



NC DEPARTMENT OF  
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May 12, 2023

To: North Carolina Clinicians  
From: Kimberly McDonald MD, MPH, Section Chief, Chronic Disease and Injury  
Re: Xylazine Exposure Guidance

On November 8, 2022, the FDA posted a [communication to health care providers](#) about the risks to patients who may be exposed to xylazine. On February 28, 2023, the [FDA took action](#) to prevent xylazine importation into the U.S. for non-legitimate uses. This memo is intended to provide health care professionals with information regarding health impacts and management of patients exposed to xylazine through illicit drug use.

### **Background**

In both North Carolina and nationally, xylazine is increasingly detected in the illicit drug supply and in drug overdoses. While the full national scope of overdose deaths involving xylazine is unknown, research using overdose decedent toxicology reports shows xylazine-involved overdose deaths rose nearly 20-fold between 2015 and 2020 in all major US regions where xylazine testing was conducted.

Xylazine was first introduced into the NC drug supply nearly two years ago and has become highly prevalent in the illicit opioid supply. In a February 2023 report from UNC's Street Drug Analysis Lab, GCMS testing of street-acquired drug samples from 30 NC counties confirmed presence of xylazine in approximately 27% of those samples (153/574). Xylazine has been found primarily in the illicit opioid supply, specifically in combination with heroin and/or fentanyl. Of concern, is that most consumers are not aware that xylazine is present in the fentanyl supply, nor the danger it poses to their health.

Xylazine is a veterinary sedative with no approved human use. As such, it is not a scheduled/controlled substance. It is sold as a liquid formulation but can be salted or dried into powdered (white or brown) form and easily mixed with powders or pressed into pills, making it difficult to identify by appearance alone. Xylazine can be used by mouth but is mainly insufflated (smoked/snorted) or injected (IM, SQ, IV). It is structurally analogous to clonidine and tizanidine and has similar clinical effects. Stimulation of alpha-2 adrenergic receptors in the CNS can cause decreased pain perception, drowsiness, muscle relaxation, bradypnea, bradycardia, hypotension, and glucose abnormalities. Xylazine has a rapid onset (1-2 min) and extended duration of effect (4-6 hours) depending on route of administration and combination with other drugs. Potential intensification of sedative and depressive effects can complicate overdose presentation and treatment.

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**CHRONIC DISEASE AND INJURY SECTION**

LOCATION: 5505 Six Forks Road Raleigh, NC 27609  
MAILING ADDRESS: 1915 Mail Service Center, Raleigh, NC 27699-1922  
www.ncdhhs.gov • TEL: 919-707-5201 • FAX: 919-870-4803

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## **Xylazine Diagnostic Testing Challenges**

- Xylazine is not included in routine immunoassay toxicology screens and therefore may be under-detected. Additional analytical techniques are required to detect xylazine in biological specimens such as blood and urine.
- Even with appropriate testing, xylazine may not be detected due to a short half-life of 23-50 minutes with rapid elimination from the body.
- Xylazine test strips have been developed, but their true accuracy is not yet known.
- UNC's Street Drug Analysis Lab assists with testing and identification of specific substances in the NC drug supply by testing drug samples submitted by harm reduction partners. Data is available [online](#).

## **Xylazine associated Skin Wounds**

- Health care professionals who see patients with severe, necrotic skin ulcerations should consider repeated xylazine exposure as part of the differential diagnosis.
- Xylazine's vasoconstrictive properties may cause skin and soft tissue wounds, including ulcerations. These wounds are chronic, difficult to treat and often require multiple provider visits, which can be a barrier for those affected.
- These wounds tend to present atypically on legs, arms, fingers and toes, most often distal to the drug administration site. They also can quickly become necrotic and expansive compared to typical injection-related skin and soft tissue infections. Of note, many of these novel wounds are not infectious and appear similar to chemical burns.
- We recommend reviewing this brief [Xylazine Wound Care Guide](#) for specific management recommendations.

## **Xylazine-Involved Overdose**

- Assume presence of more than one substance.
- Opioid overdose involving xylazine presents similarly to uncomplicated opioid overdose. Xylazine can potentiate the effects of other depressants, such as fentanyl and heroin.
- Supportive care is key
  - Give naloxone
    - If O2 is at a safe level and breathing unlabored do not administer more naloxone (to avoid precipitous withdrawal and potential vomiting/aspiration).
    - If respiratory status stable, rouse with physical stimuli
  - Xylazine intoxication can cause profound mental status depression leading to airway compromise and potential suffocation, therefore airway monitoring and support is critical.
  - Blood pressure should be monitored and managed if it becomes unstable.
  - Evaluate and manage respiratory status related to concomitant presence of fentanyl or other opioids.
- Notes about reversal
  - There is not an approved xylazine reversal agent for use in humans.
  - Naloxone should be administered for respiratory depression due to the frequent combination of xylazine with fentanyl.
  - Be aware that the person may breathe normally after receiving naloxone, but still be sedated from the xylazine and more naloxone may not be needed.
  - Patients should be educated about use of naloxone for overdose reversal when xylazine is involved to avoid incorrectly attributing atypical incidents to "naloxone-resistant fentanyl" or "naloxone-resistant opioids."

### **Xylazine Withdrawal**

- Assume need for xylazine withdrawal management.
- Xylazine withdrawal is not a well-defined syndrome. It includes anxiety, irritability, and restlessness. Severe hypertension is also possible.
- Clinicians must be prepared to manage xylazine withdrawal symptoms simultaneously with opioid withdrawal.
- Opioid withdrawal should be treated early, with liberal use of medications for opioid use disorder or opioid pain management to mitigate pain and discomfort that could exacerbate xylazine withdrawal or lead to discharges against medical advice.

### **Xylazine Associated Adverse Event Reporting**

Health care professionals and patients are encouraged to report adverse events from possible xylazine exposure. This can be done via any one of the following:

- Your [County Local Health Department](#)
- [NC Poison Control](#) website or call **Fast Help** 1-800-222-1222. Toxicologists are available 24/7
- American Association of Poison Control Centers 1-800-222-1222
- Online FDA [MedWatch Adverse Event reporting](#)

### **Xylazine Patient Education:**

Consider sharing this [Xylazine Quick Guide](#) with patients who use drugs or are involved with persons at risk. It contains basic information on xylazine along with important harm reduction messages and recommendations.

### **Additional Resources**

- [CDC Stop Overdose](#)
- [National Harm Reduction Coalition](#)
- [FDA Xylazine health alert](#)
- NASTAD [Wound Care & Medical Triage for People Who Use Drugs](#)
- [NASTAD Webinar: Beyond the Alerts: Practical Guidance for Responding to Xylazine](#)
- [NC Harm Reduction Coalition](#)
- [NC Survivors Union](#)
- [NC Syringe Exchange Sites](#)
- [UNC Street Drug Analysis Lab](#)
- [NY DPH Health alert](#)