March 18, 2024

Nitazene opioids in Toronto opioid samples that are not expected to contain high-potency opioids

Toronto's Drug Checking Service is observing an increase in the presence of nitazene opioids in opioid samples that are not expected to contain high-potency opioids.

Between January 1 and March 8, 2024, we have found:

- Isotonitazene/protonitazene (considered to be up to 8 times stronger than fentanyl), etonitazepyne (considered to be more than 20 times stronger than fentanyl), and/or protonitazepyne (considered to be more than 20 times stronger than fentanyl) in 4 of 8 expected oxycodone (OxyContin) samples
- Metonitazene (considered to be roughly as strong as fentanyl) in 2 of 7 expected hydromorphone (Dilaudid) samples
- Isotonitazene/protonitazene in 1 of 1 expected hydrocodone samples
- Metonitazene in 1 of 9 expected Percocet samples

Nitazene opioids are far stronger than oxycodone, Percocet, hydromorphone, and hydrocodone. For example, protonitazepyne is considered to be more than 20 times stronger than fentanyl and fentanyl is considered to be more than 50 times stronger than oxycodone.

What are nitazene opioids?

Nitazene opioids were synthesized in the 1950s to relieve pain but were never clinically approved for market. Most nitazene opioids are considered to be stronger than fentanyl – and therefore classified as "high-potency opioids" by Toronto's Drug Checking Service. Around 2019, nitazene opioids began presenting in the unregulated drug supply in Europe, the United States, and then Canada. In Canada, nitazene opioids have been especially prevalent in the eastern provinces – primarily Ontario and Quebec.

Toronto's Drug Checking Service first identified a nitazene opioid in Toronto's unregulated fentanyl supply in February 2021. Between February 12, 2021, and March 8, 2024, Toronto's Drug Checking Service:

- Has identified 10 different nitazene opioids in samples checked, including 4'-hydroxynitazene, 5-aminoisotonitazene, etodesnitazene, etonitazene, etonitazepyne, isotonitazene/protonitazene,

metonitazene, N-desethyl etonitazene, N-desethyl isotonitazene, and protonitazepyne. You can learn more about these drugs, including their suspected strength as compared to fentanyl in our **Drug Dictionary**.

- Has reported nitazene opioids 555 times in 474 samples. The vast majority of these samples were expected to be fentanyl (418 of 474).
- Has observed **significant variation in the number of expected fentanyl samples that contain nitazene opioids**. Between January 1 and March 8, 2024, nitazene opioids were found in 3% of the expected fentanyl samples checked, as compared to 22% between January and March 2022.
- Has found nitazene opioids in 25 other expected opioid samples, including samples expected to be oxycodone (OxyContin) (9 of 474), Percocet (5 of 474), hydromorphone (Dilaudid) (4 of 474), heroin (3 of 474), and hydrocodone (2 of 474). Two samples containing nitazene opioids were expected to be a nitazene opioid.
- Has not confirmed nitazene opioid contamination in samples that were expected to be other drug types, such as stimulants, psychedelics, dissociatives, or depressants.

What are the potential effects of using nitazene opioids?

- **Since nitazene opioids are so strong, the risk of overdose in increased and greater than normal doses of naloxone may be required to rouse individuals experiencing an overdose**.
- The risk of overdose may be further increased for people who use oxycodone (OxyContin), Percocet, hydromorphone (Dilaudid), or hydrocodone, as compared to people who use fentanyl, because their opioid tolerance may be lower.

Advice to reduce potential harms associated with using nitazene opioids:

1. **Carry and be trained to use naloxone**. Naloxone should reverse the effects of nitazene opioids in an overdose situation. However, since many nitazene opioids are so strong, greater than normal doses of naloxone may be required to rouse individuals experiencing an overdose.
2. **Get your drugs checked**, ideally before using, and providing services are available to you.
3. If your drugs did not contain what you were expecting, **consider talking to the person you got your drugs from**, or get your drugs from another source if possible.
4. **Do a small test dose** first.
5. **Use with someone else and take turns spotting each other – or at a supervised consumption site or overdose prevention site**.
6. **If you must use alone, let someone know before you use**.

View more **general harm reduction tips and help on our website**.

Which drug checking technologies can identify nitazene opioids at this time?

- Our analysis site member at the **Centre for Addiction and Mental Health** (Clinical Laboratory and Diagnostic Services) has identified several different nitazene opioids using liquid chromatography-Orbitrap high resolution mass spectrometry (LC-HR-MS).
- Our analysis site member at **St. Michael's Hospital** (Department of Laboratory Medicine) has identified several different nitazene opioids using gas chromatography-mass spectrometry (GC-MS).
- **Health Canada's Drug Analysis Service** has identified several different nitazene opioids using GC-MS, nuclear magnetic resonance spectroscopy (NMR), and gas chromatography-infrared spectroscopy (GC-IR) in samples submitted by Canadian law enforcement agencies and public health partners.
- The University of Victoria's **Substance** project has identified several different nitazene opioids using paper spray-mass spectrometry (PS-MS).
- Some Fourier transform infrared spectrometer (FTIR) libraries, such as those developed by the **British Columbia Centre on Substance Use** and **Kykeon Analytics**, include some nitazene opioids. However, it is likely that nitazene opioids would account for less than 5% of the sample, meaning they would fall below the FTIR's limit of detection and therefore be missed by instrument. To minimize this limitation, FTIR is often coupled with test strips, which are more likely to identify substances in trace amounts. It is unclear whether available nitazene test strips can idenfity the nitazene opioids that are circulating.
- It is unlikely that emerging onsite drug checking technologies can identify the many nitazene opioids that are circulating at this time as their libraries are being developed and their limits of detection are being determined.

Toronto's Drug Checking Service is a free and anonymous public health service that aims to reduce the harms associated with substance use and, specifically, to prevent overdose by offering people who use drugs timely and detailed information on the contents of their drugs. Beyond educating individual service users, results for all samples are collated and analyzed to perform unregulated drug market monitoring, then translated and **publicly disseminated every other week** to communicate unregulated drug market trends to those who cannot directly access the service, as well as to inform care for people who use drugs, advocacy, policy, and research. **Sign up** to receive reports, alerts, and other information on Toronto's unregulated drug supply.

(website) **www.drugchecking.community** | (email) **hello@drugchecking.community** | (X) **@drugcheckingTO** | (IG) **@drugchecking**

South Riverdale COMMUNITY HEALTH CENTRE

TORONTO Public Health

MOSS PARK OPS

PARKDALE QUEEN WEST Community Health Centre

tasp

ST. MICHAEL'S UNITY HEALTH TORONTO

camh Centre for Addiction and Mental Health