

Dance/USA

Task Force on Dancer Health

Caffeine and Energy Drinks in Dance: Risks and Benefits

Energy drinks are becoming increasingly popular among dancers and athletes. Dancers often deal with demanding rehearsal and performance schedules, which may make them feel fatigued. Advertisements for energy drinks claim these beverages offer a quick and easy way to improve performance, reduce fatigue and stress, and heighten concentration. However, nutritional science and dance medicine research suggest that energy drinks may not be the best choice and may be risky for the dancer.

This informational paper provides detailed information regarding the contents of energy drinks and offers important considerations for their effect on dance activity. Our goal is to help dancers make educated, informed decisions on how to best care for their bodies, their health, and their careers.

ENERGY DRINKS AND CAFFEINE

Energy drinks are defined as highly caffeinated beverages that often contain other herbal stimulants and high amounts of sugar. Caffeinated beverages like coffee and tea are everywhere, and as a result, many consider caffeine to be a “safe” substance. Some dancers and athletes may be aware of scientific studies establishing that moderate caffeine consumption can improve aspects of performance, like alertness, reaction time, and endurance; however, the full picture is more complicated.

Safe caffeine consumption depends on an individual’s age and genetics. For most teens, the maximum safe daily dosing is around 100 mg/day, and for most adults, it’s around 400 mg/day. In either case, the benefits of caffeine are best realized by smaller doses – larger doses tend to simply increase unpleasant side effects like shakiness, anxiety, and headaches. As artists, these side effects can interfere with timing, intent, and the strength of movements as well as artistry.

A cup of strong coffee contains 100-140 mg of caffeine. A Starbucks *grande*-sized latte contains 150. By contrast, energy drinks may include as much as 500 mg of caffeine per can.

This total is not always obvious on the nutritional label. For example, guarana, a popular ingredient in many energy drinks, releases additional caffeine in the body after ingestion. However, the amount of guarana in a drink is counted separately from the amount of caffeine. Caffeine is also present in dozens of other products, like some types of kombucha, matcha tea, energy bars, sodas, and even over-the-counter pain relievers. In this environment, it's easy to accidentally exceed safe levels of daily caffeine consumption, resulting in a condition known as caffeine toxicity.

Mild forms of caffeine toxicity may manifest simply as "the jitters" or other unpleasant side effects, but more severe cases may include heart palpitations (the sensation of feeling your heart pounding or racing), high blood pressure, and vomiting. Extreme caffeine toxicity can result in strokes or even death, which has unfortunately occurred in several cases when individuals consumed multiple energy drinks in quick succession, thinking they were harmless.

OTHER HEALTH RISKS

Many dancers inaccurately believe that energy drinks are safe or even healthy. However, these drinks are considered "supplements," and, as such, are not regulated by the Food and Drug Administration (FDA). While careful and moderate consumption of energy drinks is unlikely to bring about negative health effects, it's important to be mindful of the content of energy drinks and the way these substances can affect the human body.

Aside from caffeine, energy drinks contain many other additives and stimulants designed to increase feelings of energy. These include guarana (as noted above, guarana releases additional caffeine into the body), ginseng, B vitamins, sugar (often in greater amounts than a dancer needs), and even alcohol. All of these substances can be harmful when ingested in excess, and should be carefully considered by the health-conscious dancer.

Dancers should also be aware of the effect energy drinks can have on other medications. Some antidepressants, anti-anxiety medications, and oral contraceptives are processed in the liver by the same enzyme that is used to break down caffeine. When these medications are present at the same time as a large amount of caffeine, this enzyme is overwhelmed and the medication is not processed normally. Dancers taking prescription pills should always ask their health care providers about possible interactions with caffeine.

Finally, some dancers view energy drinks as a way to "power through" intense dance schedules without needing to eat a normal meal. For some, replacing lunch with an energy drink may be a simple convenience on a hectic day; for others, this may be part of an intentional strategy aimed at restricting calories. Among its other effects on the body, caffeine can suppress appetite. In any event, using energy drinks as meal replacements robs the dancer of all the important nutritional and psychological benefits of healthy eating patterns. It is important for dancers with

questions about fueling or weight management to discuss their concerns with an appropriate healthcare provider for expert guidance.

GETTING ENERGY SAFELY

The occasional energy drink or cup of coffee will not be harmful to the vast majority of dancers. But feeling energized and performing at one's best are influenced more by consistent, healthy, everyday habits than by any supplement or drink. This is where dancers should focus first.

This means paying attention to the basics: get 7-9 hours of sleep each night; drink plenty of water and electrolytes (hydration needs vary, but a good estimate is to divide your weight in pounds by 2, and drink that many ounces of water daily); and eat quality meals with natural, unprocessed ingredients throughout the day, ensuring you get a good balance of carbohydrates, healthy fats, and protein. Several snacks can take the place of a larger lunch if you don't have time or don't want to dance on a full stomach.

If you do feel low on energy, start by checking your total calories. While individual needs vary, in general, dancers need more calories than they think. Diets providing 1600 calories per day are almost certainly too small. Due to their activity level, dancers often need well over 2000 and, in some cases, over 3000 calories daily.

If you're still feeling sluggish, consider scheduling a visit with a medical professional. Medical issues such as anemia or thyroid problems can make you feel tired, but require proper diagnosis and treatment to address. Consuming more caffeine will not help!

Finally, if you do choose to use caffeine, follow the science. The effects of caffeine can vary significantly in individuals (and some people experience no benefit) but a good starting point is to limit consumption to 3-6 mg of caffeine per kilogram of bodyweight (or 1.3-2.5 mg of caffeine per pound of bodyweight) per day. For a 125-pound dancer, that translates to 240 mg per day. That's two cups of coffee, or about half of most energy drinks. For a 160-pound dancer, that's about 320 mg of caffeine per day, which is roughly one Starbucks "grande"-sized plain coffee. Measurable performance improvements maximize about an hour after consumption and last for 1-5 hours. To avoid interfering with sleep, try to avoid consuming caffeine after noon.

We have included some references below for more reading and information. Arm yourself with the facts and stay healthy and safe!

RESOURCES

Antonio J. et al. (2023) Common questions and misconceptions about caffeine supplementation: what does the scientific evidence really show? *J Int'l Soc Sports Nutr* 21:1, 2323919.

Chrysant SG, Chrysant GS. Cardiovascular complications from consumption of high-energy drinks: recent evidence. *J Hum Hypertens*. 2015 Feb;29(2):71-6. doi: 10.1038/jhh.2014.47. Epub 2014 Jun 19. PMID: 24943288.

De Sanctis V, Soliman N, Soliman AT, Elsedfy H, Di Maio S, El Kholy M, Fiscina B. Caffeinated energy drink consumption among adolescents and potential health consequences associated with their use: a significant public health hazard. *Acta Biomed*. 2017 Aug 23;88(2):222-231. doi: 10.23750/abm.v88i2.6664. PMID: 28845841; PMCID: PMC6166148.

European Food Safety Authority. Scientific opinion on the safety of caffeine. *EFSA J. Panel Diet. Prod. Nutr. Allerg*. 2015; 13:4102.

Jenkins NT, Trilk JL, Singhal A, et al. Ergogenic effects of low doses of caffeine on cycling performance. *Int. J. Sport Nutr. Exerc. Metab*. 2008; 18:328–42.

Kreutzer, et al. "Caffeine Supplementation Strategies Among Endurance Athletes." 2022. *Frontiers in Sport and Active Living*.

Lowery L et al. (2023) International society of sports nutrition position stand: coffee and sports performance. *J Int'l Soc Sports Nutr* 20:1,2237952.

MacKnight, John M., MD, CAQSM, FACSM. Energy Drink Use in Sport: All Risk, No Gain. *Current Sports Medicine Reports* 19(3):p 102-103, March 2020. | DOI: 10.1249/JSR.0000000000000692.

Martins, et al. "Caffeine and Exercise Performance: Possible Directions for Definitive Findings." 2020. *Frontiers in Sport and Active Living*.

Disclaimer: The information on Energy Drinks contained in this paper is intended to help guide and inform the dancer. It is not meant to take the place of the advice of a medical professional. This information is provided by Dance/USA Task Force on Dancer Health.

Written by: Marie Scioscia, M.S., R.D., CDN; Rory Cullen, PT, DPT; Catherine Cullen, PT, DPT; Megan Meier, M.D. (2025)