



The importance of testing for **Novel Psychoactive Substances (NPS)**

NPS can be more potent and harder to detect than traditional drugs^{1,2}

NPS are an emerging public health issue

Over the past decade, there has been a significant increase in the consumption of Novel Psychoactive Substances (NPS) and they've been implicated in overdose and mass poisoning events.¹ There are over 1,000 different NPS reported worldwide,³ sold mainly online and from street retailers, which increases opportunity and access. Assessing the presence of NPS in patients is critical for public health and patient management.

What are NPS?

NPS, also known as designer or synthetic drugs, are designed to mimic the effect of controlled substances and/or illicit drugs, while circumventing national and international drug scheduling laws.^{2,3}

Six of the major NPS classes:

- | | |
|------------------------------|-----------------------------|
| 1 Synthetic stimulants | 4 Designer opioids |
| 2 Synthetic cannabinoids | 5 Fentanyl analogs |
| 3 Designer benzodiazepines | 6 Other illicit additives |

NPS have the potential to supplant the traditional drugs of abuse

New compounds are appearing relentlessly on the drug market, information regarding their potential toxicity is scarce, and the number of emergencies related to their use is increasing, due to the fact they:



Can be present in counterfeit drugs



Can cause more severe drug-to-drug interactions



Are often found in combination with other substances

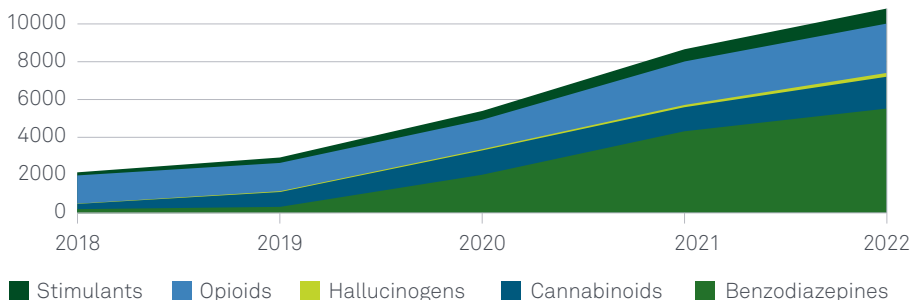


Are often consumed unknowingly

Widespread prevalence of NPS—and how Quest is addressing it

The NPS Discovery Program—an open-access drug early warning system from The Center for Forensic Science Research & Education—**has observed a dramatic increase in NPS in the US.**⁴

Cumulative number of NPS detections since 2018



10K+

NPS detections since 2018

2,200+

NPS detections in 2022

As part of the process to bring a new NPS panel to market, Quest conducted a national NPS surveillance study,⁵ retesting nearly 4,000 specimens and identifying:

13.1%

overall positivity rates of new NPS that were not originally tested for

42%

of all positive samples had more than 1 NPS present

Xylazine is not the only NPS concern

60% Xylazine positivity while other compounds comprised 40% of NPS-positive samples

Traditional testing may miss NPS; definitive testing is critical

New NPS compounds are appearing relentlessly on the drug market. With a composition that varies and changes frequently, they can be challenging to detect using traditional immunoassay or point-of-care testing. Signs and symptoms can vary based on the type of designer drug, and the perceived legality, affordability, and novelty of NPS can put certain individuals at high risk for misuse.

Individuals suitable for testing include those:

- Exhibiting signs or symptoms of NPS poisoning (eg, drug-induced psychosis, especially those identified as high risk)
- With positive presumptive immunoassay results for known benzodiazepines, opioids, and/or fentanyl but negative confirmatory, definitive LC-MS/MS results
- Being considered for opioid therapy or a change in treatment
- Who need advocacy to verify their abstinence
- In recovery from substance use disorder

Quest Diagnostics offers definitive NPS testing

The Drug Monitoring, NPS panel from Quest simultaneously identifies NPS classes using definitive liquid chromatography-tandem mass spectrometry (LC-MS/MS)-based testing and reports out at the class level to help identify misuse.

Ordering information:

Test code	Test name	Specimen type
13086	Drug Monitoring, Novel Psychoactive Substances (NPS), Qualitative, Urine Panel	Standard urine specimen collection

As the list of NPS rapidly evolves, Quest is committed to updating the substances tested with this panel, without changing test codes and requiring EHR updates, based on:



Internal surveillance data from specimens across the country



Reporting from law enforcement, public health organizations, and public safety agencies



Recommendations from research organizations

Definitive class reporting: “positive” or “negative”

A **“positive”** result for a drug class indicates that at least one 1 drug or its metabolite has been definitively detected at, or above, the cutoff value (for that drug or metabolite).

A **“negative”** result for a drug class indicates that no drugs or metabolites were detected at levels above the cutoff value (for those drugs or metabolites).

Report will include table of substances tested.

Report Status: Final

Patient Information		Specimen Information		Client Information	
DOB:	AGE:	Specimen:		Client #:	
Gender:		Requisition:			
Phone:		Collected:			
Patient ID:		Received:			
		Reported:			

Novel Psychoactive Substances Report

Test Ordered	Result	Cutoff	Lab
DRUG MONITOR, NOVEL PSYCHOACTIVE SUBS, QLU			AMD
Designer Benzodiazepines	POSITIVE	10 ng/mL	
Designer Fentanyl Analogs	POSITIVE	5 ng/mL	
Designer Opioids	POSITIVE	10 ng/mL	
Designer Stimulants	POSITIVE	10 ng/mL	
Synthetic Cannabinoids	NEGATIVE	2 ng/mL	
Other Illicit Additives	POSITIVE	10 ng/mL	

NOTES AND COMMENTS

Novel Psychoactive Substances (NPS) testing includes definitive qualitative analysis of the following compounds listed below. For additional information, including updated analytes and individual cutoffs within a category, please refer to <https://www.questdiagnostics.com/faq291> (This link is being provided for informational/educational purposes only.)

Drug Class	Drug Name	
Designer	Aminoclonazepam	Etizolam
Benzodiazepines	Bromazolam	Flualprazolam
	Clonazepam	Flubromazepam
	Desalkylflurazepam	Flubromazolam

Quest Diagnostics for Clinical Drug Monitoring

An industry leader committed to responsible drug testing

Quest is committed to providing the services, results, and insights you need to protect your practice and your patients.



Comprehensive test menu—Prescription drugs used in the treatment of chronic pain, anxiety, depression, and substance use disorder, plus other controlled medications, and illicit drugs/substances of abuse. Diagnostic services for infectious diseases, cardiovascular, women's health, neurology, and oncology



Performance testing—High-sensitivity, low cut-off levels designed to detect drugs at typical dosage levels. Urine, oral fluid, and blood testing options to meet any of your sample requirements



Reporting and data—Optional medMATCH® result interpretation: “inconsistent” when results do not match prescriptions provided by clinician. Quarterly local/practice-level data and analytics utilizing our industry-leading database



Convenience with connectivity—Nationwide logistics services. Efficiency that aligns with your workflow, with connectivity to nearly 850 EHR systems



Service and expert support—Toxicology experts available to answer questions on test selection and results interpretation at 1.877.40.RXTOX (1.877.407.9869)



The right price—In-network for 90% of lives nationwide^a and preferred lab network status with major health plans

^a This is directional data. It is based on 2020 HealthLeaders membership data of private third-party payers at the Managed Care Organization (MCO) level, as well as Quest internal data. Information is believed to be accurate as of January 1, 2020; however, it is subject to change.



To learn more, contact your Quest sales representative or visit [QuestDrugMonitoring.com](https://www.questdiagnostics.com/questdrugmonitoring)

References

1. Iwersen-Bergmann S, Lehmann S, Heinemann A, et al. Mass poisoning with NPS: 2C-E and Bromo-DragonFly. *Int J Legal Med* 2019;133(1):123-129. doi:10.1007/s00414-018-1882-9
2. Peacock A, Bruno R, Gisev N, et al. New psychoactive substances: challenges for drug surveillance, control, and public health responses. *Lancet*. 2019;394(10209):1668-1684. doi:10.1016/s0140-6736(19)32231-7
3. Mohr ALA, Logan BK, Fogarty MF, et al. Reports of adverse events associated with use of Novel Psychoactive Substances, 2017–2020: a review. *J Anal Toxicol*. 2022;46(6):e116-e185. doi:10.1093/jat/bkac023
4. Trend Reports. The Center for Forensic Science Research & Education. Published 2023. Accessed September 9, 2023. <https://www.cfsre.org/nps-discovery/trend-reports>
5. Data on file. National NPS Surveillance Study, Quest Diagnostics; 2023.

Test codes may vary by location. Please contact your local laboratory for more information.

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