

Study determines risk factors for opioid misuse

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Current research demonstrates that patients' exposure to opioids following medical care has contributed to the nationwide addiction epidemic. An estimated 2.1 million Americans are reported to have an

opioid use disorder associated with prescription medications—the source that accounts for half of all opioid-related deaths in the United States. These sobering numbers are of special concern for surgeons, who must balance the need for postoperative pain management against patients' risk of opioid dependence for the estimated 234 million patients who undergo major surgeries each year.

Researchers and clinicians at Beth Israel Deaconess Medical Center (BIDMC) have performed the first meta-analysis to pool the effects of risk factors that place [patients](#) at an increased chance of prolonged [opioid](#) use, defined as use for longer than two months. Published today in the *Journal of Bone and Joint Surgery*, the analysis reveals that certain prescribing patterns, surgical procedures and patient characteristics increase patients' risk of long-term opioid use following surgery or trauma.

"Approximately four percent of the general population will use prescribed opioids for an extended time after surgery, but, among patients with a history of prescription opioid use, nearly a quarter of patients will continue to use prescribed opioids for an extended time period after surgery," said Ara Nazarian, Ph.D., a principal investigator in the Center for Advanced Orthopaedic Studies at BIDMC and Associate Professor of Orthopaedic Surgery at Harvard Medical School. "Understanding the pooled effect of risk factors can help physicians develop effective and individualized [pain](#) management strategies with a lower risk of prolonged opioid use."

After combing through the medical literature for case control and cohort studies of adult opioid use in surgical and trauma settings, Nazarian and colleagues analyzed findings from 37 studies with nearly 2 million participants. The overall rate of prolonged opioid use among participants was less than five percent. By pooling the data, Nazarian and colleagues demonstrated that prior use of prescribed opioids or benzodiazepines,

depression and back pain were among the most important patient-related factors predicting which patients would continue to use [prescription opioids](#) beyond two months.

While depression and chronic pain were significant risk factors, the use of antidepressants or non-narcotic pain killers did not appear to increase the patients' prolonged use of opioids.

"Depression is also highly correlated with chronic post-surgical pain," corresponding author Amin Mohamadi, MD, MPH, a post-doctoral research fellow in the Nazarian lab, stated. "Our findings suggest that addressing concurrent mental health problems and managing postsurgical pain using multiple modalities including non-narcotic analgesics could mitigate the risk of prolonged use of opioids associated with depression or pain."

Nazarian and colleagues also note that physicians' prescribing practices can influence the incidence of prolonged opioid use; long-term opioid use is significantly higher among patients treated by high-intensity prescribers than among those treated by low-intensity prescribers. Physicians also tend to prescribe opioids to women more often than men. Doctors may also avoid the use of non-steroidal anti-inflammatory drugs such as ibuprofen in patients with cardiovascular concerns, opting for [opioid analgesics](#) instead. These prescribing practices may explain why gender and cardiovascular health are significant [risk factors](#) for prolonged opioid use.

"On the other hand, physician behavior may also mitigate the occurrence of prescribed [opioid dependence](#)," Mohamadi said. "Providing patients with adequate pain relief, involving patients in [pain management](#) planning with realistic goal-setting and providing them with comprehensible information about the risks of opioid use, tapering opioid use prior to hospital discharge and using more uniform

prescribing protocols could reduce the overall burden of long-term opioid use following surgery or trauma."

"Four percent may not seem like much; however, hospitals have reduced the rate of surgical infections—another unwanted potential side effect of [surgery](#)—far below four percent," said Mohamadi. "That demonstrates what's possible with a concerted effort. Our data suggests much more effort is needed in order to mitigate the problem of prolonged opioid use."

Provided by Beth Israel Deaconess Medical Center

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