



To: ALL HEALTH CARE PROFESSIONALS
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Subject: Hazards of nicotine ingestion
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- Chronic tobacco use is associated with multiple serious health effects, but ingestion of nicotine-containing products can also cause acute toxicity.
- The human LD₅₀ for nicotine is thought to be around 1 mg/kg. A single cigarette contains between 15 and 30 mg nicotine. Nicotine-based insecticides have been used in the past to commit suicide.
- Children who ingest ≥ 1 cigarette or ≥ 3 cigarette butts may develop nicotine toxicity.
- Signs of toxicity include vomiting, hypersalivation, agitation, lethargy, tachy- or bradycardia, and tremors.
 - Coma, seizures, and muscle weakness can be seen with severe toxicity.
- Treatment of nicotine toxicity is primarily supportive care that includes monitoring of airway status, IV fluids, antiemetics, and benzodiazepines for tremor or seizures.
 - Activated charcoal may be helpful within 1-2 hours of ingestion but because of vomiting it is often not tolerated.
- Smokeless tobacco products may be more appealing to small children due to added flavoring and a candy-like appearance
- Electronic cigarettes (e-cigs) are battery-powered devices used to aerosolize nicotine solutions for inhalation.
 - The packaging, aroma, and flavorings added to e-cig refill liquids may make them attractive to small children.
 - The nicotine content of most refill liquids ranges from 6 to 24 mg/mL (some may contain up to 85 mg/mL), and products may not be supplied in child-resistant containers.
- Parents should be warned that all nicotine containing products, especially refill solutions for e-cigarettes and other smokeless tobacco products, should be secured so as not to be accessible by children.

References

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Goldfrank's Toxicologic Emergencies, 9th edition, 2011, pages 1185-90.
Kirschner RI *et al.* Nicotine content of liquid for electronic cigarettes. *Clin Toxicol* 2013; 51: 684 (abstract 240).

Our trained staff of nurse/physician assistant specialists in poison information and physician toxicologists is available 24 hours a day to answer your questions.



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