

Sweet, Small, and Dangerous: Nicotine Pouch Poisonings in Children

While most nicotine-containing products have decreased in number of accidental exposures, nicotine pouch exposures are on the rise. Between April 2021 to March 2025, nicotine pouch exposures have increased drastically across U.S. Poison Centers.¹ Approximately 72% of nicotine pouch cases occur in ages <5 years old, mostly occurring at home.¹ These small, microfiber packets contain a powder made of nicotine with a variety of flavorings, such as mint, cinnamon, citrus, or coffee.² The packaging, often bright and colorful, may also be tempting for children. The nicotine content in the pouches can pose serious health risks for any unintentional ingestion, especially in younger children due to low threshold for toxicity and access.

Compared to other nicotine sources, pouches are more discrete as they are easily disposable and do not require spitting. The U.S. Food and Drug Administration (FDA) has authorized 20 different nicotine pouches for use. The pouch is placed between the lips and the gums, where the nicotine gets absorbed. The amount of nicotine varies per pouch, but it often contains a high dosage (up to 20 mg currently on the market) which can be extremely addictive. "Super pouch" products with nicotine doses ranging from 30-130 mg are being manufactured outside of the United States.² It is illegal under federal law to purchase any tobacco product under the age of 21, thus children and adolescents should not be granted access.

Nicotine pouches generally achieve their peak concentrations about 20-65 minutes after exposure.³ The higher the pouch dose, the higher the peak concentration and total amount of potentially liberated nicotine.³ This exposure may occur more slowly due to the delayed absorption from the buccal mucosa into the bloodstream. Studies found that flavored pouch products lead to a higher concentration compared to unflavored products.³

Nicotinic acetylcholine receptors are found throughout the body, most notably in the autonomic and somatic nervous system. When receiving too much nicotine, stimulatory effects are followed by receptor blockade with parasympathetic and neuromuscular-blocking. Toxicity in pediatric patients can develop within four hours, and be seen at doses as low as 1 mg with fatal ingestions at doses of 2-10 mg/kg of body weight. Nicotine toxicity can present with stomach pain, nausea, vomiting, pale skin, agitation, sweating, rapid heart rate, confusion, tremors and develop more serious symptoms of trouble breathing, loss of consciousness, hemodynamic instability, paralysis and seizures.

To prevent accidental ingestions in pediatric patients, it is vital that nicotine pouch containers are stored up, away, and out of sight, preferably in a locked cabinet, box, or bag. Used pouches should be disposed of directly into a trash can and not left on the floor or ground as residual nicotine remains in the pouches even after initial use. Consider products that are sold in a child-resistant packaging, specifically those authorized by the FDA. Avoid using these nicotine pouches in front of children. Treatment is mainly supportive care, ensuring patients maintain an open airway, breathe properly, and have adequate circulation. Hypotension can be treated with IV fluids and vasopressors if needed. Seizures and agitation can be managed with IV benzodiazepines. If there are any significant parasympathetic stimulation (bronchorrhea, bradycardia, bronchospasms—known as the killer B's), it is recommended to administer atropine.

If you have a pediatric patient exposed to nicotine, or a suspected exposure, call the Maryland Poison Center at 1-800-222-1222.



Did you know?

The common street names for nicotine pouches include:

- "lip pillow"
- "upper deckies"
- "nic-pods"
- "lip rocket"
- "Zynner"

References:

1. Pouches Can Be Dangerous to Kids if They Use, Touch, Chew on, Eat Them. U.S. Food and Drug Administration. Published 2025.
2. CDC. Nicotine Pouches. Smoking and Tobacco Use. Published 2024.
3. Olivas M, Hays HL, Kistangari S, et al. Nicotine Ingestions Among Young Children: 2010-2023. *Pediatrics*. 2025;156(2):e2024070522. doi:10.1542/peds.2024-070522
4. Heshmati J, Bates EL, Shahen S, et al. Nicotine pouch pharmacokinetics compared to smoked tobacco: A systematic review and meta-analysis. *Drug Alcohol Depend Rep*. 2025;17:100389. Published 2025 Oct 22. doi:10.1016/j.dadr.2025.100389

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