

EXHIBIT 9

Spilling the Beans: How Much Caffeine is Too Much?

Caffeine can be part of a healthy diet for most people, but too much caffeine may pose a danger to your health.



Español (<https://www.fda.gov/consumers/articulos-para-el-consumidor-en-espanol/al-grano-cuanta-cafeina-es-demasiada>)

Feedback

Do you drink coffee or tea first thing in the morning, hoping the caffeine in it will jump-start your day? Do you follow it up with more coffee, an energy drink, or other caffeinated beverages throughout the day?

According to medical experts, including here at the FDA, caffeine can be part of a healthy diet for most people, but too much of it can have negative effects and large amounts may pose a danger to your health. Depending on factors such as body weight, medications you may take, certain medical conditions, and individual sensitivity, “too much” can vary from person to person. Be aware of the level of caffeine in your diet and look out for signs when it’s too much.

Daily Caffeine Consumption for Most Adults

For most adults, the FDA has cited 400 milligrams* a day — that’s about two to three 12-fluid-ounce cups of coffee — as an amount not generally associated with negative effects. However, there is wide variation in both how sensitive people are to the effects of caffeine and how fast they eliminate it from the body.

Certain conditions tend to make people more sensitive to caffeine’s effects, as can some medications. If you are concerned about a condition or medication, or if you’re pregnant, trying to become pregnant, or breastfeeding, we recommend talking to your health care provider about whether you need to limit caffeine consumption.

“Energy Drinks” and Children and Teens

Medical experts advise against energy drinks for children and teens because of the levels of sugar and caffeine, according to the American Academy of Pediatrics.*

Too much caffeine in children and teens can cause increased heart rate, heart palpitations, high blood pressure, anxiety, and lead to sleep problems, digestive problems and dehydration.

The [Dietary Guidelines for Americans \(https://www.dietaryguidelines.gov/\)](https://www.dietaryguidelines.gov/) say that drinks containing caffeine should be avoided for children younger than age 2 and beverages that contain no added sugars should be the primary choice for children and teens. These include water and unsweetened fat-free or low-fat milk — including low-lactose or lactose-free options or fortified soy beverage — and 100% juice within recommended amounts.

Talk with your health care professional about your child’s or teen’s caffeine consumption.

*[Children Should Avoid Drinks with Sugar, Caffeine, AAP News, December 1, 2023](https://publications.aap.org/aapnews/news/27276/Children-should-avoid-drinks-with-sugar-caffeine)

[\(https://publications.aap.org/aapnews/news/27276/Children-should-avoid-drinks-with-sugar-caffeine\)](https://publications.aap.org/aapnews/news/27276/Children-should-avoid-drinks-with-sugar-caffeine) [\(http://www.fda.gov/about-fda/website-policies/website-disclaimer\)](http://www.fda.gov/about-fda/website-policies/website-disclaimer)

Caffeine May Be in Products You May Not Expect

Coffee, tea, and chocolate are well-known sources of caffeine, but it can also show up in products you may not expect.

Typical Caffeine Content in 12-fluid-ounce Drinks*

Drink Type	Typical Caffeine Amount
caffeinated soft drink	23 to 83 milligrams
green tea	37 milligrams
black tea	71 milligrams
coffee, regular brewed non-specialty	113 to 247 milligrams
energy drink	41 to 246 milligrams

*Caffeine content adapted from [Assessing dietary exposure to caffeine from beverages in the U.S. population using brand-specific versus category-specific values, Food and Chemical Toxicology, June 2015](https://www.sciencedirect.com/science/article/pii/S0278691515001039)

[\(https://www.sciencedirect.com/science/article/pii/S0278691515001039\)](https://www.sciencedirect.com/science/article/pii/S0278691515001039) [\(http://www.fda.gov/about-fda/website-policies/website-disclaimer\)](http://www.fda.gov/about-fda/website-policies/website-disclaimer)

The amount of caffeine in specific products, and container sizes, can vary. If you have questions about a product, contact the manufacturer. You can find more information about caffeine levels in food and beverages on [U.S. Department of Agriculture Food Data Central \(https://fdc.nal.usda.gov/index.html\)](https://fdc.nal.usda.gov/index.html).

Energy or protein bars, ice cream, chewing gum, dietary supplements, and over-the-counter medications are some of the products that may have caffeine as an added ingredient.

It's important to know if a product has caffeine, especially if you're sensitive to it, limiting your intake, or giving the product to children or teens.

There's no difference in the way your body handles or the safety between the caffeine that occurs naturally in coffee and tea, for example, and what's added to a product, so be sure to consider all sources of caffeine in your diet.

“Decaffeinated” Does Not Mean Caffeine-free

Decaffeinated coffees and teas have less caffeine than their regular counterparts, but still contain some caffeine. For example, decaf coffee typically has 2 to 15 milligrams in an 8-fluid-ounce cup. If you react strongly to caffeine in a negative way, you may want to avoid these beverages altogether.

Check the Product Label and Other Tips to Watch Caffeine Intake

- All packaged foods are required to list caffeine in the “list of ingredients” when it is added to products as a stand-alone ingredient.
- When a packaged food contains an ingredient – such as chocolate chips – that inherently contains caffeine, then caffeine will not appear on the list of ingredients. However, the caffeine-containing ingredient (for example, chocolate) will be listed.
- Many packaged foods, including beverages and dietary supplements containing caffeine, voluntarily provide information on the label as to how much caffeine they contain.
- Restaurants and other retail food establishments serving food and drinks are not required by law to tell you how much caffeine is in the products they serve. The FDA encourages you to ask retailers if their products have caffeine and if so, how much.
- Take care the first time you consume a new packaged food or beverage containing added caffeine if the amount of caffeine in the food is not declared on the label.
- If you're used to drinking caffeine-containing beverages every day, and want to cut back, it's best to do so gradually. Caffeine withdrawal isn't considered dangerous but can be unpleasant.

Be Aware of How Much Caffeine Is in “Energy Drinks”

The name “energy drink” was developed by the food industry to describe certain beverages. Generally, “energy drinks” have 54 to 328 milligrams of caffeine per 16 fluid ounces, with a few brands containing 41 to 246 milligrams of caffeine per 12 fluid ounces. Most energy drinks in the U.S. have the total amount of caffeine from all sources, such as other ingredients that may have caffeine, like guarana, listed on the label.

The FDA does not have a regulation specific to “energy drinks.” All of the general regulations about the [safe use of ingredients \(/food/food-ingredients-packaging/food-additives-and-gras-ingredients-information-consumers\)](#) apply to these beverages.

Pure and Highly Concentrated Caffeine Products

The FDA estimates toxic effects, like seizures, can be observed with rapid consumption of around 1,200 milligrams of caffeine, or less than 1/2 teaspoon of pure caffeine.

[Pure and highly concentrated caffeine products \(/food/information-select-dietary-supplement-ingredients-and-other-substances/pure-and-highly-concentrated-caffeine\)](#) can have serious health consequences, including death. In the mid-2010s, pure or highly concentrated caffeine products emerged on the market. They were often marketed in bulk packaging with up to thousands of servings per container, which required consumers to measure out a safe serving from what can be a toxic or even lethal amount of bulk product. The FDA took action to protect consumers from these products. However, some products containing pure and highly concentrated caffeine remain on the market. Consumers should exercise caution when using such products.

Signs of Consuming Too Much Caffeine

Too much caffeine can cause a variety of symptoms:

- increased heart rate
- heart palpitations
- high blood pressure
- insomnia or sleep disruptions
- anxiety
- jitters
- upset stomach
- nausea
- headache

Talk with your health care professional about your caffeine consumption if you have any of these symptoms.

FDA Oversight of Products with Added Caffeine

By law, food companies are responsible for making sure any use of caffeine in their products is safe. Caffeine, like any substance added to food, must be safe under the conditions it’s expected to be used, including the amount expected to be consumed.

The FDA monitors the marketplace to help ensure caffeine is safely used in the products we regulate. We’ll act when needed, including collaborating with the Federal Trade Commission when marketing claims made by a company become a health and safety issue.

Additional Information

A 2017 systematic review (<https://www.sciencedirect.com/science/article/pii/S0278691517301709>) (<http://www.fda.gov/about-fda/website-policies/website-disclaimer>) of health outcomes associated with caffeine intake by the Institute for the Advancement of Food and Nutrition Sciences confirmed the safety of the 400 milligrams a day level for most adults. The research was structured to meet gold standards for systematic reviews outlined in the National Academies of Science, Institute of Medicine 2011 publication, “Finding What Works in Health Care — Standards for Systematic Reviews”

Was this page helpful? * (required)

Yes

No

Submit

 An official form of the United States government. Provided by [Touchpoints](#)