

Carfentanil – Backgrounder

What is carfentanil?

The drug carfentanil (4-carbomethoxyfentanyl) is an analogue of the synthetic opioid fentanyl. It was first synthesized in 1974 by Janssen Pharmaceutical, and was sold under the trade name of Wildnil®. Carfentanil has no distinguishable odor and comes in many forms, including powder, tablets, patches, blotted paper, liquid, and sprays. Carfentanil can be administered orally, nasally, or intravenously. Although known to resemble powdered cocaine or heroin, this drug has also been seized as a pale yellow, pink, or brown powder. Common street names of carfentanil include “drop dead”, “C.50”, “serial killer”, and when mixed in combination with other opioid/opioid-like drugs, “grey death”.

Carfentanil acts as an agonist on the mu-opioid receptors in the central nervous system. This causes effects similar to other opioids, such as analgesia and extreme sedation. It also suppresses the respiratory system, depresses the cough reflex, and constricts pupils.

What is it used for?

Traditionally, carfentanil is used by veterinarians to tranquilize and sedate farm animals, or large wild animals in need of care (e.g., deer and moose). Wildlife rangers also use combinations of drugs (including carfentanil) for sedating wild bison. Because it is so potent, veterinarians who use carfentanil wear protective gear, such as gloves and face shields, when administering the drug. In the United States, veterinarians must have a Drug Enforcement Agency (DEA) number, and be on the approved user’s list.

Why is it so dangerous?

Carfentanil is one of the most toxic opioids currently known, with studies showing it to be 10,000 times more potent than morphine, 4,000 times more potent than heroin, and 100 times more potent than fentanyl. In humans, a dose as small as 1 microgram is enough to elicit a response to the drug and about 20 micrograms, which is less than a grain of salt, is enough to be fatal. Like fentanyl, carfentanil can be absorbed through accidental inhalation of airborne powder, which makes its exposure and handling dangerous.

There are reports of drug dealers adding carfentanil to traditional drugs because it is cheaper, more potent, and easier to obtain than heroin or cocaine. It is unlikely that drug users are aware that they are receiving drugs laced with carfentanil, and may be more likely to overdose when taking their usual dose.

Fatalities and treatment

Between January and November 2017, the number of accidental drug poisoning deaths related to carfentanil in Alberta had risen by 330% (29 in 2016 to 125 in 2017). Edmonton and Calgary zone reported the highest number of carfentanil-related deaths in Alberta, with the majority of new cases occurring within the Calgary zone.

Naloxone has been used to reverse carfentanil overdoses; however, greater than normal doses are required to revive those who have overdosed. In response to the current opioid crisis in Alberta, overdose reversal kits containing naloxone are publicly available at some pharmacies, walk-in clinics, and emergency services.

Carfentanil and the law

Carfentanil is a controlled schedule I drug in Canada. 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 carfentanil, fentanyl, W-18, and other potent opioids, provincial legislation was passed in 2017 to restrict access to pill press machines. 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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