

The Fatality of Fentanyl

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In the past two decades drug overdose deaths have been steadily on the rise resulting in overdose deaths to be the leading cause of injury-related death in the United States. One of the most common drugs leading to overdose are opioids, specifically fentanyl. In the year 2022 there were 107,375 reported deaths due to drug overdose or poisoning and approximately 67% of those deaths involved fentanyl.¹ Forensic investigative offices typically have several drug overdose deaths per week. The manner of death from a drug overdose can be categorized as either suicide, homicide, or accident depending on the nature of the scene and circumstances. Fentanyl is a relatively newer drug that when combined with a high mortality rate and ease of availability makes it a huge threat to the lives of many individuals.



The word fentanyl is heard or read every day whether in the news, papers, social media, or simple conversation. Even though many individuals have heard the word “fentanyl” most might still not know exactly what it is. Fentanyl by definition is a powerful synthetic opioid similar to morphine.² However, in contrast to morphine fentanyl is 50 to 100 times more potent and can be lethal in just a 2 mg dose depending on body type.¹ Opioids are a type of drug found within the opium poppy plant which some opioids are made from directly, however fentanyl is synthetically made in labs. Fentanyl is usually heard referring to illegal drug use, but it is a prescription drug used to treat patients with severe pain usually after surgery.² The legal prescription use of fentanyl is used in the form of a shot, patches, or lozenges. The illegal use of fentanyl is used as a powder, liquid, or pill form. The illegal form of fentanyl could also be found mixed with other common drugs whether the user realizes it or not. Common drugs this can be mixed with are cocaine, heroin, methamphetamine, and MDMA.² Fentanyl is a powerful synthetic opioid that when used in small amount can lead to overdose and death.

Fentanyl produces many effects on the body similar to other opioids. It can cause relaxation, euphoria, pain relief, sedation, confusion, drowsiness, dizziness, nausea/vomiting, urinary retention, pupillary constriction, and respiratory depression.¹ Fentanyl produces these effects by binding to opioid receptors found within areas of the brain that control pain and emotion.² An overdose of a drug can occur when producing severe adverse effects and life-threatening symptoms. During an overdose on fentanyl the person’s breathing will significantly slow or stop which produces a decrease

in the amount of oxygen going to the brain.² The condition of inadequate oxygen to the brain is referred to as hypoxia which can lead to permanent brain damage. The typical autopsy findings from a drug overdose appear in a triad of heavy congested lungs, tonsillar herniation within the brain, and an atrophied boggy brain. In summary drug overdose by fentanyl occurs by affecting the respiratory system causing decreased breathing and further causing hypoxia of the brain which can result in death.

The fentanyl epidemic in the United States is currently on the rise and causing an unprecedented number of drug overdoses. These numbers will continue to rise among illicit drug users and the impoverished communities. Fentanyl is a synthetic opioid similar to morphine, but with a much more potent effect. The dangers of fentanyl are due to the ability to overdose on a minuscule amount and in some cases the person may not even be aware of its presence. In the circumstance of an overdose fentanyl first causes adverse effects within the respiratory system which leads to loss of function and damage within the brain. In the year of 2022 over 4 million lethal doses were seized in the United States.¹ If the fentanyl epidemic is not addressed and dealt with the number of overdose deaths will continue to rise each year in the United States.

Citations

1. "Fentanyl Awareness." DEA, <https://www.dea.gov/fentanylawareness>.
2. "Fentanyl Drugfacts." National Institutes of Health, U.S. Department of Health and Human Services, 3 Feb. 2023, <https://nida.nih.gov/publications/drugfacts/fentanyl>.

