



To: Physicians, Nurses, and Other Health Care Providers in the Federated States of Micronesia
From: Ron Kirschner, MD
Medical Director, Nebraska Regional Poison Center
Subject: Hazards of nicotine ingestion
Date: 12/30/13

- 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.
- 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.
- 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.

References

Connolly GN *et al.* Unintentional child poisonings through ingestion of conventional and novel tobacco products.

Pediatrics 2010; 125: 96.

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 specialists in poison information and physician toxicologists is available 24 hours a day to answer your questions. In the Federated States of Micronesia, health care professionals and the public can reach the Poison Center by calling 288, wait for an automated operator, then 888-222-4516.