

Taking opioids at home after surgery: More harms than benefits

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A new study conducted at the RI-MUHC concludes that prescribing opioid analgesics at discharge after surgery does not reduce postoperative pain and increases the risk of adverse events.

Widespread opioid prescribing at discharge after surgery has contributed to an unprecedented crisis of addiction and overdose in North America. Considering the risks associated with this practice and the lack of evidence to support it, a team of researchers from the Research Institute of the McGill University Health Centre (RI-MUHC) conducted a study to estimate the impact of post-discharge opioids use on self-reported [pain intensity](#) and adverse events, in comparison with an opioid-free analgesic treatment. The study results indicate that prescribing opioids to manage [postoperative pain](#) after discharge is not only unnecessary, but harmful in many surgical settings. These findings, published in *The Lancet*, fill a critical gap in knowledge about how pain should be managed at home after surgery.

In this study, the researchers combined the results of 47 randomized [clinical trials](#) comparing opioid

versus opioid-free analgesia in patients discharged after undergoing a surgical procedure. Of these, 30 studies involved minor procedures (mostly dental) and 17 involved procedures of moderate extent (mostly orthopedic and [general surgery](#)).

"We found that prescribing opioids had no impact on patient-reported postoperative pain compared to simple over-the-counter analgesics, but it significantly increased the risk of adverse events, such as nausea, vomiting, constipation, dizziness and drowsiness," says study principal investigator Julio Fiore Jr., Ph.D., a scientist in the Injury, Repair, Recovery Program at the RI-MUHC. "Prescribing opioid-free analgesia may prevent these adverse effects, improve patients' recovery experience, and also help mitigate the opioid crisis by reducing the risk of postoperative opioid misuse, addiction and diversion."

The researchers found no differences in other aspects of recovery, which challenges common beliefs that the prescription of opioids positively impacts patient satisfaction with [pain management](#), pain interference on daily activities and postoperative emergency visits.

Risky but widely used

Opioid drugs act on many areas of the nervous system to provide pain relief, but also have other effects such as euphoria and sedation. Among the opioids most commonly prescribed by surgeons are oxycodone, hydromorphone, tramadol and codeine, which have an addictive potential.

"Approximately six percent of surgical patients who are opioid-naïve become persistent opioid users after receiving a prescription at surgical discharge. In addition, of all opioid tablets obtained by surgical patients, up to 70 percent go unused and become a readily available source for diversion," says Julio Fiore, who is an Assistant Professor in the Department of Surgery at McGill University. "Given

this alarming situation, it is urgent to mitigate postoperative opioid overprescribing while ensuring adequate pain management for patients."

More than 300 million people undergo surgery worldwide each year. However, opioid prescriptions following surgery are most prevalent in Canada and the United States, where opioid overdose deaths have skyrocketed over the past 20 years.

"Opioid analgesics are not widely used in the postoperative setting in Europe, Asia, the Middle East and South America. The reasons contributing to the widespread use of postoperative opioids in North America are multifactorial but include clinicians' concerns regarding inadequate pain control, patient dissatisfaction and risk of increased emergency visits due to uncontrolled pain," explains Charbel El-Kefraoui, co-first author of the study and research trainee at the RI-MUHC.

"Findings from our study indicate that none of these concerns are supported by evidence."

"Alternatives to opioids are often overlooked, while they should be incorporated as the foundation of postoperative analgesia whenever possible," adds Julio Fiore. "Our work aims to build a strong body of knowledge to inform evidence-based analgesia prescribing and mitigate opioid-related harms after surgery."

A comprehensive and rigorous analysis of existing data

To obtain these results, the researchers performed a [meta-analysis](#), i.e., a review of the literature followed by statistical work combining data from several studies to extract general trends and common findings. First, they searched seven major bibliographic databases for randomized clinical trials comparing opioid versus opioid-free analgesia in patients aged 15 years and older discharged after undergoing a [surgical procedure](#) of minor, moderate, major or major-complex extent. Opioid-free analgesia was defined as any pain management regimen (pharmacological, non-pharmacological or combined) that does not include opioid drug. The researchers then excluded crossover trials (where patients received two types of treatment subsequently), single-dose trials

(where a drug is given in a single dose, contrary to standard practice in the postoperative setting), trials aimed at treating chronic pain, and trials where at-home drug administration was invasive (intravenous or other). At the end of this screening process, 47 clinical trials involving minor to moderate interventions were selected for inclusion in the analysis.

"The quality of the selected studies was variable, and none of them addressed non-opioid analgesia during discharge from major or major-complex surgery," says Charbel El-Kefraoui. "It will therefore be important to conduct studies on different surgical procedures and on different postoperative pain management regimens, including pharmacologic and non-pharmacologic interventions like expectation setting, relaxation and ice packs."

This research was based on extensive multidisciplinary work, bringing together the expertise of scientists, clinicians, librarians, and biostatisticians. It also counted on the collaboration of a patient partner who was actively involved in all stages of the research project and contributed her lived experience and knowledge to inform the research design and interpretation of the study results.

More information: Julio F Fiore et al, Opioid versus opioid-free analgesia after surgical discharge: a systematic review and meta-analysis of randomised trials, *The Lancet* (2022). [DOI: 10.1016/S0140-6736\(22\)00582-7](https://doi.org/10.1016/S0140-6736(22)00582-7)

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