

Study finds 1,500% increase in monthly poison center calls due to e-cigarettes

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Melissa Jenco, News Content Editor

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Monthly poison center calls for children exposed to e-cigarettes and liquid nicotine spiked 1,500% in just over three years, according to a new study. The incidents also were more likely to result in serious health effects than exposure to cigarettes.

“That is a remarkable increase and that is an epidemic by any definition,” said Gary Smith, M.D., Dr.P.H., FAAP, an author of the study and member of the AAP Council on Injury, Violence and Poison Prevention. “And I think it really is ... especially alarming knowing that we’ve known for years that liquid nicotine is a highly toxic substance that in very small doses can cause serious medical consequences among children.”

The findings are published in the study “Pediatric Exposure to E-Cigarettes, Nicotine, and Tobacco Products in the United States” (Kamboj A, et al. *Pediatrics*. May 9, 2016, <http://dx.doi.org/10.1542/peds.2016-0041>), in which researchers analyzed National Poison Data System information on exposures in children under the age of 6.

Liquid nicotine comes in a variety of flavors and often does not have child-resistant packaging.

From January 2012 through April 2015, there were 29,141 calls for nicotine or tobacco product exposure, most of which involved ingestion. Of the exposures, 60.1% were for cigarettes, 14.2% were for e-cigarettes and 16.4% were for other tobacco products like chewing tobacco.

Total monthly nicotine and tobacco exposures rose 73.2% over the study period. E-cigarettes in particular rose to 223 monthly exposures up from 14, an increase of 1,493%.



About 27.5% of the children exposed to nicotine or tobacco products experienced clinical effects, most commonly vomiting. However, those exposed to e-cigarettes were 5.2 times more likely to be treated at a health care facility than those exposed to cigarettes. They also were 2.6 times more likely to have a severe outcome. One child exposed to liquid nicotine died.

“I think it just underscores the toxicity of these products,” said Dr. Smith, director of the Center for Injury Research and Policy at Nationwide Children's Hospital.

Nearly 80% of exposures involved children under age 2, which the authors attributed to their natural curiosity.

“(E-cigarette liquids) come currently in refill containers that are not child resistant,” Dr. Smith said. “They include flavors and labeling that attract children.”

The Food and Drug Administration announced Thursday it would [begin to regulate e-cigarettes](#) and set the national purchasing age at 18, although it did not immediately address child-resistant packaging or warnings about liquid nicotine exposure. However, the AAP-backed [Child Nicotine Poisoning Prevention Act](#) that requires liquid nicotine containers to be sold in child-resistant packaging goes into effect in July.

Dr. Smith applauded the Academy's advocacy for FDA regulations and the new packaging law and encouraged pediatricians to continue pushing for more safety measures.

"We need to get these products out of the hands of children because they are going to continue to have these really serious poisonings until we do so," he said.

He also called on pediatricians to educate parents about the dangers of e-cigarette products.

"We've been recommending strongly that parents consider these and treat these like any other poison in their homes," he said. "They should be kept up, away and out of sight, preferably in a locked cabinet."

Resources

- [To report an e-cigarette exposure to a poison center, call 1-800-222-1222.](#)
- [AAP policy "Electronic Nicotine Delivery Systems"](#)
- [AAP Julius B. Richmond Center of Excellence website](#)
- [AAP News story "AAP policy cites harms of e-cigarettes; urges screening"](#)
- [AAP News Parent Plus article "Liquid nicotine used in e-cigarettes can kill children"](#)

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