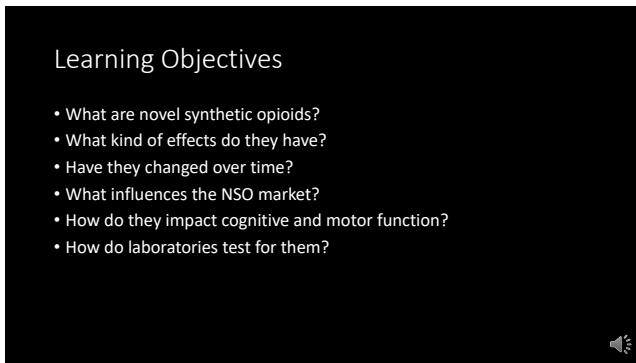
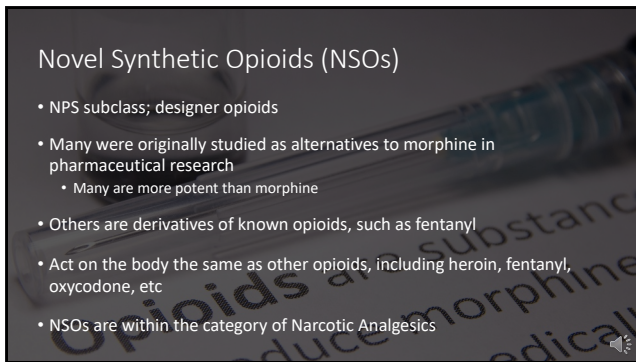




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3

Narcotic Analgesics

Indications


- Pain Management

Adverse Side Effects

- Analgesia
- Drowsiness
- Sedation
- Lethargic behavior, "on the nod"
- Incoordination
- Confusion
- Slurred speech

4


DRE Matrix



Major Indicators	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
BGN	Present	None	None	Present	None	Present	None
Vertical Nystagmus	Present (High Dose)	None	None	Present	None	Present (High Dose)	None
Lack of Convergence	Present	None	None	Present	None	Present	Present
Pupil Size	Normal (1)	Dilated	Dilated	Normal	Constricted	Normal (4)	Dilated (6)
Reaction to Light	Slow	Slow	Normal (3)	Normal	Little or none visible	Slow	Normal
Pulse Rate	Down (2)	Up	Up	Up	Down	Up	Up
Blood Pressure	Down	Up	Up	Up	Down	Up/Down(5)	Up
Body Temperature	Normal	Up	Up	Up	Down	Up/Down/Normal	Normal
Muscle Tone	Flaccid	Rigid	Rigid	Rigid	Flaccid	Normal or Flaccid	Normal

5

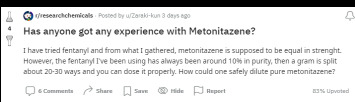
Miosis – "Pinpoint pupils"



6

Formulations

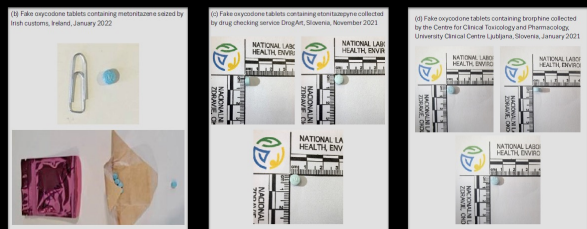
- Powders
 - Alone or in combination
 - Pressed pills
 - Nasal sprays
- NSO can be used intentionally or mixed with illicit drug supply



Source: <https://www.reddit.com/r/researchchemicals/>

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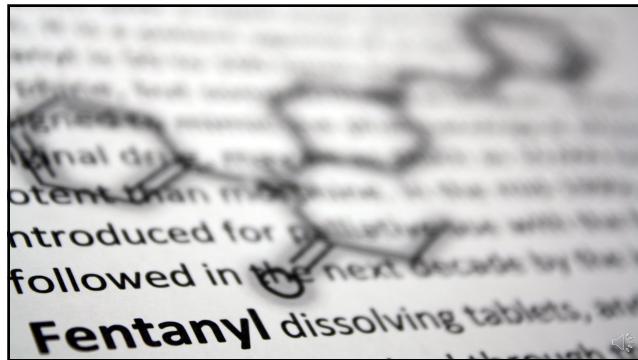
Counterfeit Pharmaceuticals



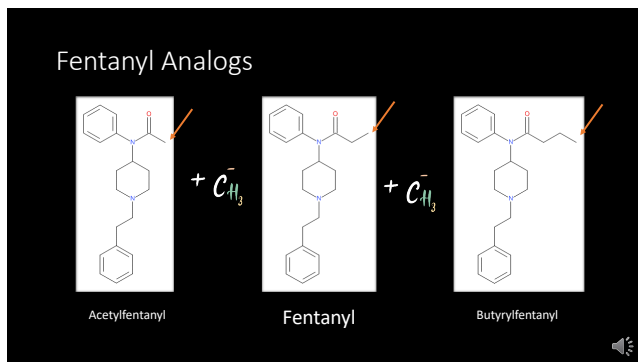
Source: Enforcement Section, Irish Health Products Regulatory Authority
 Source: Slovenian National Laboratory for Health, Environment and Food
 Source: Slovenian National Laboratory for Health, Environment and Food

Source: https://www.emcdda.europa.eu/system/files/publications/14637/20222218_PDF_TD052213ENN_002.pdf

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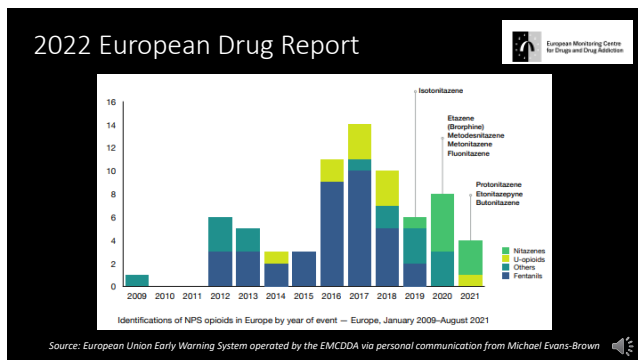


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Fall of Fentanyl Analogs

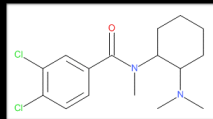
- Many fentanyl analogs proliferated between 2016 and 2019
- Domestic scheduling prior to 2018 was on an individual analyte basis
- Feb 2018, class wide schedule for fentanyl related substances enacted by DEA
- China followed up with some export bans of their own for illicit fentanyl precursors
- Result was a decline in fentanyl analogs on the market

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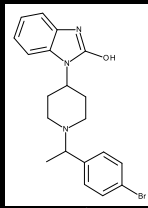


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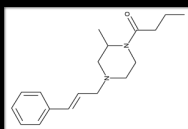
Novel Synthetic Opioid Structures



U-47700



Brorphine

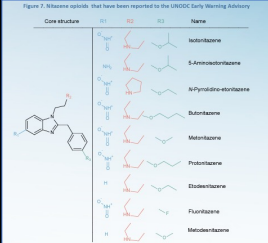
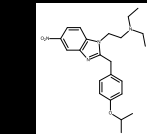



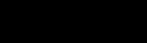
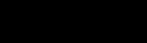
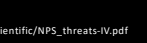


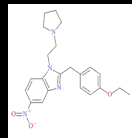


2-Methyl AP-237

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"Nitazenes"

Figure 7. Nitazene opioids that have been reported to the UNODC Early Warning Laboratory


Core structure	01	02	03	Name
				Isotonitazene
				5-Amino-6-ethyl-2-methyl-1,2,3,4-tetrahydro-1H-benzopyrrolo[3,2-c]pyridine-7-carboxamide
				Butonitazene
				Metonitazene
				Etodesnitazene
				Flunitazene
				Metodesnitazene

Source: https://www.unodc.org/documents/scientific/NPS_threats-IV.pdf


N-Pyrrolidino Etonitazene
Synonyms: Etonitazepine

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7 December 2021: DEA Filed Notice of Intent



FEDERAL REGISTER
The Daily Journal of the United States Government

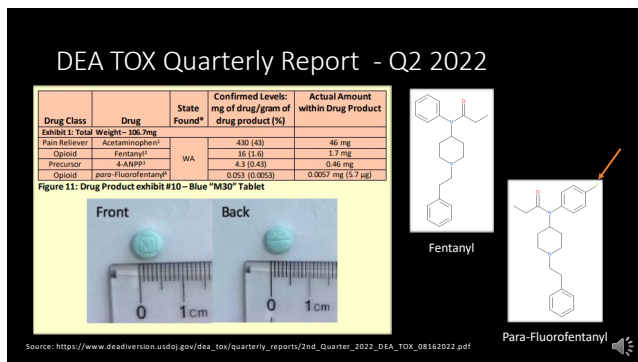
 Proposed Rule

Schedules of Controlled Substances: Temporary Placement of Butonitazene, Etodesnitazene, Flunitazene, Metodesnitazene, Metonitazene, N-pyrrolidino etonitazene, and Protonitazene in Schedule I

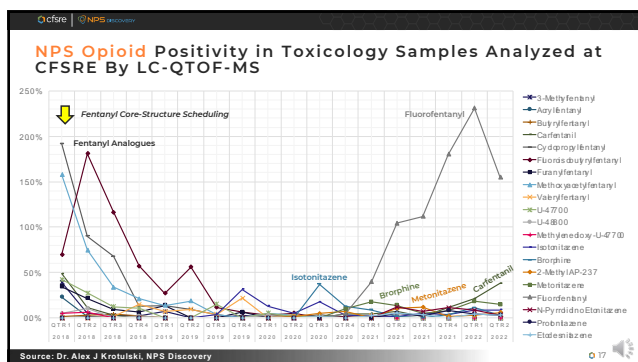
A Proposed Rule by the Drug Enforcement Administration on 12/07/2021

Source: <https://www.federalregister.gov/documents/2021/12/07/2021-07460/schedules-of-controlled-substances-temporary-placement-of-substances-etodesnitazene-flunitazene>

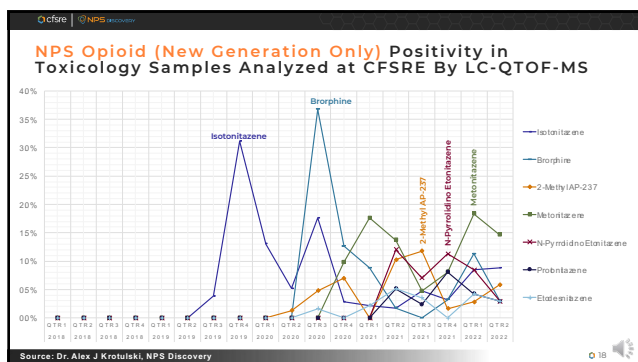
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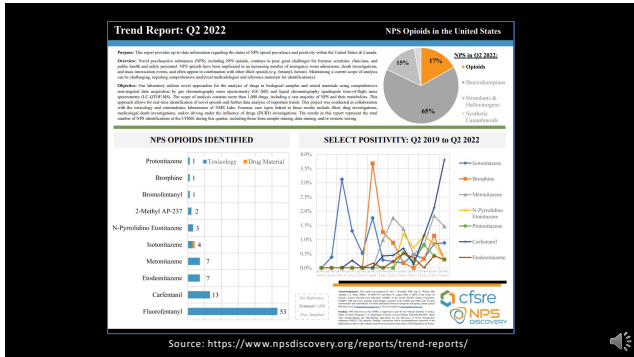
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Toxicology Testing for NSOs

- Fentanyl analogs may trigger immunoassay screens targeted towards fentanyl
 - Concentration dependent
- "New generation" opioids will not trigger immunoassay screens for opioids and/or fentanyl
- Detection of "new generation" opioids require specialized testing
- Typically require low reporting limits due to high potencies

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Driving & NSOs

- In 2017, carfentanil was the second most frequently detected drug in DUI blood samples in Palm Beach County, FL (Tiscione N, 2018)
 - Carfentanil found by itself in 4 cases
- Drivers found unconscious behind the wheel of the car and over half involved some type of traffic crash
- Symptoms included: miosis, slurred speech, droopy eyelids, lethargy, difficulty with balance, and slow response to questions

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Summary

- NSO use is just one aspect of the opioid epidemic
- An increase in illicit opioid use has inevitably resulted in an increase in illicit opioids detected in DUI/D cases
 - CNS depressant effects pose significant threat to cognitive and motor function
- NSOs have infiltrated the illicit opioid supply, however, prevalence is underestimated
- Toxicology testing is variable

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