National Institute on Drug Abuse
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Fentanyl

What is fentanyl?

Fentanyl is a powerful synthetic opioid analgesic that is similar to morphine but is 50 to 100 times more potent.[1,2] It is a schedule II prescription drug,[3] and it is typically used to treat patients with severe pain or to manage pain after surgery.[4] It is also sometimes used to treat patients with chronic pain who are physically tolerant to other opioids.[5] In its prescription form, fentanyl is known by such names as Actiq®, Duragesic®, and Sublimaze®.[5,6] Street names for fentanyl or for fentanyl-laced heroin include Apache, China Girl, China White, Dance Fever, Friend, Goodfella, Jackpot, Murder 8, TNT, and Tango and Cash.

How do people use fentanyl?

When prescribed by a physician, fentanyl is often administered via injection, transdermal patch, or in lozenges.[6] However, the fentanyl and fentanyl analogs associated with recent overdoses are produced in clandestine laboratories.[7] This non-pharmaceutical fentanyl is sold in the following forms: as a powder; spiked on blotter paper; mixed with or substituted for heroin; or as tablets that mimic other, less potent opioids.[8] People can swallow, snort, or inject fentanyl, or they can put blotter paper in their mouths so that fentanyl is absorbed through the mucous membrane.

How does fentanyl affect the brain?

Like heroin, morphine, and other opioid drugs, fentanyl works by binding to the body's opioid receptors, which are found in areas of the brain that control pain and emotions.[9] When opioid drugs bind to these receptors, they can drive up dopamine levels in the brain's reward areas, producing a state of euphoria and relaxation.[9] Fentanyl's effects resemble those of heroin and include euphoria, drowsiness, nausea, confusion, constipation, sedation, tolerance, addiction, respiratory depression and arrest, unconsciousness, coma, and death.

Why is fentanyl dangerous?

Opioid receptors are also found in the areas of the brain that control breathing rate. High doses of opioids, especially potent opioids such as fentanyl, can cause breathing to stop completely, which can lead to death.[9] The high potency of fentanyl greatly increases risk of overdose, especially if a person who uses drugs is unaware that a powder or pill contains fentanyl.[6,10] Fentanyl sold on the street can be mixed with heroin or cocaine, which markedly amplifies its potency and potential dangers.[11]

The medication naloxone is an opioid receptor antagonist that reverses opioid overdose and restores normal respiration.[12] Overdoses of fentanyl should be treated immediately with naloxone and may require higher doses to successfully reverse the overdose.[10,13]

Points to Remember

- Fentanyl is a powerful synthetic opioid analgesic that is similar to morphine but is 50 to 100 times more potent.
- Non-pharmaceutical fentanyl is sold in the following forms: as a powder; spiked on blotter paper; mixed with or substituted for heroin; or as tablets that mimic other, less potent opioids.
- Fentanyl works by binding to the body's opioid receptors, which are found in areas of the brain that control pain and emotions. Its effects include euphoria, drowsiness, nausea, confusion, constipation, sedation, tolerance, addiction, respiratory depression and arrest, unconsciousness, coma, and death.
- The high potency of fentanyl greatly increases risk of overdose, especially if a person who uses drugs is unaware that a powder or pill contains fentanyl.

Learn More

For more information about heroin, visit:
www.drugabuse.gov/drugs-abuse/heroin
www.drugabuse.gov/drugs-abuse/commonly-abused-drugs-charts

For more information about the link between prescription pain relievers and heroin, visit:
www.drugabuse.gov/publications/research-reports/heroin

For more information about the opioid reversal drug naloxone, visit:
www.drugabuse.gov/drugs-abuse/opioids/naloxone

For more information about fentanyl as an emerging trend, visit:
http://pub.lucidpress.com/NDEWSFentanyl/
www.ndews.org

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