

## Management of Opioid Side Effects

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### Abstract

The paper examines the intoxication and withdrawal side effects associated with the opioids. In collecting data, a total of ten articles written between 2013 and 2018 have been used. The articles are drawn from different journals and explain not just the side effects but also the management strategies. The main side effects found in this study include respiratory depression, unconsciousness, pinpoint pupils, nausea and vomiting. On the other hand, the withdrawal side effects include muscle and joint pains, anxiety, insomnia, irritability, hot and cold sweating, lacrimation, rhinorrhea, and sneezing.

**Keywords:** Opioid intoxication, Opioid withdrawal, Opioid abuse, Respirator depression, Pinpoint pupils

### Introduction

Opioids, a class of drugs used in treating severe pain, are effective in the management of many forms of pain, including post-surgical pain<sup>[1]</sup>. The effectiveness of the drugs, however, depends on the adherence to prescriptions<sup>[1]</sup>. Opioids, besides the effectiveness in pain management, are euphoricants and this causes the temptation to take higher quantities, than the prescribed quantities, to maximize the 'feel-good' sensation. The abuse leads to adverse effects with a range symptom severity. A mild case of opioid overdose can be treated quickly but some cases can be fatal<sup>[2]</sup>. Abrupt withdrawal from opioid abuse may cause undesirable side effects and these establish the need for effective management of the side effects of opioid abuse<sup>[3]</sup>.

The euphoric nature of opioids that promotes the abuse of the drugs and the existence of side effects of the abuse establishes the significance of opioids and their abuse as contemporary social issues that require solutions. This paper seeks to identify the side effects of opioids and strategies for managing side effects.

### Methods

The systematic review of the literature was used in the study. The research method involves a vigorous approach to the collection and synthesis of data from existing literature. Its features that include the availability of data that would otherwise be difficult to obtain from quantitative methods, due to contextual constraints, informed its use. The systematic review of literature also has the advantage of yielding a high level of the quality of evidence, which is higher than the expected quality from indi-

vidual quantitative studies<sup>[4]</sup>.

The EbscoHost and Google Scholar databases were used to recruit sources for the review. The phrases: opioid abuse, opioid withdrawal, opioid intoxication, opioid side effects, and management of opioid side effects were used, singularly and in combinations, in the databases to recruit published sources from the databases. Sources that were published before the year 2013 were eliminated to avoid the reliance on outdated data. Titles of the remaining sources were then reviewed for relevance to the objective of the study and only applicable sources to the knowledge on side effects of opioid abuse and the management of the effects was considered. Contents of the considered sources were further reviewed, as an inclusion criterion, for the specific relevance to the objectives of the study. The peer-reviewed nature of the included sources was then determined and only peer-reviewed sources were considered. Thirteen articles that met the systematic criteria and were used.

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## Results

Data analysis focused on the synthesis of developed evidence on the effects of opioid abuse and the strategies for managing the effects. Table 1 summarizes key concepts on the effects and management strategies.

**Table 1:** Key concepts from the synthesis

Intoxication Effects	Withdrawal Effects	Management strategies
Respiratory depression	Anxiety, insomnia, restlessness and irritability	Antidotes and intravenous fluids to support cardiovascular and respiratory systems
Unconsciousness	Hot and cold flushes	external supply of oxygen
Pinpoint pupils	Lacrimation, rhinorrhea and sneezing	guideline-based approach to withdrawal from opioids
Nausea and vomiting	Pain in the joints, muscle, headache and muscle cramps	management of stigma to promote access and adherence to treatments

The results identify many side effects of opioid abuse, which include effects from intoxication and effects of withdrawal from the drugs. The results also identify different approaches to the management of the effects.

## Discussion

### Intoxication side effects

Opioid abuse, which occurs through using the drugs without prescriptions, overdose, and the mixing of opioids with other drugs, intoxicates the body<sup>[1]</sup>. Associated risk factors with intoxication include depression, chronic pain, lack of support, and social issues. Respiratory depression is one of the side effects of opioid intoxication and can cause death<sup>[3]</sup>. At the initial stages of the intoxication, an individual is likely to experience slow breaths. This may continue for a while until the breathing stops<sup>[5]</sup>. Death can occur if one does not get immediate treatment. The breathing difficulties also affect the lungs and may eventually cause permanent damage<sup>[5]</sup>.

Opioid intoxication slows down the transmission of signals from the receptors to the brain<sup>[3]</sup>. An overdose of a strong opioid like heroin or morphine affects the central nervous system and the coordination between the brain and other parts of the body<sup>[5]</sup>. This may lead to a state of short or long-term unconsciousness. Being unconscious also affects other functions of the body including functions of the cardiovascular system<sup>[6]</sup>. Seizures and tremors that one may feel following an opioid intoxication are examples of failures in the respiratory or cardiovascular system. The pupil is an essential part of the body because it allows light into the eye<sup>[7]</sup>. Opioid intoxication also constricts the pupil to limit the amount the light entering the eye. This may cause numbness or sleepiness<sup>[7]</sup> and prolonged intoxication may lead to impaired vision, including partial blindness. Opioid intoxication also affects the body ability to control nausea and this leads to vomiting<sup>[8]</sup>. Excessive vomiting can then cause massive loss of body fluids and loss of appetite to establish vulnerabili-

ties to other health conditions.

### Withdrawal effects

Abrupt withdrawal from the opioids may create anxiety and constant irritations even on trivial matters<sup>[6]</sup>. An abrupt withdrawal may also cause depression, especially if an abuser had become tolerant to the drugs<sup>[6]</sup>. Withdrawal may also affect the sleeping patterns and cause sleeplessness and anxiety. Sufficient support from close family members or friends may assist an individual to overcome anxiety<sup>[8]</sup>. Withdrawal from opioids has also been associated with mixed sessions of hot and cold sweats, which may cause piloerection<sup>[9]</sup>. An initial piloerection experience may further cause anxiety in a person<sup>[9]</sup>. Withdrawal from opioid dependence also causes teary eyes or the over secretion of tears from the tear glands<sup>[2]</sup>. The withdrawal also causes or worsens running nose and sneezing. Withdrawals from opioid dependence also cause joint and muscle pain<sup>[10]</sup>, as well as headaches that could range from mild to severe aches<sup>[8]</sup>.

### Management of the side effects

The use of antidotes that neutralize the side effects, according to Seth<sup>[10]</sup>, is the most commonly applied strategy to the management of intoxication-based side effects of opioids. Therapies can also target specific side effects such as severe breathing and cardiovascular problems<sup>[3]</sup>. The use of oxygen support, for example, can be used in the management of severe breathing problems while intravenous fluids can be used to manage severe cardiovascular conditions<sup>[3]</sup>. The therapeutic approaches to the management of the side effects, however, require professional medical assessments before administration.

Stigma has been identified as a barrier to the therapeutic management of the side effects of opioid dependence. Stigma discourages establishes a gap between people living with effects of the abuse and hinders the willingness to seek or accept treatment<sup>[11]</sup>. Managing stigma against opioid-dependent people, therefore, promises increased collaboration between the patients and other members of the society in promoting the administration of treatments. Evidence-based methods for addressing stigma such as the use of anti-stigma films<sup>[12]</sup>, the creation of awareness of the biological scope of opioid dependence<sup>[13]</sup>, and the use of community-oriented music to create change in attitude towards opioid users Rodgers are other solutions<sup>[14]</sup>.

A withdrawal from opioids is one of the causes of the side effects and a systematic approach to withdrawal is a preventive measure against the effects. Consultations with doctors for the reliance on guidelines in withdrawing from the drugs have recommended<sup>[8]</sup>. The use of the guidelines begins with an assessment to determine the need for a withdrawal<sup>[2]</sup>. Assessment results then inform the guideline to be adopted for a patient.

## Conclusion

Opioid use, including abuse, and withdrawal causes adverse side effects that could be life threatening. The drugs are also addictive because of their euphoriant nature. This paper sought to identify the side effect of opioid use and strategies for managing the effects. The systematic review approach was used and data were collected from 13 peer-reviewed articles. Side effects of opioids can result from opioid intoxication or withdrawal from

the use of the drugs. Effects of the intoxication include respiratory depression, unconsciousness, pinpoint pupils, and nausea and vomiting. Effects of withdrawal, however, include anxiety, insomnia, lacrimation, joint pain, muscle pain, and headache. The use of antidotes, support to affected organs, reliance on guidelines in withdrawing from opioids, and management of stigma are the identified strategies for managing the effects of opioids.

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