces of brewed tea	50
12 ounces of caffeinated soft drink	35-55
12-20-ounce serving of an energy drink	Amounts vary; read drink and bar labels. Typical doses: 80-350 milligrams.
Caffeinated energy bar	50 or 100
1.5 ounces of dark chocolate	30
One caffeine tablet	200

Prepared by ASPDA and SHPN Registered Dietitian Nutritionists (RDNs). For tailored fueling and supplement advice, speak with a sports RDN, especially a Board Certified Specialist in Sports Dietetics (CSSD), or an athletics health care provider.



USING CAFFEINE TO SUPPORT PERFORMANCE

- **Food comes first.** Feeling more energized by caffeine does not replace the energy that food supplies. Caffeine's possible benefits cannot make up for poor eating or lifestyle habits, such as too little sleep. A sports dietitian or your primary athletics health care provider can help build a nutrition plan suited to your energy, nutrient and recovery needs.
- **Dose and timing.** Before using caffeine to support performance, discuss the right amount and timing with your athletics health care provider or dietitian. Performance effects may last up to four hours. Caffeinated chewing gum can reach the bloodstream sooner because caffeine is absorbed through the mouth.
- **Product form.** Supplements and medicines usually contain standardized caffeine amounts. Levels in coffee, tea and energy drinks can differ widely. Read each label so you know the amount you take in.
- **Current habits.** Consider all the caffeine you already use during the day before adding another product. Combining coffee, energy drinks and supplements can raise your intake quickly and cause unwanted reactions.
- **Personal response.** People who metabolize caffeine faster often see greater performance benefits. Slower metabolizers may have more pronounced side effects and fewer benefits. Begin with a cautious dose, and test caffeine or other new fueling strategies BEFORE competition so you know how your body responds.

POSSIBLE RISKS

- The NCAA classifies caffeine as banned at higher doses. A urine concentration of 15 micrograms per milliliter or more produces a positive drug test.
- Caffeine metabolism varies by person, but 15 micrograms per milliliter is generally equated with six to eight cups of coffee.
- As energy drinks have grown popular, more products now mix vitamins, herbs and other ingredients that may not all be safe. Supplements, unlike medicines, need no FDA approval before being sold. Ask your athletics health care provider or dietitian before trying a new caffeine source.
- Large caffeine doses may cause stomach or intestinal problems, nausea, shaking and overstimulation that can harm mental health, training, sleep and performance.
- Regular users may have withdrawal symptoms such as headaches, fatigue, depression, irritability, insomnia, a fast or irregular heartbeat and raised blood pressure.
- Taking caffeine without enough fluid may impair temperature regulation during training in hot conditions.

POSSIBLE BENEFITS

- Better muscular endurance, strength, power and sprint performance.
- Less pain and perceived fatigue, helping you train at higher intensities.
- Better body coordination, sharper focus and concentration, and more ability to maintain training intensity.



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