



**Harm Reduction Services  
& Recovery Resources**

# **Xylazine: What Professionals Who Work with People Who Use Drugs Need to Know**

## **What is Xylazine:**

Xylazine is a veterinary animal tranquilizer. It is a non-opioid used as a sedative, anesthetic, muscle relaxant, and analgesic and is used as a “take-down” agent for large animals. It was first synthesized in 1962 by Bayer Pharmaceuticals and, although it was researched for use in humans, trials were terminated due to its severe hypotension and central nervous system (CNS) depressant effects. It has never been approved by the FDA for use in humans.<sup>1</sup>

Xylazine is a strong synthetic alpha2-adrenergic agonist. It was synthesized as an analgesic, hypnotic, and anesthetic.<sup>2</sup> It has chemical properties similar to other drugs like clonidine and may have similar clinical effects.

Xylazine has increasingly been found in the illicit opioid drug supply, frequently mixed with fentanyl.<sup>3</sup> In Georgia we are currently only seeing it in the illicit opioid supply, specifically substances sold as “boy” or “heroin”, and fentanyl. However, mass-spectrometer testing is showing that there is no heroin present, only fentanyl and xylazine (in addition to other non-narcotic additives, fillers or “cut”).

People who use drugs often refer to it as “tranq,” or “tranq dope” (and sometimes “the zombie drug”). We have yet to see xylazine sold by itself in Georgia, only as an additive to illicit opioids, namely fentanyl.

## **Illicit Xylazine Appearance and Route of Administration:**

In the illicit drug supply, it can appear as a white or brown powder. Because it can be mixed into other powders or pressed into pills, it can be difficult to identify based on appearance.

The routes of administration include intravenous, intramuscular, intranasal (snorting), oral (swallowing), and “booty-bumping” or “boofing” (dissolving anally through liquid insertion). Although there is currently no information on vaping or smoking, it does appear that xylazine and fentanyl vaporize at different temperatures. Smoking appears to have inconsistent effects, as the xylazine burns up immediately, while the fentanyl lasts longer. Some people prefer to smoke if they DO NOT want to ingest xylazine. They will intentionally let the first hit burn without inhaling if they are wanting the opioid effects but not the tranquilizer. There is no such option for those who inject.

It has a rapid onset and depending on the dose, route of administration, and the opioid or other drug(s) it is mixed effects how long it lasts.<sup>4</sup>

## **Xylazine Effects:**

Xylazine is a central nervous system (CNS) depressant that can cause drowsiness, amnesia (a feeling of blackout and/or “losing time”), slow breathing, decreased heart rate, and dangerously low blood pressure. At very high doses, or with other CNS depressants, xylazine can cause:

- Loss of physical sensation, feeling disconnected from one’s body, and loss of balance/equilibrium.
- Loss of consciousness (amnesia/blackouts). Even if they appear somewhat conscious, they may be unaware as to what is happening with themselves and what’s going on around them.
- Intense intoxication; increased effects of other drugs, which can complicate overdose presentation and treatment.
- Dry mouth, aka “cottonmouth.”
- Extreme confusion/disorientation, which can result in a lack of awareness of one’s surroundings.
- Abnormal abscesses;
  - that may turn black and take longer to heal than normal, sometimes growing into an infection quickly.
  - can stink and ooze fluids for much longer than other abscesses.
  - although not often, may appear on different parts of the body/extremities (arms and legs) that are not related to an injection site.

Because of its fast onset, short duration of intensity (usually 20 or 30 minutes in its full effect), and that it’s most often cut into opioids (fentanyl), people will often have to “fix” (use) more often and in shorter intervals throughout a day than heroin or fentanyl alone.

## **History and Trends of Xylazine in Illicit Drug Supply:**

Xylazine has long been identified in the street opioid supply of Puerto Rico. In the late 2000s, it emerged in Philadelphia and has recently been found in many other regions. After overtaking the Kensington District of Philadelphia with a massive increase between 2016 and 2021, xylazine quickly became problematic in Ohio, Connecticut, Maryland, Massachusetts, and more recently Texas. These states have all identified a hard and fast increase in overdose deaths where xylazine was present.

While the full national scope of overdose deaths involving xylazine is unknown, research and testing have shown that overdose deaths involving xylazine rose nearly 20-fold between 2015 and 2020 in all major US regions where xylazine testing was being conducted. We are aware that current research nationwide is difficult to conduct as many regions are either unaware of its presence, don’t have the ability to effective testing, or have not yet prioritized the importance of xylazine testing.

The highest xylazine prevalence in autopsies has been observed in Philadelphia (involved in 25.8% of deaths), followed by Maryland (19.3%), and Connecticut (10.2%). Illicitly manufactured fentanyl (IMF) was present in 98.4% of overdose deaths involving xylazine.<sup>5</sup>

In 2021, 91% of samples of purported heroin or fentanyl from Philadelphia also contained xylazine, making it the most common adulterant in the local drug supply.<sup>6</sup>

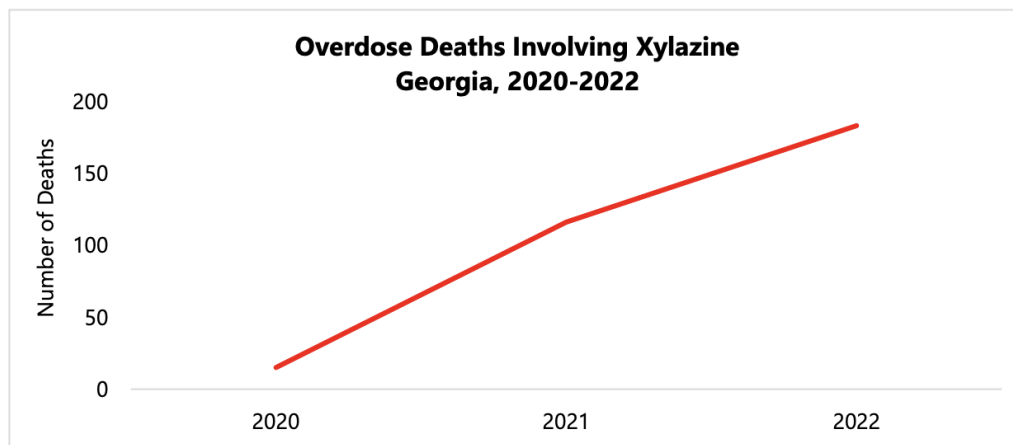
## Overdose Deaths in Georgia Involving Xylazine in Illicit Drug Supply:

Because there is not yet regular testing for xylazine, the only information statewide has been published by the Georgia Department of Public Health on fatal drug overdose (mortality) data.<sup>7</sup>

From 2020 to 2022 in Georgia:

- Deaths involving any drug increased 12%
- Deaths involving xylazine increased **1120%**
- The proportion of overdose deaths involving xylazine increased from 0.8% to **9%**

Drug Overdose Deaths by Drug Type, Georgia, 2020 – 2022							
Drug Type	2020		2021		2022*		% Change 2020-2022
	N	Rate	N	Rate	N	Rate	
Any Drug	1888	17.63	2417	22.38	2115	19.58	12%
Xylazine	15	0.14	116	1.07	183	1.69	1120%



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## Georgia Xylazine Trends:

Earlier this year, 2023, the staff at Access Point of Georgia began noticing some syringe exchange participants displaying, what appeared to be, necrotic skin ulcers and abscesses that were distinctly different from other types of soft-tissue infections associated with IV drug use. We began offering xylazine urine drug screens to participants onsite. We provided xylazine, fentanyl, and benzodiazepine test strips to take with them. We also sent samples to Chicago to be tested on a mass-spectrometer in order to learn more about contaminants, adulterants, and amounts therein.

Between March and June, 11 out of 12 various samples sold as “boy” (heroin) or fentanyl tested positive for xylazine. It is important to note that urine drug screens and test strips are unable to measure amounts, only its presence. Xylazine test strips, much like fentanyl test strips, are new to the market and their efficacy is often questioned and their use is controversial. These test strips (for both xylazine and fentanyl) are more likely to produce a false-positive rather than a false-negative. Mass Spectrometer testing is considered best practice for various forms of testing available to Harm Reductionists and PWUD.

## Why Do People Use Xylazine with Fentanyl:

The easy answer is that people are using it because it's in the illicit opioid supply. Whether they “choose” it or not is irrelevant when they are unable to purchase a safe supply. This was a similar theme when fentanyl

began contaminating the drug supply. Most people are unable to purchase only heroin anymore, no matter where they are regionally. The supply across the nation has changed dramatically, and quickly. In opioids, at first heroin was cut with fentanyl until the “fent” or “fetty,” until it increased to such a degree that now the opioid drug supply is only fentanyl with other adulterants. Now, much of it is fentanyl cut with xylazine. Most of the opioid-dependent people we serve at Access Point of Georgia are unaware of what’s in their supply.

The “high” from fentanyl and xylazine lasts a very short time compared to the effects of heroin and other opioids. Xylazine may be added, at least in part, to add a different effect. However, people who are using fentanyl and/or heroin are NOT intentionally seeking out xylazine. In most cases, locally, people are not aware that xylazine is in the opioids they are buying and using. Most do not know what xylazine is and are genuinely confused when we tell them what is in their supply.

## **Why Should Clinicians be Concerned:**

Use may cause skin and soft tissue wounds, including ulcerations and necrosis. 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%).<sup>8</sup> Reports from Ohio note necrotic tissue damage and severe abscesses after injecting and/or snorting xylazine that appear to be independent of injection sites.<sup>9</sup> This means that, although not often, they may get abscesses on parts of the body where no injection has occurred.

These wounds present atypically, tending to be on legs and arms and appear to worsen more quickly than other skin wounds.

The illicit opioid drug supply in Georgia being contaminated by xylazine is making it incredibly difficult to serve clients and/or treat patients, as Best Practice has yet to be created on a National level. This means that many professionals who work with people who use drugs do not yet have the level of knowledge in order to effectively treat this population.

## **Presentation and Management of Xylazine-Involved Overdose**

Opioid overdose also involving xylazine presents similarly to uncomplicated opioid overdose. Xylazine can increase the effects of other depressants, such as fentanyl and heroin.

While xylazine alone does not cause the severe respiratory depression observed with opioid intoxication, the profound mental and physical depression may cause airway compromise, leading to suffocation.

Naloxone should be administered for respiratory depression, because xylazine and fentanyl are found together. There is no evidence for xylazine being sold or used alone.

People may find that naloxone appears to be ineffective in some overdoses, or that it takes a long time for the person to regain consciousness, as xylazine intoxication is not reversed by naloxone. Patients should be educated about this to avoid incorrectly attributing these incidents to “naloxone-resistant fentanyl” or “naloxone-resistant opioids.”

Be aware that the person may breathe normally after receiving naloxone, but can still be sedated from the xylazine. If they are breathing normally, more naloxone is not needed.

There is no reversal agent for xylazine that is safe for use in humans; supportive care is recommended, including rescue breathing. Blood pressure may be unstable and in need of monitoring or intervention.

## **Managing Withdrawal:**

Xylazine withdrawal is not yet a well-defined syndrome. It may include anxiety, irritability, and restlessness.

- If admitted for inpatient care, clinicians must be prepared to manage xylazine withdrawal symptoms

simultaneously with opioid withdrawal.

- Treat with benzodiazepines and/or alpha-2 adrenergic agonists, clonidine, dexmedetomidine, tizanidine, guanfacine.<sup>10</sup>
- Opioid withdrawal should be treated early, with liberal use of medications for opioid use disorder or opioid pain management in order to mitigate any pain and discomfort that could further exacerbate the manifestations of xylazine withdrawal that may lead to discharges, and/or patients leaving against medical advice.

## **Wound Care:**

- Avoid alcohol and hydrogen peroxide.
- Clean wounds with soap (if available) and bottled/tap water or saline.
- Cover with a non-adherent dressing (Xeroform®) covered by an absorbent one.
- Keep the skin around the wound clean of drainage and moisturized (Vitamin A+D ointment).
- Goal for wound bed: keep moist (helps dead skin soften/fall on its own) OR debridement.
- Antibiotics may not be needed.
- Manage pain.

## **Harm Reduction Messages:**

Educate patients about xylazine in the illicit drug supply, (currently only found in the illicit opioid supply in Georgia), and ask about any atypical wounds or abscesses. You educating them may be the first time they are hearing about xylazine.

Providers should be aware of the heightened risk of skin and soft tissue wounds among people who use drugs and provide both wound care treatment and harm reduction education (e.g., use sterile syringes, swab area with alcohol prep pad prior to injecting, rotate the injection sites, and avoid injecting into wounds) to reduce the risks of exacerbating local infections and acquiring communicable diseases.

Educate patients to be aware of overdose risks no matter the substance. Encourage them to practice as much harm reduction as possible, as consistently as possible.

When using Harm Reduction messaging, share facts about xylazine and the effects therein, but stay away from using any messaging that includes fear-based and/or shame-based language. We already know that scaring or shaming someone out of chaotic substance use often perpetuates more shame, encourages people to hide their behaviors and not seek help, and is much less likely to empower the user toward healthier choices and/or behaviors. Meeting them where they are and supporting them without judgment is the priority!

## **Basic Harm Reduction Messaging Providers Can Use with Patients/Clients:**

- “Start Low. Go slow.” You can always take more, but you can’t take less.
- Test your product, if you can.
- Sniffing or smoking is often safer than injecting.
- Try to avoid using alone. Because of the heavy sedation, be aware of your surroundings and your possessions, especially if you’re somewhere that’s not safe or secure. Be aware of your

belongings.

- If you are using alone, double down on other strategies. Have someone check on you. If you are using in a group, stagger your use so someone is always alert.
- Carry naloxone and know how to use it. Look out for each other. Make sure it is visible and easily accessible.
- Call 911 and tell them there is an “unresponsive person,” be aware that a xylazine-related overdose may need more care than naloxone.
- Be sure the person’s airway is open, as breathing may be blocked in slumped positions.

## Additional Resources

- [Access Point of Georgia, Inc.](#)
- [Xylazine Quick Guide for PWUDs \(Next Distro\)](#)
- [Xylazine in the drug supply \(Harm Reduction Coalition\)](#)
- [Philadelphia Dept of Public Health - Xylazine \(trang\) exposure among people who use substances in Philadelphia \(December 2022\)](#)
- [Philadelphia Dept of Public Health - Risks of Xylazine Use and Withdrawal in People Who Use Drugs in Philadelphia \(March 2022\)](#)

## References

<sup>1</sup>FDA warns about the risk of xylazine exposure in humans. November 2, 2022. <https://www.fda.gov/media/162981/>.

<sup>2</sup>Booze L. ToxTidbits. Xylazine 2019

<sup>3</sup>Mohr ALA, Browne T, Martin D, Logan BK. Xylazine: A Toxic Adulterant Found in Illicit Street Drugs: U.S. Dept of State; 2020 [updated October 2020. Available from: <https://www.nvopioidresponse.org/wp-content/uploads/2020/10/u-public-alert-xylazine-003.pdf>

<sup>4</sup>Michigan Poison Control Center, Wayne State University. Fact Sheet: Xylazine. 2020.

<sup>5</sup>Friedman, J., Montero, F., Bourgois, P., Wahbi, R., Dye, D., Goodman-Meza, D., & Shover, C. (2022). Xylazine spreads across the US: A growing component of the increasingly synthetic and polysubstance overdose crisis. *Drug and alcohol dependence*, 233, 109380.

<sup>6</sup>Risks of Xylazine Use and Withdrawal in People Who Use Drugs in Philadelphia. March 16, 2022

<sup>7</sup>Xylazine-Involved Drug Overdose Deaths Georgia, 2020-2022. Georgia Department of Health. March 8, 2023.

<sup>8</sup>Reyes JC, Negrón JL, Colón HM, et al. The emerging of xylazine as a new drug of abuse and its health consequences among drug users in Puerto Rico. *J Urban Health Bull N Y Acad Med.* 2012;89(3).

<sup>9</sup>Ohio Department of Mental Health and Addiction Services. Drug trend reports. <https://mha.ohio.gov/Researchers-and-Media/Workgroups-and-Networks/Ohio-Substance-Abuse-Monitoring-Network/Drug-Trend-Reports>.

<sup>10</sup>Ehrman-Dupre, R., Kaigh, C., Salzman, M., Haroz, R., Peterson, L. K., & Schmidt, R. (2022). Management of Xylazine Withdrawal in a Hospitalized Patient: A Case Report. *Journal of addiction medicine*, 16(5), 595–598.

*This document was adapted from the New York State Department of Health “Xylazine: What Clinicians Need to Know” (March 2023).*