

Vaping during pregnancy causes long-term pulmonary effects in mouse offspring

13 October 2022



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Women who vape during pregnancy, including products without nicotine, may predispose their children to developing adulthood lung diseases such as asthma or chronic obstructive pulmonary disease (COPD), according to a new study by researchers in the Dorothy M. Davis Heart and Lung Research Institute in The Ohio State University College of Medicine.

In the study, [pregnant mice](#) were exposed to [e-cigarette vapor](#) with nicotine, e-cigarette vapor without nicotine or filtered air. Researchers examined the offspring at five months of age and found reduced lung function and evidence of scarring in mice exposed to e-cigarette vapor with or without nicotine. They also found female mice had significantly higher body weight in adulthood but not at birth. The research was published in *The American Journal of Physiology-Lung Cell and Molecular Physiology*.

"The dangers of smoking traditional cigarettes while pregnant are clearly documented, including sudden infant death syndrome, low birth weight and asthma, but the effects of e-cigarette vapor

exposure during development are not clear. Vaping has only been around since the early 2000s and little research has been done during the in utero period. Our findings indicate that vaping while pregnant can have long-term health effects for the offspring," said Matthew Gorr, the study's senior author and a research assistant professor in Ohio State University's College of Nursing.

Most electronic cigarettes contain nicotine, an addictive drug that can damage a baby's developing brain, lungs and other organs. They also contain chemicals, flavors and other additives that can negatively impact health. In a 2015 study, about 7% of women reported vaping during their pregnancy, despite warnings by the Centers for Disease Control and Prevention.

"E-cigarettes have been touted as being safer than traditional cigarettes and while this is true, there are still health consequences. Clinical research is just now starting to ramp up because it's clear that e-cigarettes are not going away. We need this type of research to help guide policy in a market that is largely unregulated," said Loren Wold, the study's co-author and associate dean for [research](#) operations and compliance in the College of Medicine.

The e-cigarette market has continued to grow exponentially and is projected to exceed \$60 billion globally by 2025, surpassing sales of [traditional cigarettes](#). Since 2014, e-cigarettes have been the most used tobacco product among U.S. youth, according to the CDC.

Next, Ohio State researchers will examine whether those exposed to vaping in utero will develop more detrimental lung diseases as they age, especially as they encounter other lung problems such as asthma or infection.

More information: David M. Aslaner et al, E-cigarette vapor exposure in utero causes long-term

pulmonary effects in offspring, *American Journal of Physiology-Lung Cellular and Molecular Physiology* (2022). DOI: [10.1152/ajplung.00233.2022](https://doi.org/10.1152/ajplung.00233.2022)

Provided by Ohio State University Medical Center

APA citation: Vaping during pregnancy causes long-term pulmonary effects in mouse offspring (2022, October 13) retrieved 27 October 2022 from <https://medicalxpress.com/news/2022-10-vaping-pregnancy-long-term-pulmonary-effects.html>

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