

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.

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 cardiovascular side effects.

Fatalities and treatment

Reports have confirmed at least one death in 2016 in Alberta related to W-18. Other deaths may also have been attributed to W-18; however, there are currently no standard screening tests for W-18, and a strong suspicion of ingesting W-18 would be needed to carry out specialized analyses.

There is currently no known treatment to reverse the effects of W-18. Because W-18 is not an opioid, users who have overdosed on it may not respond to naloxone. Only one study (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.

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 kg.

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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