

An aerial photograph of a vast, green valley. A winding river flows through the center of the valley, surrounded by lush green grass. In the background, a range of mountains stretches across the horizon under a dramatic, cloudy sky. The text "What is Opioid Use Disorder" is written in a large, white, serif font across the middle of the image, with "An Informational Perspective" written in a smaller, white, serif font below it.

What is Opioid Use Disorder

An Informational Perspective

- Opioids are natural or synthetic chemicals that interact with opioid receptors on the nerve cells in the body and brain and reduce feelings of pain.
- They are a class of drugs that include prescription pain relievers, synthetic opioids and heroin.
- Prescription opioids are meant to be used to treat acute pain (such as recovering from injury or post-surgery), chronic pain, active-phase cancer treatment, palliative care and end-of-life care.
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- Many people rely on prescription opioids to help manage their conditions under the care of a physician.

Opioids reduce the perception of pain, but can also cause drowsiness, mental confusion, euphoria, nausea and severe or chronic constipation.

At high doses they depress respiration.

Prescription pain relievers include:
oxycodone (OxyContin®) hydrocodone (Vicodin®),
codeine, morphine, and others. Synthetic opioids include
fentanyl, methadone, pethidine, tramadol and carfentanil.

- Fentanyl is 50 times more potent than heroin and 100 times more potent than morphine.
- Carfentanil, an extremely potent fentanyl analog (a compound having a similar chemical structure similar to) is estimated to be 10,000 times more potent than morphine.
- Illegally manufactured fentanyl is available in counterfeit pills or mixed with heroin and/or cocaine.
- According to the Drug Enforcement Administration (2018), "Fentanyl is the most prevalent and the most significant synthetic opioid threat to the United States".
- Overdoses related to use of synthetic marijuana laced with fentanyl have also been reported recently.

- The neurobiology of dependence and addiction can be invaluable to the clinician.
- The brain's chemical processes can provide insight about patient behaviors and problems, help define realistic expectations, and clarify the rationales for treatment methods and goals.
- Patients who are informed about the chemical/brain origins of addiction can benefit from understanding that their illness has a biological basis and does not mean they are “bad” people.

- One of the brain circuits that is activated by opioids is the mesolimbic (midbrain) reward system.
- This system generates signals in a part of the brain called the ventral tegmental area (VTA).
- This signals release of the chemical dopamine in another part of the brain, the nucleus accumbens. Dopamine causes a feeling of pleasure and our brain creates a lasting record/memory associating these good feelings with the circumstances and environment in which they occur.
- These memories/conditioned associations lead to the craving for drugs when the abuser re-encounters those same persons, places, or things that were around when they last used opioids. So, these "associations" also drive abusers to seek out more drugs in spite of many obstacles.

- Opioid tolerance occurs because the brain cells that have opioid receptors on them gradually become less responsive to opioid stimulation.
- More opioid is needed to stimulate the VTA brain cells of the mesolimbic reward system to release the same amount of Dopamine in the Nucleus Accumbens – More is needed to get the same effect as before.
- Opioid dependence and the worst opioid withdrawal symptoms come from changes in another important brain system, at the base of the brain—the locus ceruleus (LC).
- Neurons in the LC produce a chemical, noradrenaline (NA), and distribute it to other parts of the brain where it stimulates wakefulness, breathing, blood pressure, general alertness, etc.
- When opioid molecules link to receptors on brain cells in the LC, they suppress the neurons' release of NA = drowsiness, slowed respiration, low blood pressure (familiar effects of opioid “intoxication”).

- Repeated exposure to opioids causes the LC neurons to adjust by increasing their level of activity.
- When opioids are not present to suppress the LC brain cells' increased activity = the neurons release excessive amounts of Noradrenaline = **jitters, anxiety, muscle cramps, and acute physical sickness.**

Opioid Use Disorder & Symptoms

Opioid use disorder is a pattern of opioid use causing **significant** impairment or distress.

Symptoms of Opioid Use Disorder include:

- A strong desire to use opioids
- trouble reducing use
- An increased tolerance to opioids
- A failure to fulfill obligations
- Withdrawal symptoms when making an effort to quit using

- Opioids produce high levels of positive reinforcement, psychologically and physically.
- Opioids change brain chemistry, increasing the odds that people will continue using them despite negative resulting consequences.
- Opioid use disorder is a chronic lifelong disorder, with serious potential consequences including disability, relapses, and death

The DSM V describes opioid use disorder as a problematic pattern of opioid use leading to problems or distress, with at least two of the following occurring within a 12-month period:

1. Taking larger amounts or taking drugs over a longer period than intended.
2. Persistent desire or unsuccessful efforts to cut down or control opioid use.
3. Spending a great deal of time obtaining or using the opioid or recovering from its effects.
4. Craving, or a strong desire or urge to use opioids.
5. Problems fulfilling obligations at work, school or home.
6. Continued opioid use despite having recurring social or interpersonal problems.

1. Giving up or reducing activities because of opioid use.
2. Using opioids in physically hazardous situations.
3. Continued opioid use despite ongoing physical or psychological problem likely to have been caused or worsened by opioids.
4. Tolerance (i.e., need for increased amounts or diminished effect with continued use of the same amount)
5. Experiencing withdrawal (opioid withdrawal syndrome) or taking opioids (or a closely related substance) to relieve or avoid withdrawal symptoms.

In 2017, more than 72,000 Americans died from drug overdoses, including illicit drugs and prescription opioids = a 200% over just ten years.

The greatest increase involved synthetic opioids, primarily **fentanyl** and fentanyl analogs (similar compounds), with nearly 30,000 overdose deaths, according to the Centers for Disease Control and Prevention (CDC, 2017).

Heroin was involved in nearly 16,000 deaths and prescription painkillers were involved in nearly 15,000 deaths.

From 2002 to 2017, there was a 22-times increase in the total number of deaths involving fentanyl and other synthetic opioids (not including methadone) and more than a 7-times increase in the number of deaths involving heroin.

Emergency department visits for suspected opioid overdoses rose by 30 percent in the U.S. from July 2016 to Sept. 2017.

The opioid crisis was declared a nationwide Public Health Emergency on Oct. 27, 2017.

While opioid use disorder has several unique features:

Opioids can lead to physical dependence within a short time, as little as 4-8 weeks.

In chronic users, stopping the use of opioids leads to severe symptoms = generalized pain, chills, cramps, diarrhea, dilated pupils, restlessness, anxiety, nausea, vomiting, insomnia, and very intense cravings.

Because these symptoms are severe it creates significant motivation to continue using opioids to prevent withdrawal.

As with other addictions, both genetic factors and environmental factors, such as ease of access, contribute to the risk of opioid use disorder.

Access to prescription opioids and to heroin have contributed to the current opioid epidemic.

According to the American Medical Association, an estimated 3 to 19 percent of people who take prescription pain medications develop an addiction to them.

People misusing opioids may try to switch from prescription pain killers to heroin if it is easier to obtain.

About 45 percent of people who use heroin started with an addiction to prescription opioids (AMA, 2017).

More than half of people misusing opioid medications report:

- Obtaining them for free or stealing them from a friend or family member
- Going to multiple doctors to get additional prescriptions
- Filling prescriptions at different pharmacies so that no one will notice how many pills they get each month

[U.S. Department of Health & Human Services](#)

SAMHSA Data on AIAN populations/Substance and Opioid Use:

2016 NSDUH: Race and Ethnicity Summary Sheets

1. According to the 2016 NSDUH, 6.3 percent (87,000) of **AIAN aged 18 and older** reported **heavy alcohol use in the past month**. This was similar to the national average (6.6 percent).
2. According to the 2016 NSDUH, 19.7 percent (273,000) of **AIAN aged 18 and older** reported using **marijuana in the past year**. This was higher than the national average (14.1 percent).
3. According to the 2016 NSDUH, 14.0 percent (195,000) of **AIAN aged 18 and older reported** using **marijuana in the past month**. This was higher than the national average (9.1 percent).
4. According to the 2016 NSDUH, 0.3 percent (5,000) of **AIAN aged 12 and older** reported using **heroin in the past year**.
5. According to the 2016 NSDUH, 5.2 percent (72,000) of **AIAN aged 18 and older** reported **misusing a prescription drug in the past year**. This was similar to the national average (7.1 percent).

1. According to the 2016 NSDUH, 4.0 percent (56,000) of **AIAN aged 18 and older** reported **misusing a prescription pain reliever in the past year**. This was similar to the national average (4.3 percent).
2. According to the 2016 NSDUH, 4.1 percent (63,000) of **AIAN aged 12 and older** reported **opioid misuse in the past year**. This was similar to the national average (4.4 percent).
3. According to the 2016 NSDUH, 1.1 percent (16,000) of **AIAN aged 18 and older** reported using **methamphetamines in the past year**. This was similar to the national average (0.6 percent).

Substance Use Disorders

1. According to the 2016 NSDUH, 12.2 percent (170,000) of **AIAN aged 18 and older** reported having a **substance use disorder in the past year**. This was higher than the national average (7.8 percent).
2. According to the 2016 NSDUH, 3.9 percent (55,000) of **AIAN aged 18 and older** reported having an **illicit drug use disorder in the past year**. This was higher than the national average (2.7 percent).

Dedicated to All Challenged by OUD, those Who Care and Those No Longer Here: AG (My Son-In-Law's Mother) CH (A Dear Friend) BA (A Dear Boneheaded Cousin) and So So Many More



References

1. Centers for Disease Control and Prevention. [WONDER](#) and [Overdose statistics](#)
2. Sharma, B, et al. Opioid Use Disorders. Child Adolesc Psychiatr Clin N Am. 2016 Jul; 25(3): 473–487. [https:// www.ncbi.nlm.nih.gov/ pmc/ articles/PMC4920977/](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4920977/)
3. AMA Alliance. [Prescription Opioid Epidemic: Know the Facts](#)
4. American Psychiatric Association. <https://www.psychiatry.org/patients-families/addiction/opioid-use-disorder/opioid-use-disorder>
5. Centers for Disease Control and Prevention. [Synthetic Opioid Overdose Data](#)
6. Substance Abuse and Mental Health Services Administration. 2018. [Facing Addiction in America: The Surgeon General’s Spotlight on Opioids](#)

Resources

SAMHSA/HHS

- [Rx Pain Medications KNOW THE OPTIONS • GET THE FACTS](#)
- [Treatments for Substance Use Disorders](#)
- [Finding Quality Treatment for Substance Use Disorders](#)
- [Treatment locator or 800-662-4358](#)
- [Facing Addiction in America: The Surgeon General's Spotlight on Opioids](#)

National Institute on Drug Abuse

- [Effective Treatments for Opioid Addiction](#)
- [Medications to Treat Opioid Use Disorder](#)
- [Prescription Pain Medications: Opioids Guide for Teens](#)

Centers for Disease Control and Prevention

- [Opioid Overdose, Information for Patients](#)
- [Non Opioid Treatments for Chronic Pain](#)
- [Find Treatment for Opioid Use Disorder](#)

Drug Enforcement Administration

- [Drugs of Abuse: A DEA Resource Guide](#)

APA

- [APA advocacy on opioid crisis](#)
- [Joint Principles on Opioid Crisis: Call for Comprehensive, Public Health Approach](#)