

# Xylazine

## Clinical Management and Harm Reduction Strategies for Patients



Xylazine, also called “tranq” or “tranq dope,” is a nonopioid sedative and tranquilizer. Xylazine has been increasingly found in the illegal drug supply in the United States and has been involved in overdose deaths.<sup>1</sup> Although not a controlled substance, xylazine is not approved for use in humans and can be life threatening, especially when combined with opioids like fentanyl.<sup>2</sup> The White House’s Office of National Drug Control Policy has declared fentanyl mixed with xylazine to be an emerging threat.<sup>3</sup>

### Adverse Effects

Xylazine-involved overdose symptoms include the following:

- Central nervous system (CNS) depression
- Respiratory depression
- Bradycardia
- Hypotension
- Constricted pupils
- Hyperglycemia

### Exposure

- Xylazine is often mixed with illegal drugs like cocaine, heroin, and fentanyl, either to enhance effects or increase the drugs’ weight (which increases their illegal value).<sup>4,5</sup>
- People who use illegal drugs may not be aware that their drugs contain xylazine.

### Growing Role in Overdose Deaths

- In drugs tested in labs, the presence of xylazine increased in every region of the United States from 2020-2021, with the most significant increase in the South.<sup>6</sup>
- In a recent CDC study spanning 20 states and Washington D.C., the monthly percentage of deaths involving illegally made fentanyl (IMF) with xylazine increased from 3% in January 2019 to 11% in June 2022.
- Additionally, from January 2021 through June 2022, xylazine was found in a higher percentage of IMF-involved deaths in the Northeastern U.S. than in other regions.<sup>7</sup>

## FACT SHEET

### Actions for Overdose Involving Xylazine

- There is no approved reversal agent to counteract the effects of xylazine.
- Principal treatment considerations for anyone suspected to be experiencing a xylazine-involved overdose include the following:
  - » Give naloxone to any person who shows signs of an opioid overdose or when you suspect an opioid overdose.
  - » Provide supportive and symptomatic care. That may include respiratory support, such as ensuring a protected airway and giving supplemental oxygen as needed, and treating low blood pressure with fluids and medications if needed.
  - » Consult a medical toxicologist or an addiction specialist. Call your local poison center, or contact [Poison Control](https://www.poisontreatment.com) (1-800-222-1222) for further advice on specific management of your situation.

It is important to be on the lookout for skin wounds associated with frequent xylazine use. Xylazine-associated skin wounds can pose unique management challenges and may need specialized wound care. People who use xylazine may develop physiological dependence and have symptoms consistent with a xylazine-related substance use disorder. This may include severe withdrawal symptoms (e.g., irritability, anxiety, and dysphoria) after abrupt discontinuation.<sup>8</sup>

### Actions Clinicians Can Take Post Overdose or if Patient Risk Is Identified

- **Emphasize administering naloxone**, noting that the effects of xylazine may continue after naloxone administration.
- **Initiate Patient Conversations:** Talk to patients about the changing illegal drug supply (e.g., adulteration with fentanyl or xylazine), risks for overdose, and risks associated with exposure to highly potent opioids like illegally made fentanyl and fentanyl mixed with xylazine. Help patients understand ways that they can reduce their risk such as engaging in treatment for substance use disorders and harm reduction strategies.
- **Encourage Patients to Call 911.** Tell patients to call 911 if they think they or someone they know are experiencing an overdose.
- **Facilitate Treatment Referrals.** Connect patients with substance use disorder treatment, medical care for skin wounds and recovery support services.
- **Implement Post-Overdose Response Protocols.** Put post-overdose protocols into action in partnership with public health, treatment providers, and community organizations.

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## Harm Reduction Strategies for Patients

Clinicians can play a vital role in educating individuals at risk of xylazine and opioid overdose about harm reduction strategies. You can share the following practices with patients:

- **Never Use Alone.** Encourage those who use drugs to always have a trusted contact who can help in emergencies. A supportive person can administer naloxone and/or call 911 if necessary.
- **Carry Naloxone and Learn How to Use It.** Stress the importance of carrying and knowing how to use naloxone. Naloxone can reverse the effects of opioids, which may be mixed with Xylazine. Naloxone will not cause harm if administered when there are no opioids present.
- **Beware of Drugs with Unknown Ingredients.** Advise patients that illegal drugs may contain xylazine or other substances. Advise patients that there are counterfeit pills that closely resemble prescription medication.<sup>9</sup>
- **Seek Immediate Wound Care.** Explain how important it is to get prompt medical attention for skin wounds to prevent infections and complications. Untreated wounds can lead to amputation or become life threatening.<sup>10</sup> When treated early, wounds can usually be managed with [basic wound care techniques](#).
- **Reduce Injection-related Risks.** According to the [National Harm Reduction Coalition](#), the risk of infection can be reduced by using sterile injection equipment, rotating injection sites, allowing skin veins time to heal before another use, and taking drugs in other ways besides injection.
- **Test Drugs Before Using.** Inform patients about commercially available test strips to detect xylazine in a sample of drugs. Fentanyl test strips can be used to test drugs for fentanyl.

### Want to know more? Check out the following links for more information on related topics.

- [What You Should Know About Xylazine \(CDC\)](#)
- [Biden-Harris Administration Designates Fentanyl Combined with Xylazine as an Emerging Threat to the United States \(White House\)](#)
- [FACT SHEET: In Continued Fight Against Overdose Epidemic, the White House Releases National Response Plan to Address the Emerging Threat of Fentanyl Combined with Xylazine \(White House\)](#)
- [Lifesaving Naloxone \(CDC\)](#)
- [Fentanyl Test Strips: A Harm Reduction Strategy \(CDC\)](#)
- [Stop Overdose \(CDC\)](#)



# FACT SHEET

## References

- <sup>1</sup> Kariisa M, Patel P, Smith H, Bitting J. Notes from the field: xylazine detection and involvement in drug overdose deaths—United States, 2019. *Morbidity and Mortality Weekly Report*. 2021;70(37):1300.
- <sup>2</sup> FDA alerts health care professionals of risks to patients exposed to xylazine in illicit drugs November 8, 2022. <https://www.fda.gov/drugs/drug-safety-and-availability/fda-alerts-health-care-professionals-risks-patients-exposed-xylazine-illicit-drugs>
- <sup>3</sup> Biden-Harris Administration Designates Fentanyl Combined with Xylazine as an Emerging Threat to the United States. Whitehouse.gov., from <https://www.whitehouse.gov/ondcp/briefing-room/2023/04/12/biden-harris-administration-designates-fentanyl-combined-with-xylazine-as-an-emerging-threat-to-the-united-states>
- <sup>4</sup> Drug Enforcement Administration. The growing threat of xylazine and its mixture with illicit drugs. 2022. <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- <sup>5</sup> Wong SC, Curtis JA, Wingert WE. Concurrent detection of heroin, fentanyl, and xylazine in seven drug-related deaths reported from the Philadelphia Medical Examiner's Office. *J Forensic Sci*. Mar 2008;53(2):495–8. doi:10.1111/j.1556-4029.2007.00648.x
- <sup>6</sup> Drug Enforcement Administration. The growing threat of xylazine and its mixture with illicit drugs. 2022. <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- <sup>7</sup> Kariisa M, O'Donnell J, Kumar S, Mattson CL, Goldberger BA. Illicitly Manufactured Fentanyl-Involved Overdose Deaths with Detected Xylazine—United States, January 2019–June 2022. *MMWR Morb Mortal Wkly Rep* 2023;72:721–727. DOI: <http://dx.doi.org/10.15585/mmwr.mm7226a4>
- <sup>8</sup> Gupta, R., Holtgrave, D. R., & Ashburn, M. A. (2023). Xylazine—Medical and Public Health Imperatives. *New England Journal of Medicine*. <https://www.nejm.org/doi/full/10.1056/NEJMp230312>
- <sup>9</sup> Palamar JJ, Ciccarone D, Rutherford C, Keyes KM, Carr TH, Cottler LB. Trends in seizures of powders and pills containing illicit fentanyl in the United States, 2018 through 2021. *Drug Alcohol Depend*. 2022 May 1;234:109398. doi: 10.1016/j.drugalcdep.2022.109398. Epub 2022 Mar 31. PMID: 35370014; PMCID: PMC9027012.
- <sup>10</sup> DEA Reports Widespread Threat of Fentanyl Mixed with Xylazine, Public Safety Alert, 2022: <https://www.dea.gov/alert/dea-reports-widespread-threat-fentanyl-mixed-xylazine>