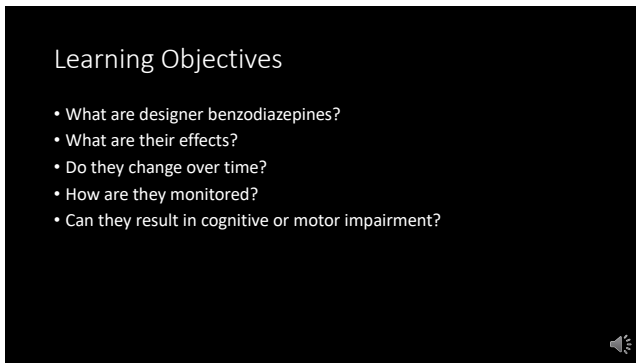
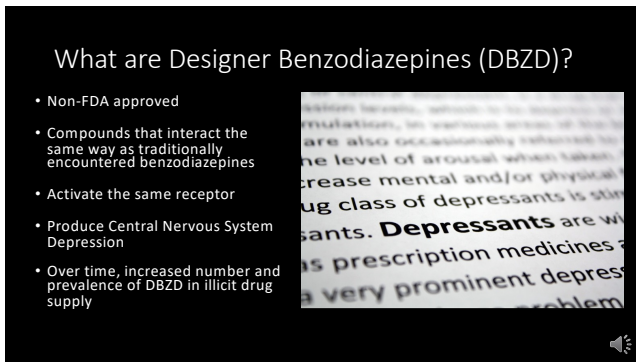




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Benzodiazepines

Indications


- Anxiolytic
- Anti-convulsant
- Muscle relaxant
- Insomnia

Adverse Side Effects

- Drowsiness
- Sedation
- Lethargic behavior
- Incoordination
- Amnesia
- Confusion
- Slurred speech

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DRE Matrix

 DRUG IMPAIRMENT.COM

Major Indicators	CNS Depressants	CNS Stimulants	Hallucinogens	Dissociative Anesthetics	Narcotic Analgesics	Inhalants	Cannabis
BIGN	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

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Diverted Pharmaceuticals



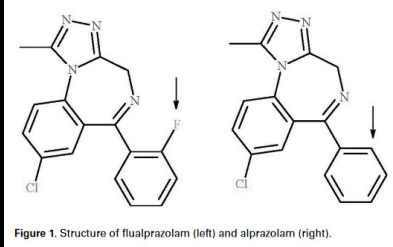
Etizolam – prescribed in Italy, India and Japan



Bromazepam – prescribed in Canada

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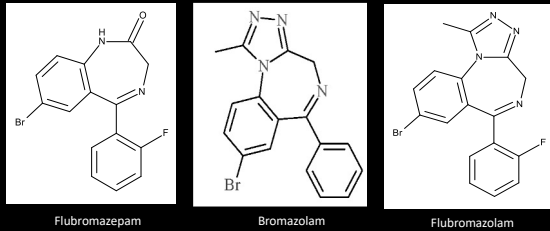
Modifications to Medicinal Benzodiazepines



Source: Papsun DM, Kotulski AJ, Horvath J, et al. Flualprazolam blood concentrations in 197 forensic investigation cases. *Journal of Analytical Toxicology*. 2020; 1:7

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DBZD Variants



Source: Papsun DM, Kotulski AJ, Horvath J, et al. Flualprazolam blood concentrations in 197 forensic investigation cases. *Journal of Analytical Toxicology*. 2020; 1:7

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Designer Benzodiazepines

- As of December 2021, EMCDDA monitoring 33 different DBZDs
- 80% of these detected for 1st time between 2014-2020
 - Etizolam and Flualprazolam placed under international control November 2020
- Novel benzos
 - May be licitly prescribed in certain countries, illicitly supplied to others
 - Counterfeit pharmaceuticals
 - Mixed in illicit drug supply
 - "benzo-dope"



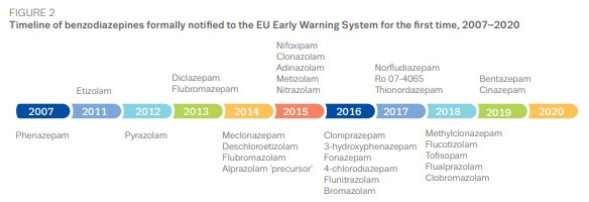
Source: Papsun DM, Kotulski AJ, Horvath J, et al. Flualprazolam blood concentrations in 197 forensic investigation cases. *Journal of Analytical Toxicology*. 2020; 1:7



Source: Dr. Alex Krivolak, CPPE

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New Benzodiazepines in Europe – a Review: EMCDDA

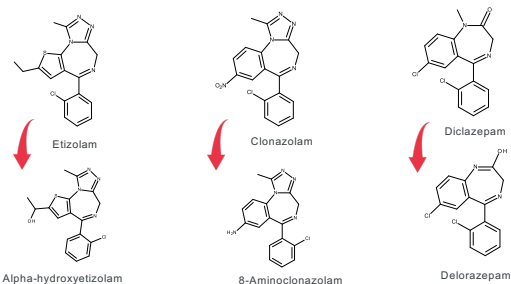


Source: New Benzodiazepines in Europe – a Review. European Centre for Drugs and Drug Addiction, 2021 Luxembourg, Publications Office of the EMCDDA.

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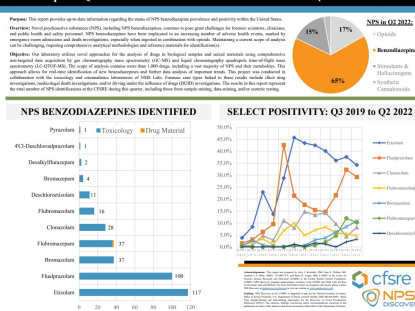
Parent & Metabolite Pairs



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Trend Report: Q2 2022



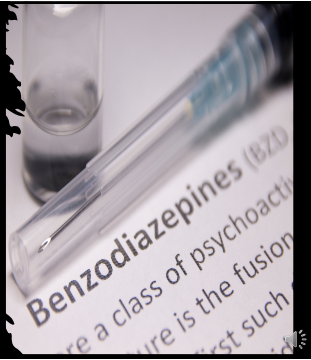
Source: NPS Discovery, <https://www.npsdiscovery.org/reports/trend-reports/>

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Summary

- DBZD expand class of BZD
- Same presentation as traditional benzodiazepines
- Use is inherently illicit
- Benzos considered schedule IV
- May be seen in combo with opioids
- Can cause impairment to cognitive and motor functions



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Reference Articles

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- Manaloto FR, Meneses VM, Mata DC. 2022. A 2-year evaluation of flualprazolam concentration in Orange County drivers: effects on driving and field sobriety test performance. *Journal of Analytical Toxicology*. 1-7.
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- Rohrig TP, Osawa KA, Baird TR, et al. 2021. Driving impairment cases involving etizolam and flubromazolam. *Journal of Analytical Toxicology*. 45: 93-98.
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- Youso KB, Osawa KA, Divine ML, et al. 2022. Driving impairment cases involving flualprazolam. *Journal of Analytical Toxicology*. 1-5.

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