NITAZENES

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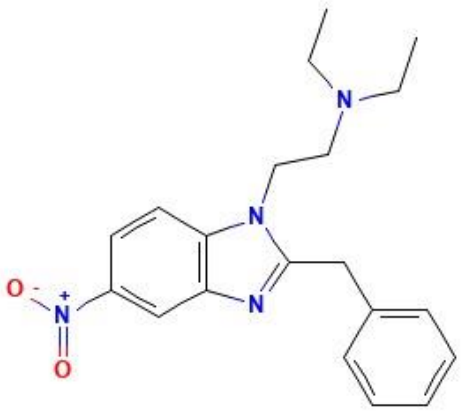
Objective: The goal of this bulletin is to provide information regarding an identified drug, and to act as a reminder regarding the dangers associated with the substance.

Subject Matter: This release provides information regarding the group of synthetic opioids called nitazenes, which continue to be available through illicit online sources and some local dealers. Due to its presence increasing in the illicit drug supply, the following is presented to provide a general understanding on what nitazenes are, and their ongoing threat to public health and safety.

What are Nitazenes?

Source: PubChem



Nitazenes are a group of extremely potent synthetic opioids that were developed in the 1950s, and have increasingly begun appearing in the illicit drug supply in the United States and other countries. They can be many times stronger than morphine or even fentanyl, which makes overdose possible even with very small amounts. [1]

Nitazenes (also called benzimidazole-opioids) are lab-made opioid agonists that act mainly at the mu-opioid receptor, like heroin, morphine, and fentanyl. They share a benzimidazole chemical structure and do not look like morphine on standard drug screens, so routine toxicology tests often miss them. [1]

The drugs were first synthesized by a Swiss pharmaceutical lab as possible painkillers but were abandoned because of their narrow safety margin and have no approved medical use today. [1] Illicit versions include the most common nitazene, isonitazene (ISO), metonitazene, protonitazene, and others, which are sold on their own or mixed into heroin, counterfeit pills, or other street drugs. [1][2] As of October 2025, twenty-one nitazenes (10 permanently and 11 temporarily) were listed as schedule I substances under the Controlled Substances Act. However, additional nitazenes could be considered as schedule I controlled substances if they meet the criteria as analogues pursuant to 21 U.S.C. 813. [3]

Effects Following Nitazene Usage

Like other opioids, nitazenes produce pain relief, euphoria, and sedation by activating mu-opioid receptors in the brain and body. [2] Short-term effects can include intense relaxation, drowsiness, slowed breathing, small pupils, nausea, and constipation. Because some nitazenes are far more potent than morphine or fentanyl, users may experience rapid and deep sedation even with doses they think are "small." The duration of effect and recovery can vary by specific compound, as some nitazenes can cause prolonged respiratory depression. [2]

Source: DEA

Specific Dangers of Nitazene Use

The main danger is life-threatening respiratory depression, during which breathing can slow or stop, leading to low oxygen, coma, and death. [2] Nitazenes often appear unexpectedly in street drugs, so people may think they are taking heroin, oxycodone, or benzodiazepines and are unaware of the much higher overdose risk. [2] The extreme potency means that very small variations in dose or mixing with other sedating drugs (alcohol, benzodiazepines) can cause an overdose. [1] Standard urine drug screens often fail to detect nitazenes, which complicates diagnosis and surveillance and can delay appropriate response or public health warnings. Their pharmacology is still being studied, so there is uncertainty about how long toxicity lasts and how much monitoring is needed after apparent reversal. [4]

Overdose Risks and Reversal

Some nitazenes may be hundreds of times more potent than morphine; for example, isotonitazene has been estimated at roughly 250–900 times stronger, and the most potent analogs may reach up to about 4,300 times morphine's potency in laboratory measures. [2] Clinical data show that overdoses involving novel potent opioids like nitazenes often require higher or repeated naloxone dosing compared with fentanyl-only overdoses, suggesting very strong receptor activation and persistent effects. [4]

Despite that, naloxone still works. Case series and reviews report that intravenous naloxone with median doses around 1.2 mg (often with repeated doses or infusions) can reverse nitazene poisoning when combined with airway and breathing support. [4] Because nitazenes are frequently taken with or hidden in other opioids and sedatives, overdose presentations can be severe, including cardiac arrest, and patients may need prolonged observation after reversal. [4]

Source: Australian CIC

References:

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