

# Opioid use increases risk of serious infections

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Opioid users have a significantly increased risk of infections severe enough to require treatment at the hospital, such as pneumonia and meningitis, as compared to people who don't use opioids.

The Vanderbilt University Medical Center study, released today by the *Annals of Internal Medicine*, found that people who use opioids have a 1.62 times higher risk of invasive pneumococcal diseases.

Invasive pneumococcal diseases are serious infections caused by the *Streptococcus pneumoniae* bacteria, with mortality ranging from 5 percent to 20 percent. These invasive diseases include a range of illnesses such as meningitis, bacteremia and invasive pneumonia.

"The association between [opioid](#) use and the risk of invasive pneumococcal diseases was strongest for opioids used at high doses, those classified as high potency and long-acting, which would be the extended release or controlled release formulations," said lead author Andrew Wiese, PhD, MPH, postdoctoral research fellow in the Department of Health Policy at Vanderbilt University School of Medicine.

"We also found that opioids previously described as immunosuppressive in prior experimental studies conducted in animals, had the strongest association with invasive pneumococcal diseases in humans," he said.

Wiese and colleagues, studied Tennessee Medicaid Data to measure daily prescription opioid exposure for each study individual and combined that information with Active Bacterial Core (ABC) surveillance system data, which is a VUMC laboratory and population-based surveillance system conducted in partnership with the Tennessee Department of Health and the CDC Centers for Disease Control and Prevention to monitor invasive infectious diseases in Tennessee.

"A unique feature of the study is the use of laboratory-confirmed infections as study outcomes. The sources of data allowed us to reconstruct and compare the history of opioid exposures in those subjects with and without invasive pneumococcal diseases," said Carlos

G. Grijalva, MD, MPH associate professor of Health Policy, and senior author of the study.

The increase in opioid use in the U.S. over the past several years has led to an increased interest towards well-known and also previously under-recognized adverse effects associated with opioid use.

"Previous studies conducted in animal models had demonstrated that certain opioids can cause immunosuppression and render experimental animals susceptible to infections. However, the clinical implications of those observations in humans were unclear" said Grijalva.

In an accompanying editorial, Sascha Dublin, MD, and Michael von Korff, ScD, from the Kaiser Permanente Washington Health Research Institute indicate that this research provides, "...cautionary evidence of a higher [infection](#) risk with prescription opioid use, suggesting the need for prudent steps to protect patients..." They further emphasize the need for judicious prescribing of opioids and conclude that "opioid prescribing should be consistently cautious and closely monitored among all patients, especially those at increased risk for infections, who may be particularly susceptible to harm."

"The findings from our study are clinically relevant. Providers should consider these results when making pain management decisions," added Wiese.

Provided by Vanderbilt University Medical Center

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