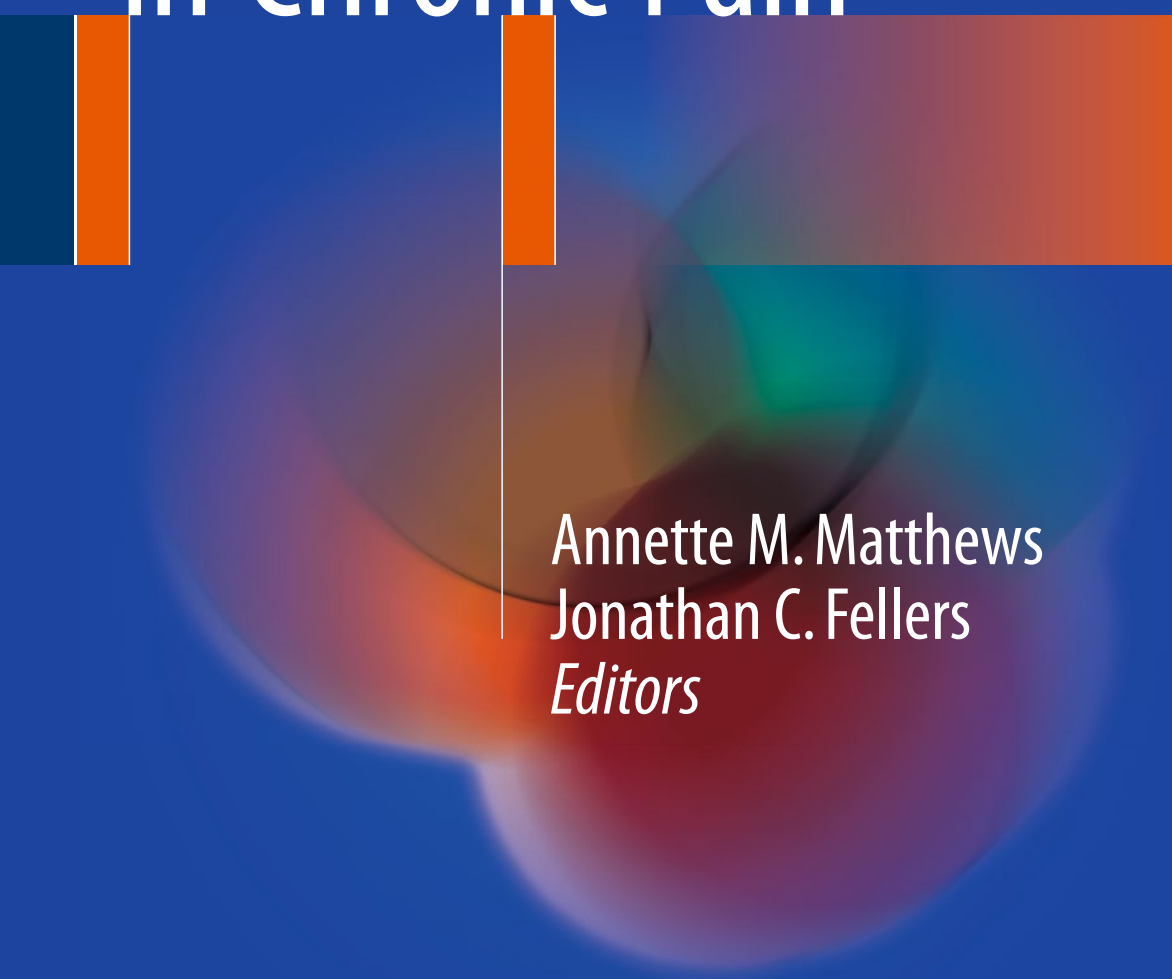
Treating Comorbid Opioid Use Disorder in Chronic Pain



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Preface

Chronic noncancer pain affects more than 100 million Americans and can be caused by many conditions including osteoarthritis, low back pain, musculoskeletal pain, injury-related pathology, and diabetic neuropathy. It is estimated that the 1-month prevalence of moderate to severe noncancer pain is 19%. Opioids can be an effective way to treat this pain, but not without risk. The goal of the book, *Treating Comorbid Opioid Use Disorder in Chronic Pain*, is to address how to approach and treat the chronic pain patient struggling with problematic opioid use.

Chronic pain serves as a conduit for problematic opioid use and addiction. Brain regions including the nucleus accumbens, the amygdala, and the hypothalamus are involved in both the mechanisms of pain and opioid dependence. The problematic use of opioids in this population can present as a range of issues including recreational use, physical dependence, pseudoaddiction, opioid-induced hyperalgesia, engagement in illicit activity, cross-addiction to street heroin, diversion, overdose, and theft. In some cases there is escalating use that may result in drug seeking from other healthcare providers or transitioning to the use of heroin or other drugs purchased on the street, to satisfy cravings. Recognizing these problematic patterns of use and developing ways to address them are important for the clinician prescribing for chronic pain.

Associated with addressing problematic use of opioids are a number of ethical, legal, and policy considerations. In the 1990s and 2000s, there was pressure on physicians by the Board of Medical Examiners and healthcare systems to aggressively treat pain with opioids and other treatments, and prescribers were sued for undertreatment. The pendulum has now swung, and prescribers' licensure can be at risk now for overprescribing. Physicians and others may, however, still find themselves trapped between legal and regulatory issues and the ethics of withholding treatment to someone in pain. Strategies for documentation and for detection of diversion can help mitigate the risk of legal issues or ethical boundary crossings.

To compound this, the healthcare system often struggles in addressing the needs of patients with chronic pain experiencing problematic opioid use. While the patient may start their pain care in primary care, he may intersect with numerous other treatment settings including the emergency room, the mental health clinic, the

substance abuse clinic, and the chronic pain clinic, if it exists. As problematic use arises and is detected, it can become less clear who and where in the healthcare system the patient's pain needs are to be met. It also can become very clear that not everyone agrees on how to treat pain, or even knows how to address pain, particularly in those with problematic use of opioids.

We would like to thank Springer for offering us the opportunity to compile this volume and also our families who understood and supported the time needed to produce such a work. We are also deeply indebted to the authors of this volume, without which, it would not exist. We hope this book will provide useful information for practitioners navigating the care of the chronic pain patient who also has an opioid use disorder or other mental health problems.

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Part I
Diagnosis and Treatment

Chapter 1
Theories of Pain and Addiction: Type of Pain, Pathways to Opiate Addiction

Jonathan C. Fellers

1.1 Introduction

Unlike other sensations that primarily inform about the environment, pain engages us at an emotional level and plays a protective role for survival. It sends a signal that nature assures we cannot ignore. Through the unpleasant experience of pain, we focus attention on the affected area and marshal our resources to prevent further injury. Take, for example, Descartes' figure of a boy with his foot too close to a fire (Fig. 1.1). First, pain leads the boy to reflexively withdraw his foot from the flame, thereby preventing further burns. Second, pain teaches the boy that this situation should be avoided in the future. And third, pain in his foot limits his activity on the affected foot, thereby enabling healing to occur.

Perhaps because the experience of pain is so unpleasant and engrossing, man has from time eternal sought to understand and master it. Therefore, it is not surprising that medication for pain was one of the first, if not the first, treatments to be developed. The ancient Sumerians began cultivating and extracting opium in the third millennium BC [1]. They called opium "Gil" which means "joy," and the opium poppy was known as "Hul Gil" or the "Joy Plant." Opium was initially reserved for religious and medicinal purposes, though over time access for recreational use grew.

By the seventeenth and eighteenth centuries, addiction to opium was already problematic in Western cultures [2]. The clear link between opioids and addiction led the United States to adopt the Harrison Narcotics Act in 1914. In addition to introducing controls on the production, distribution, and prescription of opioids, the law prevented physicians from prescribing opioids for the treatment of addiction.

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Fig. 1.1 Descartes' illustration of the pain pathway

The recognition of the abuse liability of opioids, many considered to be of "high potential for abuse," continues to this day in the form of the Controlled Substances Act of 1970.

1.2 Theories of Pain

Our understanding of pain has evolved over time. Descartes' [3] initial idea that painful stimuli pulled a thread that then open a valve in the brain has matured as scientific understanding and experimentation have revealed the secrets of our anatomy. Many theories have been developed, but they all fail to fully capture the symptom [4]. Pain is, after all, a subjective experience.

The *Specificity Theory* was first formulated during the nineteenth century. It theorizes that pain is an independent sense, with its own unique receptors, pathways, and "brain center" for perception. Moritz Schiff advanced this theory in 1858 when he was able to show that pain and touch travelled to the spinal cord through separate pathways.

Pain is detected through a variety of receptors on primary afferent neurons. A subgroup called nociceptors specifically detects painful stimuli through free nerve endings [5]. Myelinated nociceptors detect mechanical injury and transmit sharp