

Opioid use can trigger deafness, study finds

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Opioid use, particularly in high doses, can cause deafness, according to Rutgers researchers.

The study, published in *The Journal of Medical Toxicology*, reviewed records from the New Jersey Poison Control Center, based at Rutgers New Jersey Medical School, from 1999 to 2018 to determine the

association between [opioid use](#) and degrees of hearing loss.

Researchers identified 41 people with [opioid](#) exposure who experienced full or partial hearing loss or tinnitus, likely caused by toxicity to the ear. More than half had used heroin, followed by oxycodone, methadone and tramadol; 88 percent had only one known exposure. Most people reported the condition affecting both ears, with 12 people experiencing deafness, 15 partial or total loss of hearing acuity, 10 tinnitus and four a mix of symptoms.

While some people may regain their hearing, the loss could be permanent with others—21 percent of those reporting the condition had no improvement in hearing when they were discharged from the hospital. "The delicate structures of the inner ear are very susceptible to injury if [oxygen supply](#) is insufficient, as well as to the direct effect of toxins like opioids," said co-author Lewis Nelson, chair of the Department of Emergency Medicine.

"Although the study found a link with heroin, toxicity to the ear can occur with every opioid," said Diane Calello, executive and medical director of the New Jersey Poison Control Center. "This study supports what has been found in animal studies, which is that any opioid can cause hearing loss," she said. "This might be because we already have built-in [opioid receptors](#), or binding sites, in the inner ear. Activating them may trigger this injury in some patients."

The researchers said [health care providers](#) should be aware of the association with opioid use when evaluating a patient with [hearing](#) loss.

More information: Alexander M. Mozeika et al, Opioid-Associated Hearing Loss: A 20-Year Review from the New Jersey Poison Center, *Journal of Medical Toxicology* (2020). [DOI: 10.1007/s13181-020-00785-5](#)

Provided by Rutgers University

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