



To: Physicians, Nurses, and Other Health Care Providers in American Samoa  
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 LD<sub>50</sub> 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*, 9<sup>th</sup> edition, 2011, pages 1185-90.

Kirschner RI *et al.* Nicotine content of liquid for electronic cigarettes. *Clin Toxicol* 2013; 51: 684 (abstract 240).

- **In American Samoa, health care professionals and the public can reach the Poison Center by calling 1-800-222-1222.**

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