

## Levamisole—a Cocaine Contaminant

Illicit drugs are often contaminated with a variety of other drugs and chemicals. Levamisole, a veterinary anthelmintic (livestock dewormer), has been increasingly reported as a contaminant in cocaine powder and crack cocaine. If you have seen any cocaine-poisoned patients recently, you likely have seen a levamisole-poisoned patient as well. The Drug Enforcement Administration reported widespread contamination in July 2009 when 70% of cocaine seized at U.S. borders tested positive for levamisole. Urinalysis of Washington D.C. arrestees in late 2009 found that 45% of specimens that were positive for cocaine were also positive for levamisole. It is not clear why levamisole is being added, but presumably to dilute the product. The average concentration of levamisole in cocaine samples is 10%. Levamisole has also been detected in a small number of samples of heroin but only in trace amounts.

In recent months, levamisole has been implicated as the cause of serious toxic effects in cocaine users. Levamisole suppresses the production of white blood cells, producing neutropenia and agranulocytosis, and as a result, serious infections and death. In addition, there have been case reports of vasculitis and skin necrosis linked to levamisole.

Known users of cocaine should be warned about the possibility of the drug being contaminated with levamisole and the life-threatening effects associated with it. Cocaine users should be advised to seek immediate medical attention if they develop signs and symptoms of infections (high fever, weakness, swollen glands, shortness of breath, painful sores or abscesses in the mouth or throat or on the skin) that worsen quickly or don't resolve. Symptoms can occur from 1 day to weeks after an exposure. Health care professionals should suspect levamisole in patients who present with unexplained agranulocytosis (with or without symptoms of infection), vasculitis, and/or skin necrosis. Such patients should be questioned about the use of cocaine and tested for the presence of cocaine. Treatment consists of stopping the exposure, supportive care and antibiotics. Neutropenia usually resolves within 5-10 days of the last levamisole exposure. Routine toxicology testing will not detect levamisole; however, facilities such as NMS Labs in Pennsylvania ([www.nmslabs.com](http://www.nmslabs.com)) will assay for levamisole. It's important to note that levamisole is unlikely to be detected beyond 48 hours after the last exposure. Report any suspected cases to the poison center.

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### ***DID YOU KNOW THAT... poison centers have received more than 600 calls about K2 this year?***

K2 (also known as Spice, Zohai, and Genie) is a synthetic marijuana marketed as incense or spice. It is currently legal to buy and use K2 in Maryland and at least 40 other states in the U.S. There have been more than 600 K2-related calls to U.S. poison centers so far in 2010. Many users have experienced toxic effects that are unlike what is expected with marijuana, effects such as tachycardia, hypertension, chest pain, anxiety, confusion, and tremors. It's still unclear whether the toxic effects are due to an unknown ingredient or if they are dose-related.



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