Washington State Drug Brief

ADAI ADDICTIONS, DRUG & ALCOHOL INSTITUTE
CENTER FOR COMMUNITY-ENGAGED DRUG EDUCATION, EPIDEMIOLOGY, AND RESEARCH

BTMPS – A new substance found in community drug checking samples

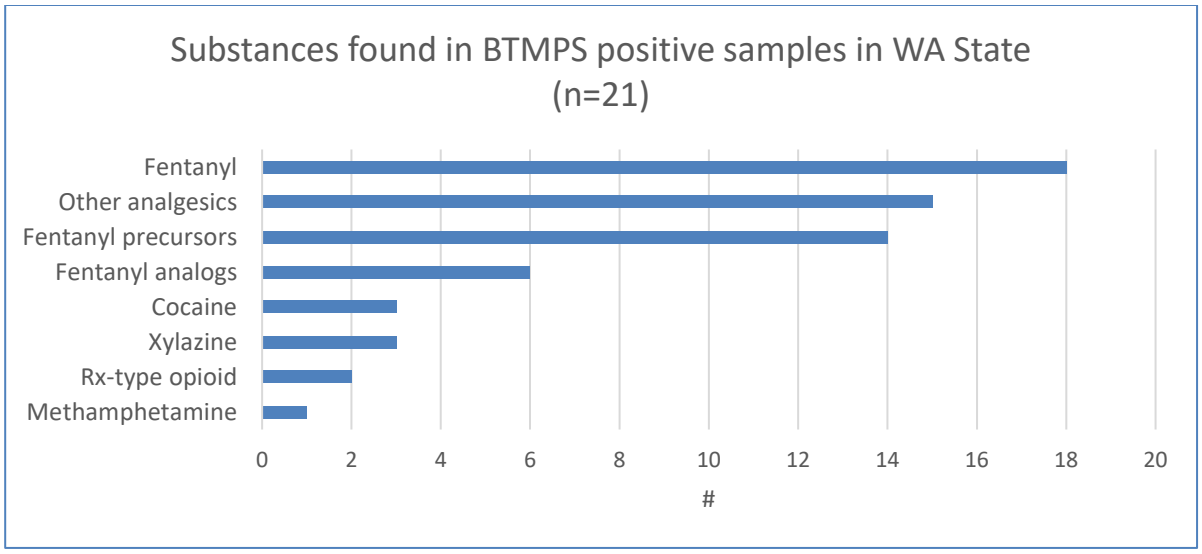
- In June 2024, a new substance, Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate (BTMPS), was detected in the unregulated drug supply nationally in community drug testing programs, most commonly in products sold as and containing fentanyl.
- This Washington State Drug Brief provides preliminary data on the presence of BTMPS in 21 samples based upon WA State's Community Drug Checking Network (CDCN) data[i].
- BTMPS is an industrial chemical with no approved use in humans[ii] [iii] [iv] [v].
- The effects of the substance and why it might be in the drug supply are not well understood.
- Community Drug Checking Network sites are harm reduction/syringe services programs across Washington State that provide onsite drug checking for their participants. These sites can often detect BTMPS onsite.
- If possible, people who use drugs should get them tested regularly.
- People having a serious health issue possibly related to their fentanyl or other drug use should consider seeing a medical provider and share information about BTMPS with them.

Note that these data are not representative of WA State's drug supply overall because the samples are self-selected by participants and come from a small number of locations.

Data on BTMPS in WA State

WA's CDCN has identified 21 drug samples collected between 7/10/2024 and 09/11/2024 where BTMPS was detected in the secondary lab test results. This represents 7% of 307 samples that have been collected at CDCN sites and 12.5% of 160 samples sold as fentanyl that had secondary laboratory testing during this time frame. These samples exclude those suspected to be cross-contaminated per technician report, however cross-contamination may still be present.

Of the samples positive for BTMPS, 20 were "sold as" fentanyl, per person submitting the sample, in powder/rock form, with the 21st sample "sold as" methamphetamine. Other substances were always identified alongside BTMPS, often multiple drugs. The chart shows the number of BTMPS samples that had other drugs involved. Note that these substances may or may not have been in the drug purchased as cross-contamination of drugs can happen before, during, or after use.



For the 20 samples which were sold as fentanyl, most (18) had fentanyl itself, usually with one or more fentanyl precursors. Three samples were also found to contain cocaine (along with one or more fentanyls), three to have xylazine, and two had a prescription-type opioid. For the one sample sold as methamphetamine, only methamphetamine and BTMPS were identified.

BTMPS can be detected by chemical analysis (mass spectrometry) at certain laboratories. Preliminary WA State data indicate that for most samples identified as having BTMPS based upon mass spectrometry, CDCN onsite spectroscopy[1] analysis also identified BTMPS. This means that site based, point of care testing can often identify BTMPS. Note that there is not currently a BTMPS "test strip" available.

Next Steps

The WA CDCN will keep monitoring the drug supply and will work with harm reduction, medical, and public health colleagues to create and share actionable information about BTMPS and other substances that may emerge. It is important to note that harm reduction programs that provide drug checking services, locally and nationally, were the first to identify this compound and share information with people who use drugs and those serving people who use drugs. Most other drug data sources cannot detect BTMPS or do not report it because it is not a controlled substance.

People who use drugs may want to continue to check in regularly with their local harm reduction provider and utilize CDCN services. People having a serious health issue related to their substance use may benefit from seeing a medical provider as soon as possible. If health problems might be related to substance use, consider sharing BTMPS information and the links below with providers.

[1] Spectroscopy conducted at CDCN sites in WA State utilizes Fourier-Transform Infrared Spectroscopy

Resources

1. A research paper released 9/16/2024 provides detailed information about BTMPS based upon community drug checking data from Philadelphia and Los Angeles; information includes consumers' perceptions of the substance, the substance's chemistry and possible reasons it is in the drug supply, and which drugs it is found in combination with[vi].
2. Street Drug Analysis Lab at the University of North Carolina- Overview of BTMPS https://opioiddatalab.ghost.io/mystery-substance-summer-2024/
3. Overview of Community Drug Checking in WA State https://adai.uw.edu/wordpress/wp-content/uploads/THE_DC_Network_Infosheet.pdf
4. Community Drug Checking Data for WA State https://adai.uw.edu/wadata/drugchecking/
5. Syringe services/harm reduction programs in WA State https://doh.wa.gov/you-and-your-family/drug-user-health/syringe-service-programs

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[i] https://adai.uw.edu/WAdata/DrugChecking/

[ii] BTMPS in the forced swim test and elevated plus maze after cocaine discontinuation in rats. Neurosci Lett. 2010;474(2):84-7. Epub 20100310. doi: 10.1016/j.neulet.2010.03.011. PubMed PMID: 20226229.

[iii] Hall BJ, Pearson LS, Terry AV, Jr., Buccafusco JJ. The use-dependent, nicotinic antagonist BTMPS reduces the adverse consequences of morphine self-administration in rats in an abstinence model of drug seeking. Neuropharmacology. 2011;61(4):798-806. Epub 20110530. doi: 10.1016/j.neuropharm.2011.05.026. PubMed PMID: 21651919; PMCID: PMC3130076.

[iv] Papke RL, Craig AG, Heinemann SF. Inhibition of nicotinic acetylcholine receptors by bis (2,2,6,6-tetramethyl- 4-piperidinyl) sebacate (Tinuvin 770), an additive to medical plastics. J Pharmacol Exp Ther. 1994;268(2):718-26. PubMed PMID: 8113983.

[v] Deng Q, He B, Shen M, Ge J, Du B, Zeng L. First Evidence of Hindered Amine Light Stabilizers As Abundant, Ubiquitous, Emerging Pollutants in Dust and Air Particles: A New Concern for Human Health. Environ Sci Technol. 2024;58(2):1349-58. Epub 20240103. doi: 10.1021/acs.est.3c08884. PubMed PMID: 38170899. vi Rapid emergence of UV stabilizer Bis(2,2,6,6-tetramethyl-4-piperidyl) sebacate (BTMPS) in the illicit fentanyl supply across the United States in July-August 2024: Results from drug and drug paraphernalia testing https://www.medrxiv.org/content/10.1101/2024.09.13.24313643v1