

Is it safe to vape while breastfeeding?

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Findings from a new animal study suggest that maternal nicotine exposure during breastfeeding could be linked to problems with skull and face development. Although widespread research has focused on the effects of cigarettes, little work has examined nicotine alone.

"Unlike many other studies, we isolated the common constituent of cigarettes, vaping technologies and many nicotine replacement therapies to specifically understand how nicotine by itself might alter development," said research team leader James Cray, Ph.D., associate professor of anatomy at The Ohio State University. "Our findings suggest that mothers who vape while breastfeeding are likely exposing their infants to nicotine and that this can disturb growth much like cigarette exposure."

Amr Mohi, BDS, a teaching assistant and [graduate student](#) in Cray's lab, was scheduled to present this research at the American Association for Anatomy [annual meeting](#) in San Diego this month. Though the meeting, to be held in conjunction with the 2020 Experimental Biology conference, was canceled in response to the COVID-19 outbreak, the research team's abstract was published in this month's issue of *The FASEB Journal*.

Maternal exposure to nicotine has been linked to increased craniofacial abnormalities such as craniosynostosis, a birth defect in which the bones in a baby's skull fuse too early. To better understand the timing involved in this exposure, the researchers used an imaging method known as microCT to measure skull and face bones in mouse offspring after maternal nicotine exposure during pregnancy or lactation.

The researchers found that exposure during lactation alone—comparable to the time a mother would breastfeed her infant—was associated with abnormalities in craniofacial development.

"Our findings suggest that nicotine alone can alter craniofacial development and show that nicotine cannot be viewed as a relatively safe chemical that only acts on addiction," said Cray.

The researchers plan to build on these findings by looking more closely

at nicotine exposures from vaping. In one study, they are using cell models to better understand how [nicotine](#) and carrier components used for vaping may alter cellular processes.

Provided by Experimental Biology

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