

# Study: Increase in calls to US poison control for natural psychoactive substances

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Natural substances with psychoactive effects have been used by people for religious, medicinal and recreational purposes for millennia. Lack of regulation has led to an increase in their availability, especially online. Some psychoactive substances may be appealing to recreational users because of the perception they are safer because they're "natural." However, these substances can produce psychedelic, stimulant, sedative, euphoric and anticholinergic symptoms, which are cause for concern.

A new study conducted by the Center for Injury Research and Policy and the Central Ohio Poison Center at Nationwide Children's Hospital found there were more than 67,300 calls to U.S. Poison Control Centers regarding exposures to natural [psychoactive substances](#). The study looked at calls from January 2000 through December 2017, which totaled an average of 3,743 exposures each year, or approximately 10 calls every day.

"These substances have been associated with a variety of serious medical outcomes including seizures and coma in adults and children," said Henry Spiller, MS, D.ABAT, co-author of this study and director of the Central Ohio Poison Center at Nationwide Children's. The increasing rate of exposures to [marijuana](#) accounted for almost half of all natural psychoactive substance exposures and can be attributed, in part, to the increasing number of states that have legalized marijuana for medical or recreational use. "As more states continue to legalize marijuana in various forms, parents and [health care providers](#) should treat it like any other medication: locked up, away, and out of sight of children," said

Spiller. "With edibles and infused products especially, curious children are mistaking them for kid-friendly candy or food, and that poses a very real risk for harm."

The study, published online today in the journal *Clinical Toxicology*, found that most exposures occurred among individuals older than 19 years of age (41%) and 13-19-year-olds (35%). The majority (64%) of cases occurred among males, and 91% occurred at a residence. The substances most commonly involved were marijuana (47%), anticholinergic plants such as jimson weed (21%), and hallucinogenic mushrooms (16%). Kratom, khat, anticholinergic plants, and hallucinogenic mushrooms were the substances with the highest percentages of hospital admission and serious medical outcomes.

Despite an increase in the overall rate of exposure to natural psychoactive substances, most [substances](#) showed a significant decrease in [exposure](#) rate from 2000-2017, except for marijuana (150% increase), nutmeg (64% increase), and kratom. Kratom demonstrated a nearly 5,000% increase from 2011-2017 and accounted for eight of the 42 deaths identified in this study. These findings support the need for increased efforts to prevent kratom-associated morbidity and mortality.

Of the 42 deaths identified in this study, seven were among children. Five of the deaths were to 13-19-year-olds and involved anticholinergic plants, [hallucinogenic mushrooms](#), kava kava and marijuana. Both deaths among children 12 years and younger involved marijuana. Similar to previous studies, almost all cases among [children](#) younger than 6 years old were primarily exposures associated with exploratory behaviors. Children in this age group are mobile, curious and generally unaware of the potential danger of poisoning. Children younger than 6 years accounted for one-fifth of natural psychoactive substance cases, of which, the majority involved anticholinergic plants and marijuana.

**More information:** Connor O'Neill-Dee et al. Natural psychoactive substance-related exposures reported to United States poison control centers, 2000–2017, *Clinical Toxicology* (2019). [DOI: 10.1080/15563650.2019.1688341](https://doi.org/10.1080/15563650.2019.1688341)

Provided by Nationwide Children's Hospital

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