

The Slippery Slope of Relieving Pain: Be Wary of Opioid Drugs



Pain is the most common reason people seek medical treatment. Patients often want the most potent painkillers—opioids, also referred to as narcotics.



If you have been injured on the job and have developed chronic pain, you might seek relief with narcotic medications. Narcotics are potent pain relievers. But there are many reasons why you should try safer medications before taking narcotics.

Prescription drug abuse, caused mainly by misuse of opioid painkillers, is the fastest-growing drug problem in the United States. Since 2003, more overdose deaths have involved opioid analgesics than heroin and cocaine combined. This epidemic parallels the huge increase in the number of prescriptions written for opioid medications over the past decade.

What Are Opiates?

Pure opium is a mixture of alkaloids extracted from the sap of the poppy plant's unripe seedpods. Opioid painkillers include a wide variety of compounds, divided into classes based on whether they are straight extracts from the opium poppy, extracts that have been chemically modified, or completely synthetic compounds that have a similar mechanism of action but are unrelated to opium.*

Heroin, codeine, and morphine are natural derivatives of these alkaloids. Their effects, and the abuse potential of the various compounds, differ. Opiates can be *short acting* (e.g., morphine sulfate), *extended release* (short-acting formulations that are absorbed slowly so they can be taken at longer intervals), or *long acting* (e.g., methadone).

How Do These Drugs Work?

These drugs are easily absorbed through the gastrointestinal tract and attach to one or more of the four types of opiate receptors in the brain. When receptors are stimulated, they reduce pain without eliminating its cause. They produce sedation, euphoria, and respiratory depression. And they also slow gut function, leading to constipation.

Peak effects generally are reached in 10 minutes if taken intravenously, 30–45 minutes with an intramuscular injection, and 90 minutes by mouth.

* Extracts of the poppy include **morphine sulfate** (Contin®, Roxinal®, and Avinza®) and **codeine**, sold as Tylenol 3®, Tylenol 4®, Fiorinal #3®, and Fioricet #3®. Semisynthetics include **hydrocodone** (Vicodin®, Vicodin ES®, Vicoprofen®, Lortab®, Lorcet®, Norco®), **hydromorphone** (Dilaudid®), **oxycodone** (Percocet®, Roxicet®, Endocet®, Percodan®, OxyContin®), and **oxymorphone** (Opana®, Opane ER®). Synthetics include **methadone** (Dolophine®, Methadose®), **meperidine** (Demerol®), **fentanyl** (Alfenta®, Sufenta®, Ultiva®, Actiq®), and **loperamide** (Imodium®).



■ *How Opiates Kill*

These medications are dangerous because the difference between the amount needed to feel their effects and the amount needed to kill a person is small and unpredictable.

Respiratory depression is the chief hazard associated with opiate painkillers. Other especially problematic drugs—in particular, alcohol, tranquilizers, and barbiturate sedatives found in sleeping pills and anti-anxiety medications—enhance the respiratory depression caused by opiates. So if someone is drinking or taking tranquilizers and takes usual doses of opiates, he or she may pass out, stop breathing, and die.

To further complicate matters, opiates are broken down in the body to harmless compounds over different time periods. Mixing extended-release and long-acting opiates can be deadly. Also, the pain-relieving and euphoria-inducing aspect of opiates may wear off before the tendency to depress breathing does.

This is especially true of methadone. Methadone's peak respiratory depressant effects typically occur later, and last longer, than its peak painkilling effects. Overdoses often occur when someone takes methadone for the first time or the dose is increased. What is worse, doctors prescribing various opiate medications may not understand how different opiate brands are metabolized, how different drugs cross-react, and how this affects overdose potential.

■ *Tolerance Brings Further Peril*

Another serious problem with opiates is *tolerance*, the ability to resist the action of a drug. Regular users of opiates and other drugs (such as alcohol) develop tolerance. In effect, a person who is a chronic opiate user feels less of its effect (and his or her body can tolerate more of the drug) than an initiate user feels. A common overdose death scenario among opiate addicts is when, because of tolerance, they increase the dose to get a rush, not realizing they are not tolerant to the respiratory depression effects.

Tolerance may not be the same for different opiates. Incomplete cross-tolerance is of particular concern for patients tolerant to one opiate who are being converted to treatment with methadone.

There is an emerging body of evidence that opiates, when taken for long periods of time, may actually *increase* the body's perception of pain. This may lead to a feedback loop of need for higher and higher doses, more and more risk of overdose, and increasing pain.

■ *What Are the Signs of Overdose?*

Signs of overdose include slowed, obstructed, or stopped breathing; sleepiness progressing to stupor or coma; weak, floppy muscles; cold and clammy skin; pinpoint pupils; slow heart rate; dangerously low blood pressure; and death. Less commonly, sudden lung injury, uncontrollable seizures, and heart damage can occur.



■ *Who Is Most at Risk for Overdose?*

The two main populations in the United States at risk for prescription drug overdose are the approximately 9 million people who report long-term medical use of opioids and the roughly 5 million who report *nonmedical use* (use without a prescription or medical need) in the past month. Those at particularly high risk include persons taking opiate medications for the first time; those taking multiple forms of opiates or who mix them with alcohol, barbiturates, or tranquilizers; and those with sleep apnea, heart failure, obesity, severe asthma, or respiratory conditions.

An estimated 80 percent of those prescribed opioids are prescribed low doses by a single practitioner. These patients make up about 20 percent of all prescription drug overdoses. Patients in this group often suffer from chronic pain (from such diseases as arthritis, cancer, chronic back pain, or fibromyalgia). They may also be older Americans, who often have more than one health condition. These persons may need pain medication plus other medications that can interact with opiates to cause overdose.

Another 10 percent of patients are prescribed high doses of opioids by single prescribers and account for an estimated 40 percent of prescription opioid overdoses.

The remaining 10 percent of persons at high overdose risk are those who seek care from multiple doctors and are prescribed high daily doses. They account for another 40 percent of opioid overdoses. They may also get these medications from friends or relatives, or they may buy them on the street.

More than three-quarters of nonmedical users report getting drugs prescribed to someone else. Among persons who have died of opioid overdoses, a significant proportion did not have a prescription in their records for the opioid that killed them.

■ *Why Are Opiates Prescribed If They Are So Dangerous?*

Opioid pain medications are the most powerful pain relievers available to ease severe pain. Too often, though, they are prescribed when safer medications would suffice, and they are prescribed in larger amounts than needed.

So, think twice about taking them; if you need to take them, do so with caution. Using someone else's medication could cost you your life.

Dispose of unused pills safely.

Resources

- Baker, D. D., & Jenkins, A. J. (2008). A comparison of methadone, oxycodone, and hydrocodone related deaths in Northeast Ohio. *Journal of Analytical Toxicology*, 32(2), 165–171.
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Useful Web Site

U.S. Food and Drug Administration. (2011). How to dispose of unused medicines. <http://www.fda.gov/downloads/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/UnderstandingOver-the-CounterMedicines/ucm107163.pdf>

This fact sheet was developed with funding from the Substance Abuse and Mental Health Services Administration (SAMHSA) through a contract (IDIQ Task Order No. HHSS283200700012I) to the Pacific Institute for Research and Evaluation (PIRE).



The Substance Abuse and Mental Health Services Administration supports the Preventing Prescription Abuse in the Workplace Technical Assistance Center. For more information, contact PAW-TA@PIRE.org. To join the PAW Listserv, visit <http://paw.dsgonline.com>, or simply scan the QR Code to the right.

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