Ford: Clinical Toxicology, 1st ed.

Chapter 123 – Nicotine Poisoning

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Essentials

- Nausea and vomiting are common in mild cases.
- Toxicity is usually self-limited.
- Severe cases show cholinergic symptoms: diarrhea, salivation, bronchorrhea, bradycardia, fasciculations.
- Seizures, respiratory depression, dysrhythmias, and hypotension are rare, but occur with severe toxicity.

INTRODUCTION

Nicotine is a bitter-tasting, mildly alkaline, volatile liquid alkaloid. It is colorless but turns brown upon exposure to air. Although most nicotine in the United States comes from the commonly cultivated tobacco *Nicotiana tabacum*, it can also be isolated from other *Nicotiana* plant species including *N. rustica* (grown as "Turkish tobacco" containing up to 18 per cent nicotine), as well as many *Solanaceae* species and a few other plants. *Nicotiana glauca* (tree tobacco) is a weed containing anabasine, an alkaloid that is pharmacologically similar to nicotine. [25] Nicotine is the principal active alkaloid in tobacco; however, there are several structurally similar biologically active alkaloids also found in various portions of the plant.

The primary exposure to nicotine is from tobacco products, including cigarettes, snuff, and chewing tobacco. Nicotine is also contained in products designed to aid in smoking cessation, including nicotine polacrilex "gum" (nicotine bound to an ion exchange resin), transdermal delivery systems ("patches"), and a nasal spray. Widely used as an insecticide in the past, today nicotine is found in only a few products designed for home use. Nicotine was once used as an animal tranquilizer. Tobacco, slurried in water and given as an enema, has been used as a remedy for pinworms. [12] [28] [39] Poultices of tobacco have also been used to treat a variety of skin conditions. The nicotine content of common products is found in Table 123–1 .

Table 123-1 -- Nicotine Content of Common Sources

Source	Amount
Cigarette	15–30 mg
Smoked	0.1–2 mg
Cigarette butt	6–7 mg
Cigar	15–40 mg
Smoked	0.2–1 mg
Chewing tobacco	2.5–8 mg/g (dry weight)
Snuff	12.4–15.6 mg/g (dry weight)
Tobacco leaf	10–60 mg/g (dry weight)
Polacrilex gum	2–4 mg/piece
Transdermal delivery system	8.3–114 mg
Delivered	5–21 mg/24 h (0.3–0.9 mg/h)
Nasal spray	0.5 mg/spray

Green tobacco sickness is an occupational illness common among workers who cultivate, harvest, and handle tobacco. [13] [21] Although frequently misdiagnosed as insecticide poisoning or "the flu," it is caused by dermal absorption of nicotine. It has been described in adults and older children.

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About This Book

"A thorough collection of the current answers." -- JAMA

Clinical Toxicology is a carefully formulated text that meets the needs of a wide range of health care providers, teachers, and scientists. Its editors are experienced and expert in the domain of toxicology. Great care has been taken to consistently arrange and clearly describe the information. The first 15 chapters are devoted to general management and cover a breadth of topics. There are 13 "approach to" chapters, 101 "toxins in depth" chapters, and six "addenda" chapters that include easy-to-use resources.