

# Sounding the alarm about caffeine powder

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In a world craving stimulation to stay awake, function at peak levels or just feel a bit brighter, caffeine is the ready ingredient in an expanding array of foods, beverages and medications.

But 100 percent caffeine powder, the psychoactive stimulant at its purest form, may go too far. The powder is available online in bulk quantities up to 2.2 pounds, despite a recommended dose of 1/32nd to 1/16th of a teaspoon, equivalent to a cup or two of coffee.

A teaspoon of caffeine powder is roughly equal to 25 to 30 cups of coffee, which likely is lethal. At least two deaths last year were attributed to the growing use of caffeine powder.

Logan James Stiner, 18, of LaGrange, Ohio, died May 27 of a caffeine powder overdose, one week before his high school graduation. Just a month later on June 24, James Wade Sweatt, 24, of Alpharetta, Ga., died of a similar overdose. The deaths revealed the powder's potential for easy overdosing.

The U.S. Food and Drug Administration, Sen. Sherrod Brown, D-Ohio, and the Council for Responsible Nutrition - a trade association for the supplement industry - now recommend people avoid the product altogether. They've called for [retail sales](#) to be regulated or banned.

The FDA posted a second advisory against its use in December.

Michael M. Landa, director of the FDA's Center for Food Safety and Applied Nutrition, stated in his blog last month that the powder is packaged and marketed as a source of energy rather than a stimulant, prompting purchasers to overlook dosage recommendations. Caffeine stimulates the central nervous system with impacts on the heart, brain and other organs. The FDA notes there is no easy way to measure a correct dose.

"Pure caffeine is a powerful stimulant and even

very small amounts may cause an accidental overdose," Landa said, with FDA spokeswoman Jennifer Dooren noting that "the difference between a safe amount and a lethal overdose of caffeine is really small."

"The FDA is concerned about powdered-caffeine products and is considering every legal option," she said.

At news conferences in December, then again last week, Brown said he and Sen. Richard Blumenthal, D-Conn., have pressed the FDA that caffeine powder "should be off the shelves." The senators are considering introducing legislation to ban retail sales of the powder.

"If it is added to energy drinks, it should be added at the (production) plant," Brown said. "There is no legitimate use for this stuff, and there is no business why it is sold retail."

The Council for Responsible Nutrition says caffeine powder is giving the supplement industry a bad name.

"Even a quarter teaspoon can present health risks to users," said Steve Mister, council president and CEO. "We believe the FDA already has authority to act in this case and remove it from the market if it causes unreasonable risk and illness. Given case histories I'm familiar with, I think the FDA can use its authority to take enforcement action to restrict the product."

NutraKey, a supplement company that prominently advertises pure caffeine powder on the Internet, did not respond to an email request for comment.

Caffeine in small doses generally is considered safe, although some people are sensitive even to nominal doses. Coffee and tea, which naturally contain caffeine, typically are sipped, providing a low, steady dose. But new products often are consumed rapidly, providing a more concentrated

hit.

Consumers today may not realize the number of products that contain caffeine, creating a cumulative effect. A single energy drink can provide upwards of 400 milligrams of caffeine, equal to three or four cups of coffee. Pain relief, weight-control, stay-awake and even menstrual-cramp treatments also contain it as do various snack foods, ice creams and some yogurts.

Food products containing cocoa beans (chocolate), coffee, various teas, kola nut, guarana berries and yerba mate, all of which naturally contain caffeine, add to consumption levels, with other products mixing natural and added sources of caffeine.

The American Association of Poison Control Center's annual reports show 5,238 calls, 2010 through 2013, related to caffeine overdoses from [energy drinks](#), with 51 percent of those calls involving children 5 or younger, and nearly one in five requiring treatment at a health-care facility.

An additional 11,025 calls during that same period involved overdoses from other food, beverage or medicinal sources of caffeine. That represents a total of 16,263 calls to poison centers in four years that were related to caffeine overdoses. Numbers aren't available specifically for caffeine powder.

Michael J. Lynch, medical director of the Pittsburgh Poison Center said his center received 370 calls last year related to caffeine exposure and toxicity, or about one a day. Several patients a month come to UPMC emergency rooms due to problems with caffeine.

"Symptoms include pain in the abdomen, vomiting that doesn't stop, with shakiness that's pronounced and patients who are very agitated," Lynch said. Excess caffeine can cause seizures and [abnormal heart rhythms](#), with blood pressure rising then falling. The result is insufficient oxygen to the brain and other organs, which can be lethal. Some calls to the center involved people attempting suicide by overdosing on caffeine.

But the center, he said, receives only an

occasional call concerning caffeine powder, mostly from parents who found their children with it.

One of the sickest patients he treated, he said, was a young woman who overdosed on a treatment for menstrual cramps. Her abnormal heart rhythms and seizures required dialysis to remove [caffeine](#) from her system. It's the common attitude, he said, that if one is good, more is better.

"It's out there, part of our culture and a lot of people use it, but I think some of these products have taken it to a new level, where you see some danger in the use and misuse of them," Dr. Lynch said. "When used appropriately, it is probably not a danger. But when they are used inappropriately it can be deadly, so we must continue to educate people about these products."

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