

WELCOME

Addiction Medicine ECHO Clinic



The session will begin promptly at 12 pm.



Please mute the audio on your device.



Sessions take place Thursday on the 2^{cd} and 4th week of the month.



Please connect your camera.

Need technical assistance? Call [907.729.2622](tel:907.729.2622) or text your phone number into the chat.



Recording

We will record the **didactic portion** of every session. After the session, the didactic portion of this clinic will be available on the ANTHC Addiction Medicine ECHO page.

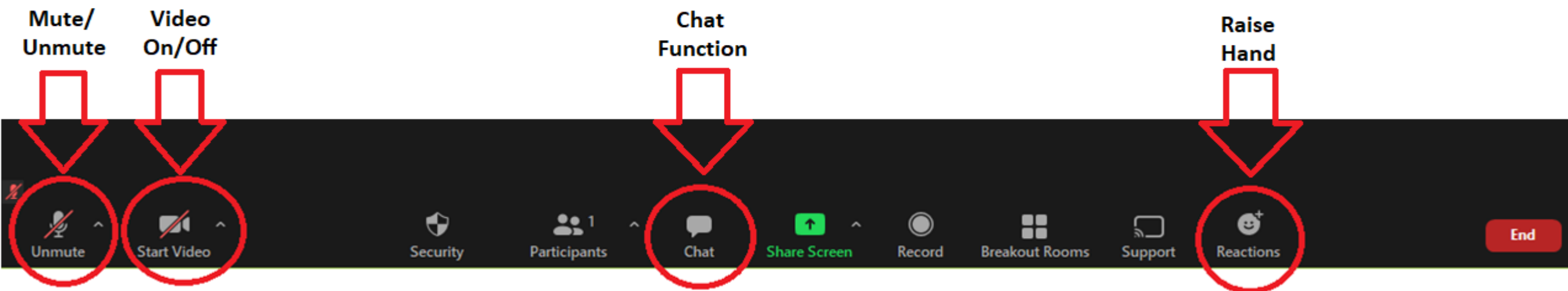
By participating in this clinic you are consenting to be recorded.

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Some Helpful Tips

- ▶ Please mute microphone when not speaking
- ▶ Use chat function
- ▶ Position webcam effectively
- ▶ Test both audio & video

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ANTHC Clinical ECHO Series

Approved Provider Statements:



JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

In support of improving patient care, Alaska Native Medical Center (ANMC) is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team.

Contact Hours:

ANMC designates this activity for a maximum of 25 contact hours, including 12 total pharmacotherapeutics contact hours, commensurate with participation.

Financial Disclosures:

None of the presenters and planners for this educational activity have any relevant relationship(s) to disclose with ineligible companies whose primary business is producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients.

Approved for 1 CHAP CE

Conflict of Interest Disclosures:

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Requirements for Successful Completion:

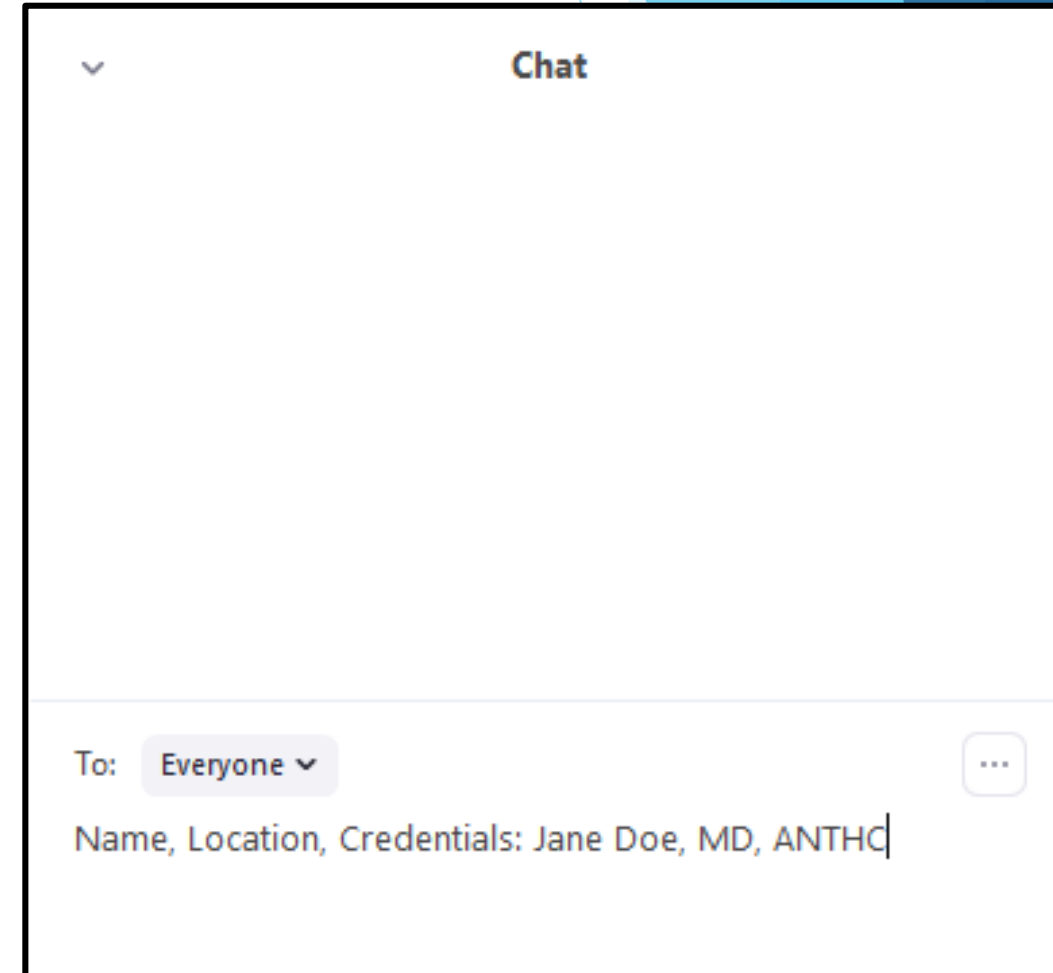
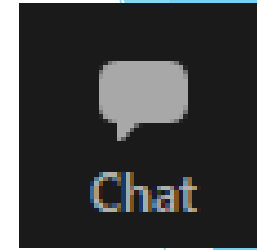
To receive CE credit be sure you are included in attendance record as directed by the facilitator/session moderator, and complete the course evaluation or post session survey via this link: <https://forms.gle/QhwCeGTf4zLNwpBX7>

For more information contact Jennifer Fielder at jfielder@anthc.org or (907) 729-1387

Introductions

Addiction Medicine ECHO

- Please introduce yourself in the chat :
 - Name
 - Location
 - Profession/Credentials
 - *Note:* The chat will be saved as our attendance record for continuing education credits.



Xylazine

Kristen Maves, PharmD

May 25, 2023



Conflict of Interest Disclosure

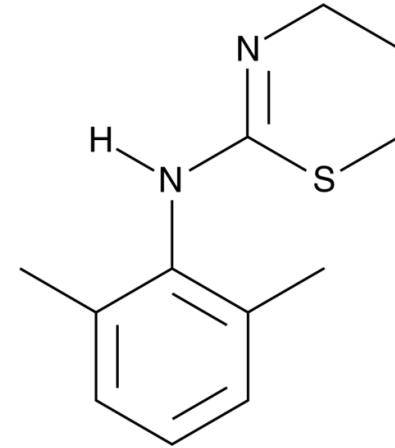
- ▶ No conflicts to disclose.

Objectives

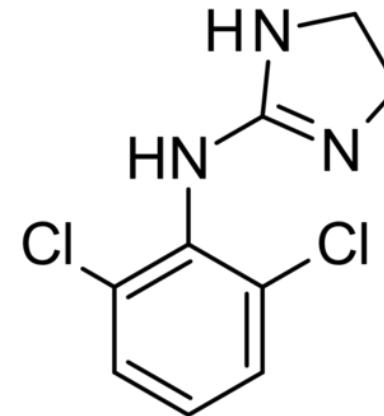
- ▶ What is Xylazine?
- ▶ What are the symptoms of Xylazine use/overdose
- ▶ Describe the treatment of Xylazine wounds

What is Xylazine?

- ▶ Non-narcotic agent was first synthesized in 1962 by the Bayer Corporation.
- ▶ Xylazine is approved by the U.S. Food and Drug Administration (FDA) for **veterinary use only**.
- ▶ Xylazine is a drug used in veterinary medicine as a sedative with analgesic and muscle relaxant properties to calm and facilitate handling, perform diagnostic and surgical procedures, relieve pain, or act as a local anesthetic (cattle, sheep, horses, dogs, cats, deer, rats, and elk)
- ▶ Xylazine has been studied in humans for its potential use as an analgesic, hypnotic, and anesthetic, but these clinical trials **were terminated due to its severe hypotension and central nervous system depressant effects.**
- ▶ Xylazine is NOT used in humans due to marked hypotension. Its toxic actions are similar to clonidine and the phenothiazines.



Xylazine



Clonidine

Xylazine

- ▶ Xylazine was first noted as an adulterant in Puerto Rico in the early 2000s through DEA reporting and laboratory analysis.
- ▶ Illegal xylazine is readily available for purchase on Internet sites in liquid and powder form, often with no association to the veterinary profession nor requirements to prove legitimate need.
- ▶ A kilogram of xylazine powder can be purchased online from Chinese suppliers for \$6-\$20 U.S. dollars per kilogram.
- ▶ At this low price, its use as an adulterant may increase the profit for illicit drug traffickers, as its psychoactive effects allows them to reduce the amount of fentanyl or heroin used in a mixture. Xylazine adds bulk to the substance being sold.



What is Xylazine

- ▶ Xylazine is a centrally acting α_2 -agonist that inhibits the release of norepinephrine and epinephrine. The effects on the central nervous system include sedation, analgesia, and euphoria.
- ▶ Reduced sympathetic outflow from the central nervous system causes decreased peripheral vascular resistance, heart rate, and blood pressure.
- ▶ Its toxic actions are similar to clonidine and the phenothiazines
- ▶ Taking opioids in combination with xylazine and other central nervous system depressants—like alcohol or [benzodiazepines](#) increases the risk of life-threatening overdose
- ▶ Xylazine can be swallowed, inhaled, smoked, snorted, or injected into the muscle or vein
- ▶ Xylazine has a rapid onset within minutes and can last for eight hours or longer depending upon the dose, route of administration, and whether it was mixed with opioids or other drugs
- ▶ The duration of symptoms after an overdose can vary widely, all the way from 8 to 72 hours

Why Xylazine?

- ▶ The “high” from fentanyl lasts for a very short time compared to the effects of heroin and other opioids.
- ▶ Xylazine may be added, at least in part, to extend the effects of fentanyl.
- ▶ However, not everyone who uses fentanyl is intentionally seeking out xylazine. In many cases, people are not aware that xylazine is in the drugs they are buying and using.
- ▶ Xylazine is an emerging substance of abuse that is frequently used in conjunction with opioids to **prolong the high and delay symptoms of withdrawal** or “give it legs.”

Toxic Effects of Xylazine

- ▶ The primary toxic effects seen after acute overdose with xylazine are:
 - ▶ Hypotension
 - ▶ Bradycardia
 - ▶ Respiratory depression
 - ▶ Dysrhythmias
 - ▶ Hyperglycemia
- ▶ Xylazine toxicity and fatalities varied from 40mg to 2400mg

Xylazine Use Symptoms CDC

- ▶ People may experience
 - ▶ A slow pulse
 - ▶ Dry mouth
 - ▶ Sedation
 - ▶ Difficulty breathing
 - ▶ Dangerously low blood pressure
 - ▶ Wounds that can become infected
 - ▶ Slowed breathing
 - ▶ Low blood pressure
 - ▶ Excessive fatigue
 - ▶ Looks like opioid overdose
 - ▶ **CANNOT be reversed with naloxone (Always administer since you cannot tell)**
- ▶ Xylazine has also been linked to skin ulceration

<https://www.cdc.gov/drugoverdose/deaths/other-drugs/xylazine/faq.html>

Xylazine Symptoms - DEA

- ▶ Effects associated with xylazine use include:
 - ▶ dry mouth
 - ▶ drowsiness
 - ▶ hypertension and tachycardia followed by hypotension and bradycardia
 - ▶ hyperglycemia
 - ▶ reduced heart rate
 - ▶ Hypothermia
 - ▶ coma
 - ▶ respiratory depression
 - ▶ dysrhythmia
 - ▶ Looks like opioid overdose
 - ▶ **CANNOT be reversed with naloxone (Always administer since you cannot tell)**
- ▶ Xylazine has also been linked to skin ulceration

Xylazine “tranq” or “tranq dope”

- ▶ Xylazine has been linked to an increasing number of overdose deaths nationwide. People are exposed to xylazine in combination with other drugs especially fentanyl
- ▶ People report using xylazine-containing fentanyl to lengthen its euphoric effects
- ▶ Most overdose deaths linked to both xylazine and fentanyl also involved additional substances, including cocaine, heroin, benzodiazepines, alcohol, gabapentin, methadone, and prescription opioids
- ▶ Overdoses associated with xylazine may be difficult to identify, as they often appear similar to opioid overdoses and may not be included in routine drug screening tests
- ▶ A comprehensive count of xylazine-positive overdose deaths in the United States is not currently possible, as not all jurisdictions routinely conduct testing for xylazine in postmortem toxicology

DEA Public Safety Alert

- ▶ Xylazine and fentanyl drug mixtures place users at a higher risk of suffering a fatal drug poisoning. Because xylazine is not an opioid, naloxone (Narcan) does not reverse its effects.
- ▶ Experts always recommend administering naloxone if someone might be suffering a drug poisoning.
- ▶ People who inject drug mixtures containing xylazine also can develop severe wounds, including necrosis—that may lead to amputation.
- ▶ *The DEA updated that alert in November 2022 warning that six out of ten fentanyl-laced fake prescription pills contain a potentially lethal dose of fentanyl.*

Identification of Xylazine in Drug Samples

(U) Figure 1. DEA Forensic Laboratory Identifications of Xylazine by Region

<i>Region</i>	<i>2020</i>	<i>2021</i>	<i>Percent Increase</i>
<i>Northeast</i>	346	556	61%
<i>South</i>	198	580	193%
<i>Midwest</i>	110	118	7%
<i>West</i>	77	163	112%

Source: DEA

Xylazine Overdose Deaths by Region

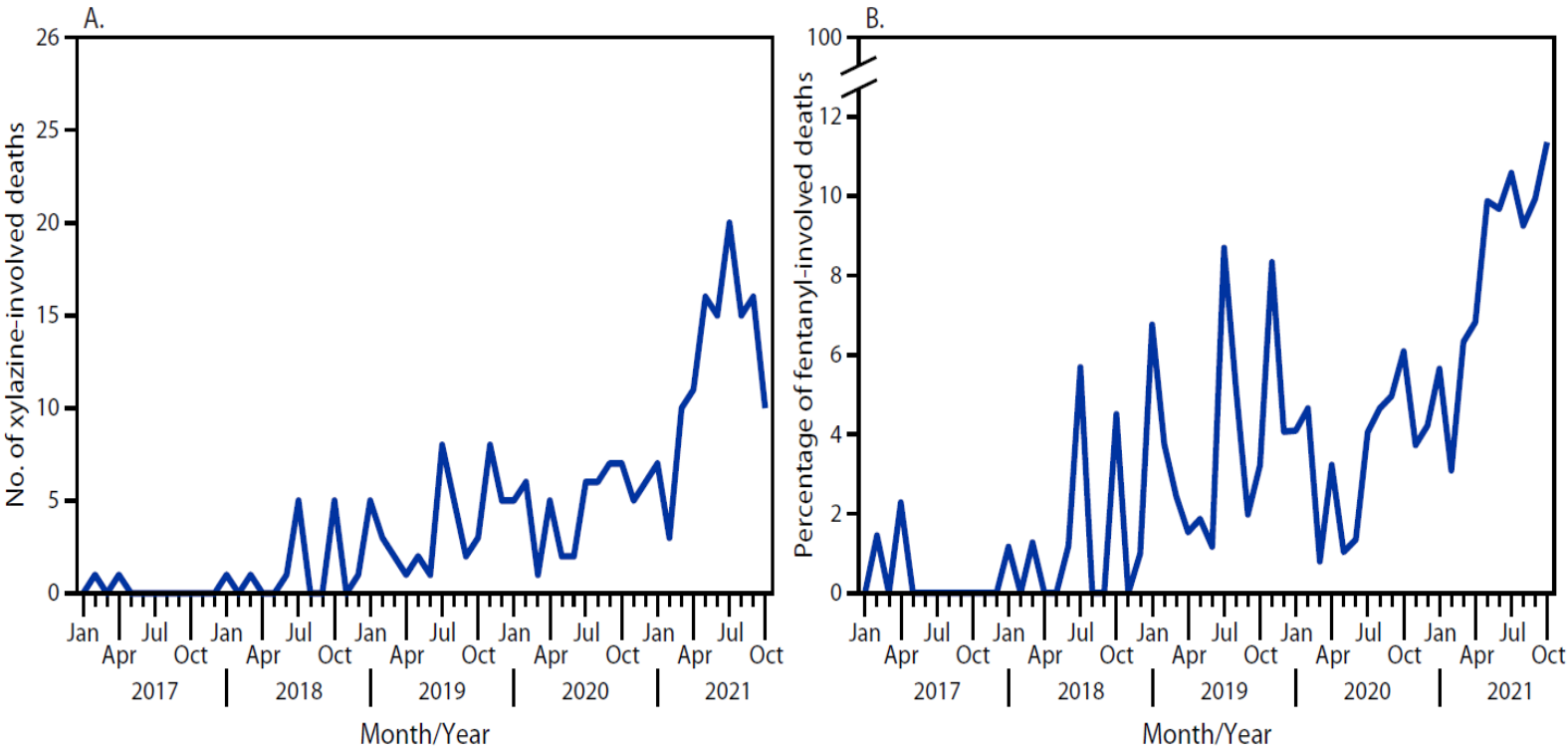
- ▶ It is unknown what percentage of the increase is due to expanded testing versus increasing use of xylazine.
- ▶ A comprehensive count of xylazine-positive overdose deaths in the United States is not currently possible, as not all jurisdictions routinely conduct testing for xylazine in postmortem toxicology

(U) Figure 2. Number of Xylazine-Positive Overdose Deaths by Region

<i>Region</i>	<i>2020</i>	<i>2021</i>	<i>Percent Increase</i>
<i>Northeast</i>	631	1,281	103%
<i>South</i>	116	1,423	1,127%
<i>Midwest</i>	57	351	516%
<i>West</i>	4	34	750%

Source: DEA

FIGURE. Number of xylazine-involved deaths (A) and percentage of fentanyl-involved deaths with detectable xylazine (B), by month — Cook County, Illinois, 2017–2021



Xylazine Overdose

- ▶ Xylazine has no approved antidote for human use, and as xylazine is not an opioid, naloxone does not reverse its effects.
- ▶ In a suspected xylazine overdose, experts recommend giving the opioid overdose reversal medication [naloxone](#) because xylazine is frequently combined with opioids.
- ▶ The administration of naloxone can still address the effect of an opioid on breathing which may be sufficient to prevent death.
- ▶ Because of this, experts are concerned that a growing prevalence of xylazine in the illicit opioid supply may render naloxone less effective for some overdoses.
- ▶ Treatment is symptomatic, supportive and directed at managing apnea or the loss of protective airway reflexes, bradycardia, and hypotension.
- ▶ Severe bradycardia which does not respond to physical stimulation should be treated with standard dose of atropine or cardiac pacing. Norepinephrine or dopamine may be beneficial in patients with severe bradycardia and hypotension.
- ▶ Patients with significant CNS and/or respiratory depression should be intubated

<https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>



Overdose: Not just naloxone!

If someone took benzos or xylazine (*tranq/sleepdope*), naloxone may not be enough! What do you do???

If they aren't breathing:

1. Try to **wake them up**
2. **CALL 911**, ask for EMS!!
3. **Use naloxone** to reverse fentanyl/opioid overdose. Give 1 or 2 doses. Naloxone takes 3-5 minutes to work!
4. While you are waiting for the naloxone, perform **rescue breathing**:
 - Take a deep breath, pinch their nose, cover their mouth with yours, blow into their lungs like blowing up a balloon
 - Two breaths to start then 1 every 5 seconds
5. **Keep checking for breathing**
 - Put your ear near their mouth and nose
 - Feel, look, listen for breathing, check for color returning
6. If they are still not breathing, **continue rescue breaths until EMS arrives**

If they are breathing, but not waking up:

There may be other drugs involved like benzos or xylazine (*tranq/sleepdope*). More naloxone won't help!

Roll them into **recovery position**:

- Roll them on their side, with one side's arm and leg straight, the other side's arm and leg bent. This position will keep them on their side so they won't choke if they vomit



Keep airway clear in case they throw up

Bent leg supports them from rolling over



Xylazine Withdrawal

- ▶ Xylazine withdrawal is not a well-defined syndrome.
 - ▶ **anxiety**
 - ▶ Irritability
 - ▶ dysphoria
 - ▶ restlessness
 - ▶ Severe hypertension is also possible
- ▶ 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.
- ▶ 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 or lead to discharges against medical advice.

Xylazine Wounds

- ▶ Xylazine use may cause skin and soft tissue wounds, including ulcerations. 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 appear to be **independent of injection sites**.
- ▶ These wounds are presenting atypically, tending to be on legs and arms and appear to worsen more quickly than other skin wounds leading to gangrene and amputation.



Xylazine Wounds

- ▶ Unlike abscesses, which are common with injected drugs, xylazine wounds will start out resembling blisters that then open and expand, leading to the risk of infection and **growing wider instead of deeper**.
- ▶ Lesions may develop over various body **parts irrespective of the intravenous injection sites**. The presumed mechanism is thought to be the direct vasoconstricting effect on local blood vessels and resultant decreased skin perfusion.
- ▶ Complications include severe soft tissue infections (abscesses, cellulitis), skin ulceration, and impaired wound healing.
- ▶ These complications may be perpetuated by continued injection of the painful ulcers because of the anesthetic effect of xylazine.

Xylazine Wound Treatment

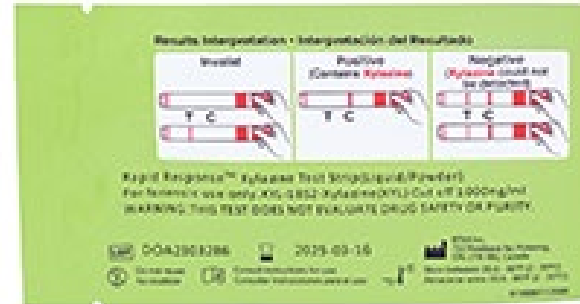
- ▶ Wash Xylazine related wounds with a clean cloth, sterile water and plain soap.
- ▶ Keeping the wound soft is key, applying Vaseline or Xeroform, both available over-the-counter, can keep the injury from getting worse.
- ▶ Covering it in non-adhesive gauze and then wrapping the injury in an ace bandage can ensure the wound stays clean.



Harm Reduction

- ▶ Educate patients about xylazine in the illicit drug supply and ask about atypical wounds.
- ▶ 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 prior to injecting, rotate injection site, and avoid injecting into wounds) to reduce the risks of exacerbating local infections.
- ▶ Educate patients that if xylazine overdose is suspected give naloxone as often mixed with fentanyl. Naloxone will not reverse xylazine as it is not an opioid.
- ▶ Educate patients to be aware of overdose risks no matter what drugs are used, and practice as much harm reduction as possible, as consistently as possible.
- ▶ Encourage use of xylazine and fentanyl strips.

Xylazine Test Strips



Lochness medical \$3 per strip/ \$300 per box



References

- ▶ https://www.deaiverison.usdoj.gov/drug_chem_info/Xylazine.pdf
- ▶ <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- ▶ [Xylazine-Induced Skin Ulcers in a Person Who Injects Drugs in Philadelphia, Pennsylvania, USA - PMC \(nih.gov\)](#)
- ▶ <https://nida.nih.gov/research-topics/xylazine>
- ▶ [Tox Result Page - In-Depth Answers - Overview - Life Support \(micromedexsolutions.com\)](#)
- ▶ <https://www.cdc.gov/drugoverdose/deaths/other-drugs/xylazine/faq.html>
- ▶ <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- ▶ <https://www.dea.gov/alert/dea-reports-widespread-threat-fentanyl-mixed-xylazine>
- ▶ <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- ▶ <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- ▶ MMWR / US Department of Health and Human Services/Centers for Disease Control and Prevention April 1, 2022 / Vol. 71 / No. 13
- ▶ <https://www.dea.gov/sites/default/files/2022-12/The%20Growing%20Threat%20of%20Xylazine%20and%20its%20Mixture%20with%20Illicit%20Drugs.pdf>
- ▶ <https://www.health.ny.gov/publications/12044.pdf>
- ▶ <https://www.aad.org/dw/dw-insights-and-inquiries/archive/2022/xylazine-potential-for-loss-of-life-and-limb>
- ▶ <https://www.cbsnews.com/news/xylazine-side-effects-overdose-in-humans/>

Case Presentation

Project ECHO's goal is to protect patient privacy

- ▶ To help Project ECHO accomplish that goal, please only display or say information that doesn't identify a patient or that cannot be linked to a patient.
- ▶ **References: For a complete list of protected information under HIPAA, please visit www.hipaa.com**

Thank you for joining us today.
We appreciate your participation and hope
to see you at the **NEXT ECHO Session:**
June 22nd, 2023 from 12pm -1 PM

You will be receiving a follow up survey that we hope you will complete to help us improve. If you are requesting continuing education credits, you will be required to complete the survey to receive your CMEs.

