

Xylazine

This information sheet is intended for healthcare providers in British Columbia

What is xylazine?

Xylazine is a non-opioid used as a sedative, anesthetic, muscle relaxant and analgesic for animals. It is a strong synthetic alpha2-adrenergic agonist, synthesized in 1962 as an analgesic, hypnotic and anesthetic. It was not approved for human use due to severe CNS depressant effects. What is known:

- A colorless liquid in veterinary formulations, it is described as a crystalline substance that tastes bitter and is easily soluble in water. Information from local drug checking sites have reported **varying appearance** when mixed with other substances.
- Intravenous, intramuscular, subcutaneous, oral and inhalation use has been reported
- One of xylazine's metabolites, 2,6-xylidine, has been classified as potentially genotoxic and carcinogenic to humans based upon animal studies.

Why should you be concerned?

Xylazine's presence in the drug supply can change the clinical presentation and decisions about opioid overdose management. When mixed with other depressants (e.g., alcohol, benzodiazepines, fentanyl), the risk of overdose greatly increases.

Chronic use may cause skin abscesses and soft tissue infections. In Puerto Rico, people using xylazine had a higher prevalence of skin ulcers compared to those who did not use xylazine (38.5% vs. 6.8%). Reports from Ohio note necrotic tissue damage and severe abscesses after injecting and/or snorting xylazine, that appears to be independent of injection sites.

How much xylazine is considered dangerous?

It is not clear. Fatal cases of xylazine poisoning have reported blood concentrations ranging from a trace amount to 16,000 ng/mL, compared to non-fatal toxic concentrations of 30 to 4,600 ng/mL.

Why is it turning up in street drugs?

Most likely to increase bulk and enhance the effects of other drugs. The Canadian Centre on Substance Use and Addiction lists xylazine as a common cutting agent found in substances thought to be in opioids/down in BC. It may also be used as a drug of choice.

What is the prevalence of xylazine in BC's drug supply?

Xylazine may be present in low levels that may not meet the 5% threshold needed to be detected by Fourier Transform Infrared spectroscopy currently used at drug checking sites in BC.

Local and national findings:

- From June 1 to November 30 in 2018: 1714 drug checks were completed at 2 supervised consumption sites in Vancouver and Surrey. Of the 83 samples sent for confirmatory testing at the BC Provincial Toxicology Centre, 4 (4.8%) tested positive for fentanyl and xylazine.
- From January 2019 to August 2021, 31 samples tested positive for xylazine across BC drug checking sites. Of these, 23 also contained fentanyl
- In August 2021, 3 of 482 opioid samples tested positive for xylazine across BC drug checking sites
- From November 2018 to September 2021, xylazine was detected in 6 samples from 3 sites in Victoria, compared to 5 in 2020.
- Canada's Drug Analysis Service reports an increasing trend in Canada, with around 16 samples testing positive for xylazine per month in 2019 and 2020, and 23 per month in 2021 (Jan to July). Most of these samples contained opioids, with some benzodiazepines
- From September 12, 2020 to September 10, 2021, Toronto's Drug Checking Service found 11 of 424 (3%) expected fentanyl samples also tested positive for xylazine.

Less than 2%
of opioids in BC
likely contains
xylazine

For monthly
drug checking reports
and the
DrugSense Dashboard, see
<https://drugcheckingbc.ca/>



In the US from January to December 2019, xylazine was reported in less than 2% of 45,676 overdose deaths reported in the State Unintentional Drug Overdose Reporting System (SUDORS). From 2010-2015 in Philadelphia, xylazine was detected in 2% of fatal heroin and fentanyl-related overdoses. This jumped to 31% in 2019.

Presentation and management of xylazine intoxication

Xylazine intoxication presents similarly to opioid overdose. Xylazine can potentiate the effects of other depressants, such as fentanyl and heroin. Side effects may take approximately 30 minutes to appear following injection use, and 2 hours following ingestion, although these are based on a limited number of case reports. Lengthy blackout periods, coma and deaths have been reported.

Chronic xylazine use is also likely to contribute to the presence of **wide-spread skin abscesses with possible infection**. Consider the presence of xylazine if wounds are slow to heal.

Follow agency protocol and give naloxone if opioid overdose is suspected.

Heroin or fentanyl is likely to be present as well.

Major clinical findings



- Hypotension
- Bradycardia
- Drowsy, sedated
- Respiratory depression or arrest
- Hyperglycemia
- Cardiac arrhythmias
- Miosis
- Hyporeflexia
- CNS depression

Supportive care

- Consider:
Avoid CNS depressants
Oxygen
IV fluids
IV atropine
Ventilator assistance, possible intubation
IV insulin
ECG monitoring
Replacement of K and Mg
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Other signs and symptoms include dry mouth and enuresis. Clinical findings have been reported to last anywhere from **8 to 72 hours**. Delayed bradycardia and hypotension have been reported 1-2 days after initial use of xylazine. Regular wound care may be required in the presence of lesions.

Responding to suspect opioid/xylazine overdose

Because of possible severe cardiac and CNS reactions to xylazine toxicity, seeking emergency care is critical if xylazine toxicity is suspected. Extended hospital stays may be indicated, given the potential for delayed side effects. It may be impossible to distinguish between the presence of benzodiazepines, other depressants, and xylazine, based upon clinical presentation alone.

Always place the person in the recovery position if you have to leave them alone, as increasing doses of naloxone can lead to vomiting. See the [Toward the Heart website](#) for information sheets on overdose response, etizolam and benzodiazepines.

Engage into comprehensive care to discuss possible prescription alternatives, other treatment options as appropriate. Recommend the [Lifeguard](#) and [Be Brave](#) apps, a different drug supply, and drug-checking services:

- For current information and drug checking locations, see the [Toward the Heart](#) and [BCCSU Drug Checking BC](#) websites.
- For testing by mail or in person: [Getyourdrugstested.com](#)

Encourage to use with a buddy or at an overdose prevention site. Use the [Toward the Heart site finder tool](#) to help locate the nearest overdose prevention and take home naloxone distribution sites.

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References

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