

Study reveals abnormalities in infants born in withdrawal after opioid exposure in utero

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A new study of infants born in withdrawal due to opioid exposure in utero shows a dramatic increase in torticollis - an abnormal twisting of the neck. Many of the infants also had plagiocephaly - a flattening of the head often seen in conjunction with torticollis.

The study is one of the first to be published by physicians at Cincinnati Children's Hospital Medical Center on the long-term effects of maternal opioid [exposure](#). Cincinnati Children's has one of the few clinics in the nation to follow these infants over a period of time.

"Awareness of these potential issues in this population is essential as torticollis may not develop for several months after the infant has been discharged from the hospital," says Jenny McAllister, MD, a physician at Cincinnati Children's and co-director of the Neonatal Abstinence Syndrome Long-term Follow-up Clinic.

"If preventive measures are performed, such as occupational and physical therapy, torticollis and plagiocephaly may be avoided and potentially prevent developmental delays," says Dr. McAllister, lead author of the study, published online in *The Journal of Pediatrics*.

Neonatal Abstinence Syndrome (NAS) is a clinical condition that results from withdrawal from exposure to opioids in utero. The incidence of NAS rose almost five-fold between 2000 and 2012, when the national rate reached 5.8 per 1,000 [live births](#).

The most current rate of torticollis in the general population was published in 1994 as .3 to 1.9 percent. Dr. McAllister and her colleagues at Cincinnati Children's studied 783 infants over a five-year period. Of those with a history of NAS, 87 were diagnosed with torticollis, an incidence rate of 11.1 percent.

Of these infants, 23 percent were exposed to only one long-acting opioid, probably as medication-assisted therapy. But 75.9 percent of infants were exposed to short-acting opioids, and 72.4 percent to multiple opioids. Infants in withdrawal were treated, in most cases, with methadone, but 18.4 percent were treated with buprenorphine and 5.7 percent with morphine. Length of stay in the hospital averaged 19.3 days.

Whether opioid exposure in utero was the cause of torticollis remains unknown. Dr. McAllister says it could be that these infants have hypertonia, or a tightness of their muscles, that predisposes them to torticollis. It could also be due to their positioning and swaddling to keep them calm and happy after birth.

The [opioid epidemic](#) has greatly affected the Cincinnati area. From 2012 to 2016, 29.4 per 1,000 live births had in utero [opioid](#) exposure. Of these 35.1 percent, or 10.3 per 1,000 live births, were diagnosed with NAS. In the Cincinnati area, NAS is defined as withdrawal symptoms severe enough to require pharmacologic treatment.

Dr. McAllister's research interests include both short- and long-term outcomes of babies diagnosed with NAS. Little is known about long-term issues infants diagnosed with NAS may encounter after they leave the hospital. This is one reason that Cincinnati Children's established a clinic specifically to provide follow-up care of [infants](#) treated for NAS.

Provided by Cincinnati Children's Hospital Medical Center

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