

Is There Evidence for Potential Harm of Electronic Cigarette Use in Pregnancy?

The short- and long-term effects of these products on both mother and fetus are unknown.



Because e-cigarettes are nicotine delivery systems, we sought to conduct a comprehensive review of the effects of nicotine on the fetus.

In utero nicotine exposure in animal models is associated with adverse effects for the offspring lung, cardiovascular system and brain. In the lung, this included reduced surface area, weight, and volume, as well as emphysema-like lesions. In adulthood, exposed offspring demonstrate elevated blood pressure and increased perivascular adipose tissue. In the brain, exposure alters offspring serotonergic, dopaminergic, and norepinephrine networks, which in turn are associated with behavioral and cognitive impairments. We also review current data on the lack of efficacy of nicotine replacement therapy in pregnant women, and highlight different nicotine containing products such as snuff, snus, and hookah. We conclude that no amount of nicotine is known to be safe during pregnancy, and studies specifically addressing this risk are crucial and an imminent public health issue.

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