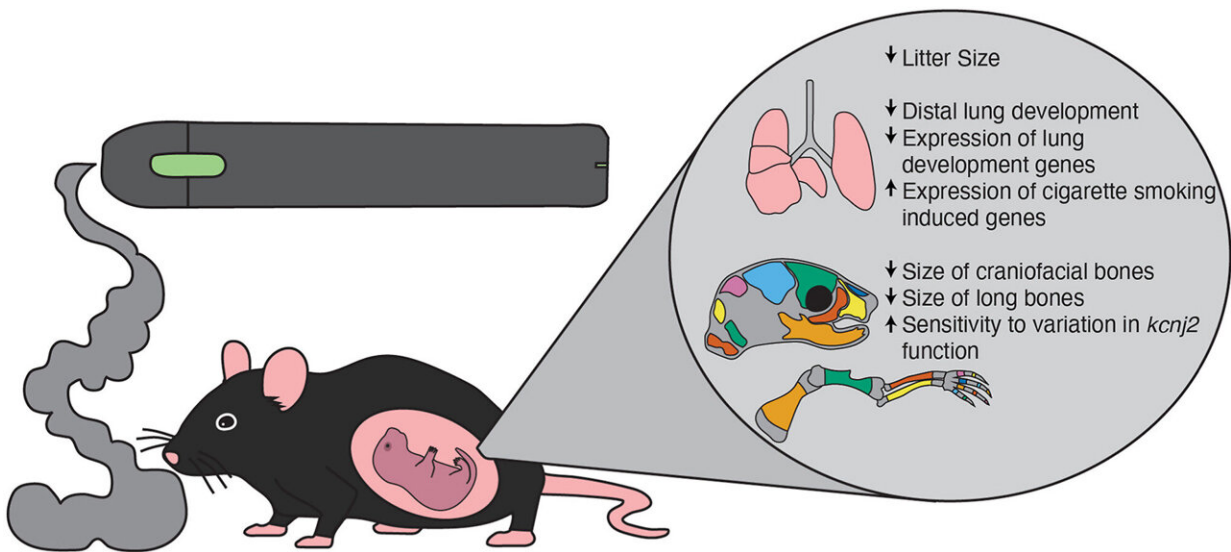


Study shows vaping nicotine while pregnant may impact fetal development

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Graphical abstract. Nicotine vaping disrupts lung airway development, lung gene expression, craniofacial and long bone development, and increases sensitivity of skeletal consequences to variations in *Kcnj2* function. Credit: *Developmental Biology* (2023). DOI: 10.1016/j.ydbio.2023.06.002

Researchers at the University of Colorado Anschutz Medical Campus have found that vaping nicotine during pregnancy may be no safer for a developing fetus than smoking cigarettes. The study suggests that vaping nicotine interferes with fetal bone and lung development.

The paper was published in *Developmental Biology*.

"Pregnant women are increasingly turning to vaping with electronic cigarettes as a perceived safer alternative to cigarettes. However, [nicotine](#) disrupts [fetal development](#), suggesting that, like cigarette smoking, nicotine vaping may be detrimental to the fetus," said Emily Bates, Ph.D., an associate professor at the University of Colorado School of Medicine.

"Nicotine passes through the placenta to fetal circulation where it can accumulate to reach higher levels than in the maternal plasma. This disrupts the development of multiple organs and systems."

Using an animal model, Bates and her team discovered that even low levels of e-cigarette vapor during pregnancy inhibits growth.

"Those that were exposed to vaping ended up with smaller and shorter bones during their development. Additionally, we found that the nicotine impacts which genes are turned on in the fetal lung," said Bates who collaborated with Eszter Vlader, Ph.D., an assistant professor at the University of Colorado School of Medicine.

The findings indicate that vaping nicotine during pregnancy can be detrimental to the baby. Bates hopes this study will encourage those hoping to conceive to be more cautious when it comes to nicotine use.

"The popularity of vaping among [young people](#), the addictive nature of nicotine, and the lack of perceived risk suggests that vaping during pregnancy will likely increase over time," Bates said. "Identifying the effects of maternal e-cigarette exposure on fetal development is essential to inform [public health](#) messaging and protect the health of the baby."

Graduate student Yunus Ozekin, who works in Bates' Lab, also assisted with the study.

More information: Yunus H. Ozekin et al, Intrauterine exposure to nicotine through maternal vaping disrupts embryonic lung and skeletal development via the Kcnj2 potassium channel, *Developmental Biology* (2023). [DOI: 10.1016/j.ydbio.2023.06.002](https://doi.org/10.1016/j.ydbio.2023.06.002)

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