

## Promethazine Abuse: A Growing Problem?

Promethazine is used therapeutically as an antiemetic, an adjunct for procedural sedation, and for allergic reactions. Pharmacologic effects are primarily H1 receptor antagonism; it also interacts with muscarinic, dopaminergic, serotonin and alpha adrenergic receptors. It is formulated alone or in combination with other drugs such as codeine, dextromethorphan and/or expectorants.

Promethazine-containing products are abused for their sedative effects and to achieve a state of delirium. Used with opioids, promethazine augments opioid-induced euphoria and allows for a lower dose of opioid. Promethazine prevents opioid-induced nausea and helps alleviate some withdrawal symptoms. There are reports of non-medical use (abuse/misuse) of promethazine in online forums such as Erowid Experience Vaults. "Sizzurp or purple drank", a mixture of promethazine/codeine with a flavored soda such as Sprite and Jolly Rancher candy, produces what has been described as "a new mood-boosting drink designed to help you unwind after a stressful day" ([www.legalleansizzurp.com](http://www.legalleansizzurp.com)).

How extensive is promethazine abuse and is it escalating? There are reports of promethazine detection in urine samples of drug abusers and on forensic analysis of opioid fatalities; however, medical information is limited. Researchers at the Maryland Poison Center performed a study of non-medical use (abuse/misuse) of promethazine in the U.S. using national poison center data over an 11-year period (*J Addict Med* 2015;9:233-7). Of 354 cases, 95 were promethazine alone (PA) and 259 were promethazine formulated with other drugs (PC). Teens and young adults in their 20s accounted for approximately 70% of cases. Over the period of the study, the annual rate of promethazine abuse/misuse per 100,000 U.S. population doubled, largely attributed to tripling of the PC rate. Cases involving PC were more likely to be symptomatic (e.g. drowsiness, tachycardia, agitation, confusion). While one-third of PA cases were managed outside a health care facility, exposures to PC were more likely to require medical treatment, primarily in the emergency department. Overall, under 20% of patients required medical admission. Since this study excluded cases involving substances other than PA or PC, we did not evaluate how often promethazine abuse occurs with other drugs such as opioids. Thus, the actual number of cases involving non-medical use of promethazine is likely much higher.

The Maryland Board of Pharmacy issued an alert in December 2016 about recent reports of fraudulent prescriptions called in for promethazine with codeine. Baltimore County police issued an alert regarding 'counter jumping' in pharmacies in Baltimore County, Southern Maryland and Northern Virginia to obtain controlled dangerous substances. Promethazine with codeine was identified as the drug targeted most frequently.

Wendy Klein-Schwartz, Pharm.D., MPH, FAACT  
Professor Emeritus  
University of Maryland School of Pharmacy



### Did you know?

**Promethazine is sometimes in adulterated drugs sold on the street.**

In March 2016, an outbreak of opioid toxicity occurred in California due to fentanyl-adulterated tablets sold on the streets as hydrocodone-acetaminophen. Promethazine was positive on urine drug screens from 15 of 17 patients and in all 6 tablets available for analysis. The authors commented that while promethazine may have contributed to euphoria, it probably played a minimal role in prolonged hospitalizations or fatalities. (*Acad Emerg Med* 2017;24:106-113)



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