

## CHRONIC PAIN AND OPIOID THERAPY

Effective management of chronic pain often requires a step-wise, coordinated and integrated trial of different treatment options, a team of health care providers and social support from family and friends. Health care providers may start with behavioral and non-pharmacological interventions (e.g., hot/cold therapy, physical therapy, relaxation techniques) when devising pain treatment plans. Strong prescription pain relievers like opioid analgesics may be recommended as one of the treatment options to help reduce moderate to severe pain so that function and quality of life can be improved. According to the American Pain Society, the American Academy of Pain Management and the American Geriatrics Society, individuals with severe or functionally limiting pain that is not sufficiently relieved by other means should be considered for a trial of opioid therapy.

### Key Issues

- An estimated 116 million Americans suffer with chronic pain.<sup>1</sup> The consequences of unmanaged persistent pain are devastating for individuals and their families. Sadly, many people with chronic, debilitating pain are made to feel as though the pain is “just in their head.”
- For some people, opioids are a necessary and integral part of a comprehensive pain management plan to help relieve pain, restore functioning and improve quality of life.<sup>2,3</sup>
- Unfortunately, access to these medications may be hindered by unduly restrictive state policies, persisting social stigma surrounding their use, as well as therapeutic switching and/or step therapies imposed by insurance companies. For more information about policies that directly or unintentionally affect access to pain care, read the *State-Based Pain Care Policies Topic Brief*.
- Unless a person with pain has a past or current personal or family history of substance abuse, the likelihood of addiction is low when opioids are appropriately prescribed, taken as directed and monitored by a responsible and knowledgeable health care provider. Although more well-controlled studies are needed, current evidence indicates that addiction prevalence in pain patients may be no different from prevalence of addiction in the general U.S. population.<sup>4,5</sup>
- Rising rates of non-medical use of prescription medications and emergency room admissions related to prescription drug abuse, as well as an increase in the theft and illegal resale of prescription drugs, indicate that drug diversion is a growing problem nationwide.<sup>6</sup> The main source of drug diversion is from theft by family members, friends and workers in the home or from the sharing and selling of medications though often with good intentions.<sup>7</sup>
- Diverse players (e.g., lawmakers, educators, health care providers, the pharmaceutical industry, caregivers) must come together to address the dual public health crises of the undertreatment of pain and rising prescription drug abuse.<sup>8</sup>
- Alleviating pain remains a medical imperative — one that must be balanced with measures to address rising non-medical use of prescription drugs and to protect the public health.<sup>8</sup>

### Opioids 101

Opioids include morphine, oxycodone, oxymorphone, hydrocodone, hydromorphone, methadone, codeine and fentanyl. Opioids are classified in several ways, most commonly based on their origin and duration of effects.<sup>9</sup>

#### Common classifications for opioids<sup>9,10</sup>

<b>SOURCE</b>	<b>Natural or semisynthetic:</b> Contained in or slightly modified (semisynthetic) from chemicals found in poppy resin	Synthetic: Synthesized in the laboratory
<b>DURATION OF RESPONSE</b>	<b>Short-acting:</b> Provide quick-acting pain relief and are used primarily as “rescue medication,” as in acute pain	<b>Long-acting:</b> Provide longer duration of pain relief and are most often used for stable, chronic pain

One of the advantages of opioids is that they can be given in so many different ways. For example, they can be administered by mouth, oral mucosal or sublingual delivery systems, rectal suppository, intravenous injection (IV), subcutaneously (under the skin), transdermally (in the form of a patch) or into a region around the spinal cord. Patches, IV injections and infusions are very important for patients who cannot swallow, or whose GI tracts are not working normally.<sup>11</sup>

Opioids are believed to work by binding to specific proteins (opioid receptors), which are found in specialized pain-controlling regions of the brain and spinal cord. When these compounds attach to certain opioid receptors, the electrical and chemical signals in these regions are altered, ultimately reducing pain.<sup>9</sup>

Because of their long history of use, the clinical profile of opioids has been very well characterized. Multiple clinical studies have shown that long-acting opioids, in particular, are effective in improving:

- Daily function
- Psychological health
- Overall health-related quality of life for people with chronic pain<sup>12</sup>

However, some types of pain, such as pain caused by nerve compression or destruction, do not appear to be relieved by opioids.<sup>10</sup>

#### Adverse Effects

Side effects of opioids result primarily from activation of opioid receptors outside and within the nervous system. Activation of opioid receptors in the gut, for example, may cause constipation,

nausea and vomiting, and other gastrointestinal effects. Tolerance to nausea and vomiting usually develops within the first few days or weeks of therapy, but some people are intolerant to opioids and experience severe adverse side effects.<sup>10</sup> Other side effects include drowsiness, mental clouding and, in some people, euphoria.<sup>9</sup> Recent research shows that genetic variations may influence opioid metabolism.

Depending on the amount taken, opioids can depress breathing. However, this effect usually is not present after someone has taken opioids over time. The risk of sedation and respiratory depression is heightened when opioids are taken with other sedating medications (e.g., antihistamines, benzodiazepines), reinforcing the need to carefully monitor individuals who are taking such combinations.

#### Careful Monitoring and Open Communication

People taking opioids must be carefully selected and monitored by a knowledgeable and responsible prescriber. People with pain should speak openly with their health care provider about noticeable improvements in functioning, as well as side effects and other concerns (e.g., constipation, fears of addiction).

The American Pain Foundation's *Targeting Chronic Pain* materials help facilitate open dialogue between people who live with pain and their health care team, and give prescribers tools for selecting, monitoring and following their patients. To access these resources, visit [www.painfoundation.org](http://www.painfoundation.org) and click on Publications under the Learn about Pain tab.

## The Four "A's"

**The Four "A's"** of pain management are used by clinicians to measure key treatment outcomes — pain relief, psychosocial functioning, side effects and addiction-related outcomes.

**Analgesia** – Is the pain relief clinically significant? Is there a reduction in the pain score (0-10)?

**Activity levels** – What is the patient's level of physical and psychosocial functioning? Has treatment made an improvement?

**Adverse effects** – Is the patient experiencing side effects from pain relievers? If so, are they tolerable?

**Aberrant behaviors** – Are there any behaviors of concern such as early refills or lost medication? Does the patient show signs of misuse, abuse or addiction? What is the plan of action?

Source: Passik & Weinreb, 1998; Passik & Portenoy, 1998

**Dual Public Health Crises:  
Balancing Medical Imperative to  
Relieve Suffering and Protect  
Public Safety**

Pain affects more Americans than diabetes, heart disease and cancer combined, and it is one of the leading causes of disability in the United States. Recognition of pain as a growing public health crisis has led to the establishment of specialized pain clinics, treatment guidelines for certain types of pain, as well as greater use of treatment strategies to effectively alleviate pain and improve functioning, including prescription pain medicines.

As the therapeutic use of opioids has increased to appropriately address pain, there has been a simultaneous and dramatic rise in non-medical use of prescription drugs.<sup>13</sup> When misused — that is, taken by someone other than the person for whom the medication was prescribed, or taken in a manner or dosage other than what was prescribed — prescription medications can produce serious adverse health effects and can lead to addiction, overdose and even death.

People who abuse opioids typically do so for the euphoric effects (e.g., the “high”); however, most abusers are **not** patients who take opioids to manage pain.<sup>14</sup> Rather, they are often people within the social network of the person who possesses a lawful prescription. In fact, 71 percent of people abusing prescription pain relievers received them from a friend or family member without a prescription.<sup>7</sup> Prescription pain relievers are frequently illegally stolen from medicine cabinets, purchased or shared in schools, or simply given away.

**Picture of Prescription Drug Abuse in America**

- In 2009, 16 million Americans 12 years of age and older had taken a prescription pain reliever, tranquilizer, stimulant or sedative for non-medical purposes at least once in the previous year.<sup>14</sup>
- The rate of non-medical use of medications has risen among teenagers. In fact, prescription drugs are now the second most abused category of drugs behind marijuana.<sup>15</sup>
- In 2007, 93 percent of unintentional poisoning deaths in the U.S. were caused by drugs. Opioid pain medications, such as methadone, hydrocodone, or oxycodone, were most commonly involved, followed by cocaine and heroin.<sup>16</sup>
- Most people who use prescription drugs nonmedically (7 out of 10) get them from friends or family; very few obtain them from drug dealers or the Internet.<sup>14</sup>

**Nonmedical use** includes misuse, abuse or otherwise not taking a drug as prescribed.

The growing prevalence of prescription drug abuse not only threatens the lives of abusers; concerns about misuse, abuse and diversion may also jeopardize effective pain management by impeding appropriate access to opioids for legitimate medical need. Concern about scrutiny by regulators or law enforcement, and specific action by some agencies, has had a “chilling effect” on the willingness of some doctors, nurse practitioners and physician assistants to prescribe opioids.<sup>8,17</sup> Moreover, high profile reports of drug abuse, diversion and addiction, or of legal actions taken against prescribers have helped perpetuate a negative — and

often false — picture of chronic pain management.<sup>8</sup> Over time, these reports overshadow the stories of people with pain — those whose lives have been shattered by unrelenting pain — who get needed pain relief from these medications. Understanding the difference between tolerance, physical dependence, abuse and addiction is also critical to telling the story. According to medical experts, use of the term “narcotic” in news reports may further reinforce the myths and misconceptions of this class of drugs, given the negative connotation.<sup>8</sup>

*“Clinicians continue to approach opioid prescribing with a spectrum of highly diverse practices, from complete avoidance to alacrity. Both extremes ignore either patient-specific indications and context for opioid therapy or the risks associated with such therapy. Idiosyncratic approaches need to give way to principles-based practices, focusing on well-established therapeutic goals and clinical indications, risk stratification and matched structuring of care, titration and stabilization, ongoing monitoring and outcomes (safe and effective use).”*

— Perry Fine, MD, Topics in Pain Management

### Strategies to Address Twin Public Health Crises

Systematic and targeted approaches are essential to address the growing prevalence and complexity of the non-medical use of prescription drugs, while simultaneously ensuring that people with legitimate medical needs receive effective treatment.

*These approaches can generally be categorized as follows:*

- Legislative strategies to create balanced and consistent laws and improve state-based prescription drug monitoring programs.
- Educational efforts to raise awareness about prescription drug abuse and its dangers among schools, families, health care providers, patients and potential abusers.
- Greater public awareness and acceptance of pain and the need to be able to access appropriate treatment with medical oversight.
- Medical strategies to help identify and monitor people with pain who require opioid management, incorporating risk

management into the treatment plan (e.g., informed consent, appropriate pain assessment, diagnostic testing and monitoring, transition planning, collaborative practice with addiction medicine and behavioral health specialists as indicated).

- Pharmaceutical industry strategies to help prevent misuse, abuse and diversion by developing new tamper resistant packaging and/or formulations (e.g., tamper-resistant bottles, electromagnetic chips to track medication, new formulations that could resist or deter common methods of opioid abuse).

For additional recommendations, see the American Pain Foundation’s report outlining critical barriers to appropriate opioid prescribing for pain management, *Provider Prescribing Patterns and Perceptions: Identifying Solutions to Build Consensus on Opioid Use in Pain Management*. This 16-page report calls for a more balanced perspective of the risks and benefits of these medications in practice and policy and summarizes key challenges and actionable solutions discussed by leading pain experts at a roundtable meeting hosted by APF.

### Making the Grade: Evaluation of State Policies

The Pain & Policy Studies Group (PPSG) report “Achieving Balance in State Pain Policy: A Progress Report” graded states on quality of its policies affecting pain treatment and centered on the balance between preventing abuse, trafficking and diversion of controlled substances and simultaneously ensuring the availability of these medications for legitimate medical purposes. PPSG researchers evaluated whether state pain policies and regulations enhance or impede pain management and assigned each state a grade from ‘A’ to ‘F.’

State Grades for 2008

State	2008 Grade	State	2008 Grade
Alabama	B+	Montana	C+
Alaska	C+	Nebraska	B+
Arizona	B+	Nevada	C
Arkansas	B	New Hampshire	B
California	B	New Jersey	C+
Colorado	B	New Mexico	B+
Connecticut	B	New York	C
Delaware	C+	North Carolina	B
District of Columbia	C+	North Dakota	B
Florida	B	Ohio	B
Georgia	B	Oklahoma	C+
Hawaii	B	Oregon	A
Idaho	B	Pennsylvania	C+
Illinois	C	Rhode Island	B+
Indiana	C+	South Carolina	C+
Iowa	B	South Dakota	B
Kansas	A	Tennessee	C
Kentucky	B	Texas	C
Louisiana	C	Utah	B+
Maine	B+	Vermont	B+
Maryland	B	Virginia	A
Massachusetts	B+	Washington	B+
Michigan	A	West Virginia	B
Minnesota	B+	Wisconsin	A
Mississippi	C+	Wyoming	C+
Missouri	C+		

Source: The Pain & Policy Studies Group, [http://www.painpolicy.wisc.edu/Achieving\\_Balance/PRC2008.pdf](http://www.painpolicy.wisc.edu/Achieving_Balance/PRC2008.pdf).

## At a Glance: Differentiating physical dependence, tolerance, abuse and addiction

Unfortunately, confusion between normal physiological responses to opioids (physical dependence and analgesic tolerance) and pathological phenomena such as addiction or substance abuse persist. Such misunderstandings not only reinforce the stigma surrounding medical use of these medicines, they also fuel fears of addiction and, in turn, may impinge on access to these medications for legitimate medical need. Although opioids have an abuse liability, clinical studies have shown that the potential for addiction is low for the vast majority of individuals using opioids for the long-term management of chronic pain.<sup>19</sup> As with any medication, there are risks, but these risks can be managed.

*“Universal agreement on definitions of addiction, physical dependence and tolerance is critical to the optimization of pain treatment and the management of addictive disorders.”*

— Consensus document from the American Academy of Pain Medicine, the American Pain Society and the American Society of Addiction Medicine

**Physical dependence** is characterized by biological changes that lead to withdrawal symptoms (e.g., sweating, rapid heart rate, nausea, diarrhea, goosebumps, anxiety) when a medication is discontinued. Physical dependence differs from psychological dependence, or the cravings for the euphoria caused by opioid abuse. Symptoms of physical dependence can often be ameliorated by gradually decreasing the dose of medication during discontinuation.<sup>9</sup>

**Analgesic tolerance** is a biological process in which a patient requires increasing amounts of a medication to achieve the same amount of pain relief. Dose escalations of opioid therapies are sometimes necessary and reflect a biological adaptation to the medication. Although the exact mechanisms are unclear, current research indicates that tolerance to opioid therapy develops from changes in opioid receptors on the surface of cells.<sup>9</sup> Thus, the need for higher doses of medication is not necessarily indicative of addiction.<sup>3</sup>

**Addiction** is a disease characterized by preoccupation with and compulsive use of a substance, despite physical or psychological harm to the person or others.<sup>3</sup> Behaviors suggestive of addiction may include: taking multiple doses together, frequent reports of lost or stolen prescriptions, and/or altering oral formulations of opioids.

**Abuse** is the intentional self-administration of a medication for a non-medical purpose, such as to obtain a high.<sup>3</sup> Both the intended patient and others have the potential to abuse prescription drugs; in fact, the majority of people who abuse opioids do not suffer from chronic pain.<sup>14</sup>

**Pseudo-addiction** describes patient behaviors that may occur when pain is undertreated. Patients with unrelieved pain may become focused on obtaining medications and may otherwise seem inappropriately “drug seeking,” which may be misidentified as addiction by the patient’s physician. Pseudo-addiction can be distinguished from true addiction in that this behavior ceases when pain is effectively treated.<sup>3</sup>

## MISUSE VS. ABUSE

- **Medication Misuse:** Legitimate use of a valid personal prescription but using differently from provider's instruction, such as taking more frequently or higher than the recommended doses. Use may be unintentional and considered an educational issue.
- **Medication Abuse:** Using a valid personal prescription for reasons other than its intent, such as to alleviate emotional stress, sleep restoration/prevention, performance improvement, etc. Use may be unintentional and considered an educational issue.
- **Prescription Drug Misuse:** Intentional use of someone else's prescription medication for the purpose of alleviating symptoms that may be related to a health problem. The use may be appropriate to treat the problem but access to obtain this drug may be difficult/untimely or may have been provided from a well-intentioned family member or friend.
- **Prescription Drug Abuse:** Intentional use of a scheduled prescription medication to experiment, to get high or to create an altered state. Access to the source may be diversion from family, friends or obtained on the street. Inappropriate or alteration of drug delivery system, used in combination with other drugs or used to prevent withdrawal from other substances that are being abused are included in this definition.

Source: Carol J. Boyd PhD, MSN, RN; Director: Institute for Research on Women and Gender, Substance Abuse Research Center, University of Michigan

### **Risk factors for opioid addiction include, but are not limited to:**<sup>2,3</sup>

- Personal or family history of prescription drug or alcohol abuse
- Cigarette smoking
- History of motor vehicle accidents
- Substance use disorder
- Major psychiatric disorder (e.g., bipolar disorder, major depression, personality disorder)
- Poor family support
- History of preadolescent sexual abuse

*NOTE:* Unless an individual has a past or current history of substance abuse, the potential for addiction is low when opioid medications are appropriately prescribed by a licensed health care provider and taken as directed. Those with chronic pain and addictive disease deserve the same quality of pain treatment as others and will require greater structure and resources in their care.

## WEB RESOURCES

### **PainSAFE**

[www.painsafe.org](http://www.painsafe.org)

### **Opioid RX**

[http://pain-topics.org/opioid\\_rx/](http://pain-topics.org/opioid_rx/)

### **Tufts Health Care Institute Program on Opioid Risk Management**

<http://www.thci.org/opioid/>

### **Emerging Solutions**

[http://www.emergingsolutionsinpain.com/index.php?option=com\\_continued&cat=37&Itemid=303](http://www.emergingsolutionsinpain.com/index.php?option=com_continued&cat=37&Itemid=303)

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