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Your Health Connection

PUBLIC HEALTH ALERT

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Medetomidine in the Unregulated Drug Supply

Attention: Emergency Departments, Family Health Teams, Midwives, Nurse Practitioners, Physicians, Pharmacies, Beausoleil First Nation, Moose Deer Point First Nation, Rama First Nation, Wahta First Nation, Ontario Health Central Region, EMS

Date: January 27, 2026

Emergence of Medetomidine in the Unregulated Drug Supply

In 2024, Toronto Drug Checking services identified medetomidine, an animal tranquilizer, as an emerging and dangerous adulterant in the unregulated drug supply, particularly when mixed with substances expected to be fentanyl. At that time, medetomidine was found in approximately 11% of expected fentanyl samples. As of December 26, 2025, medetomidine was found in 81% of the drug checking service samples identified as being fentanyl by the user.

Clinical Context

Medetomidine is a veterinary sedative approved for surgical use in animals, but not in humans. Dexmedetomidine, a related compound, is approved for medical use in humans and has similar but more selective sedative and analgesic effects. Medetomidine in the unregulated drug supply is often used in combination with other tranquilizers or benzodiazepines, which can amplify its sedative properties and contribute to additional respiratory and cardiovascular depression, resulting in markedly reduced breathing, blood pressure, and heart rate. Compared with xylazine – another veterinary tranquilizer in the unregulated drug supply - medetomidine produces deeper, longer lasting sedation. However, unlike xylazine, medetomidine has not been linked to an increased incidence of skin or soft-tissue wounds.

Signs and Symptoms of Withdrawal

Withdrawal symptoms can begin abruptly within hours of last use and typically peak within 18 – 36 hours. Symptoms can be life threatening requiring medical intervention and include:

- Tachycardia
- Severe hypertension
- Severe Nausea and vomiting
- Waxing and waning alertness
- Anxiety
- Diaphoresis
- Restlessness

Coroner Data

Tracking of medetomidine presence in opioid toxicity deaths by the Office of the Chief Coroner of Ontario began in 2024. In 2024, 1.2% of opioid toxicity related deaths identified medetomidine as being present, while in the first 2 quarters of 2025, medetomidine was found in 4.5% of opioid toxicity deaths. It is important to note that due to evolving toxicology methods and best practices around quantifying and defining toxic levels of substances including medetomidine, novel fentanyl analogues, nitazenes, non-pharmaceutical benzodiazepines, and xylazine, these substances may not be consistently characterized in the cause of death.

Use of Naloxone

Medetomidine is not an opioid, and its pharmacologic effects are not reversed by naloxone. Nonetheless, naloxone administration remains appropriate in any case of suspected medetomidine and/or opioid exposure, as it can reverse opioid-induced respiratory and central nervous system depression that may coexist within the supply. It is important to stress to patients/clients and their family/friends that if someone is experiencing an overdose, to call 911 immediately and give naloxone if available.

More information

- Toronto Drug Checking Services - Medetomidine (printable client-facing poster: Medetomidine)
- Canadian Community Epidemiology Network on Drug Use – Substance Use Trends in Canada - Medetomidine
- Huo S. Notes from the Field: Suspected Medetomidine Withdrawal Syndrome Among Fentanyl-Exposed Patients — Philadelphia, Pennsylvania, September 2024–January 2025. MMWR Morb Mortal Wkly Rep. 2025;74. https://www.cdc.gov/mmwr/volumes/74/wr/mm7415a2.htm
- Ostrowski SJ. Notes from the Field: Severe Medetomidine Withdrawal Syndrome in Patients Using Illegally Manufactured Opioids — Pittsburgh, Pennsylvania, October 2024–March 2025. MMWR Morb Mortal Wkly Rep. 2025;74. https://www.cdc.gov/mmwr/volumes/74/wr/mm7415a3.htm