

W-Series Drugs – Backgrounder

What are the W-series drugs, and what is W-18?

The W-series are synthetic drugs that were developed in 1982 by chemists at the University of Alberta who were looking to create non-addictive analgesics. The series consists of 32 compounds of varying toxicity; the different compounds are denoted as W-1 through to W-32. The compound W-18 (1-(4-Nitrophenylethyl)piperidylidene-2-(4-chlorophenyl)sulfonamide) was initially reported to be the most toxic, up to 100 times more toxic than fentanyl; however, recent studies have shown that W-18 and its metabolites do not activate opioid receptors and the strength of W-18 in humans has yet to be determined. W-18 is most commonly found mixed within illicit opioids and synthetic opioids, as well as fake prescription pills.

What is W-18 used for?

Although W-18 was initially developed as a potential analgesic drug, there are currently no clinical applications in which W-18 is used. Despite this, it has been found in illegal street drugs, and has also been found in fake oxycodone pills, and in other drug products containing fentanyl.

Why is it dangerous?

There are few published studies on the effects of W-18 in humans, so current knowledge about the drug's effects is limited. Users may still experience some side effects similar to opioids. W-18 has been found to inhibit binding of a protein involved with electrical activity responsible for regulating the heart's beating, which may cause cardio-vascular side effects.

Fatalities and treatment

In 2016 it was reported that Alberta had its first W-18 related death; however, toxicologists were unable to confirm that W-18 was the cause, as there were other drugs ingested by the individual. At this time, there have been no confirmed deaths in Alberta due to the drug W-18 exclusively. Currently, there are no standard screening tests for W-18 and in most cases, a strong suspicion would be needed to carry out specialized analysis. It is possible that W-18 has been associated to other drug-related deaths by being added to similar effecting drugs, such as fentanyl.

Because W-18 is not an opioid, users who have overdosed on it may not respond to naloxone. Only one study, which was conducted by the drug's inventors, examined the ability of naloxone to combat overdoses in W-series drugs. This study conducted in mice focused on only W-3, but was successful in seeing naloxone reverse the effects of W-3. Although there is no known treatment to reverse its effects, administering naloxone to someone who has been suspected of taking W-18 will not harm them further.

W-18 and the law

On June 1st 2016, amendments were made to classify W-18 as a Schedule I drug under the *Controlled Drugs and Substances Act*, and as a Restricted Drug under the *Food and Drug Regulations*. This makes it illegal to produce, possess, import, export, or traffic W-18. Unauthorized possession of a schedule I drug may result in a maximum of six months jail time and a \$1000 fine, if treated as a summary conviction offence. If treated as an indictable offence, the maximum penalty is seven years jail time. Those charged with trafficking also face lifetime imprisonment, with a mandatory one-year jail sentence for trafficking a Schedule I drug under 1 kilogram.

In an attempt to help decrease the availability of illegal drugs, Alberta passed legislation to restrict access to pill press machines. This law came into effect January 2017. Illegally possessing a pill press machine can result in fines ranging from \$50,000 to \$375,000 and possible jail time from six months to one year.

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