

How e-cigarette or nicotine replacement therapy influences smoking cessation later in pregnancy

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The risks of smoking during pregnancy for both maternal and fetal health are well documented, but only about half of pregnant people quit

smoking on their own.

To learn more about how e-cigarette or nicotine replacement therapy (NRT) influences [smoking](#) cessation later in [pregnancy](#), University at Buffalo researchers compared abstinence rates in the two groups. They found that those using [e-cigarettes](#) before pregnancy were more likely to abstain from smoking later in pregnancy.

Published in *JAMA Network Open* on Sept. 12, the research was conducted as an observational study of data gathered from 1,329 pregnant people through the U.S. Pregnancy Risk Assessment Monitoring System (PRAMS) between 2016 and 2020.

It is one of the first studies in the U.S. to address maternal e-cigarette use.

Addressing a research gap

"There is an urgent need for research on maternal e-cigarette use, as e-cigarettes have been increasingly used by [young people](#), including pregnant individuals," says Xiaozhong Wen, MD, Ph.D., corresponding author and associate professor of pediatrics in the Jacobs School of Medicine and Biomedical Sciences at UB.

As a researcher in the Division of Behavioral Medicine of the UB Department of Pediatrics, Wen has conducted multiple studies on smoking cessation during pregnancy and postpartum.

"Our pregnant patients want to know more about the pros and cons of using e-cigarettes compared to cigarettes. However, we don't know that much about [e-cigarette use](#) during pregnancy, a substantial research gap," he says.

The study found that among the 1,329 respondents who had used either e-cigarettes or NRT (a patch, gum, lozenge, etc.) in pregnancy, about half (50.8%) of those who used e-cigarettes reported abstinence later in pregnancy versus 19.4% of those who were using some form of nicotine replacement therapy.

"In our analysis of subpopulations in the study, we found that people who started using e-cigarettes before pregnancy had an even higher smoking abstinence rate (53.1%) but that those who started using e-cigarettes during their pregnancy had a similar smoking abstinence rate (20.6%) compared to NRT users (19.4%)," says Wen.

While the reasons for the discrepancy are unknown, Wen hypothesizes that there are a few possibilities that might explain the difference.

"It's possible that existing [e-cigarette](#) users, meaning those who had started using prior to becoming pregnant, had had positive experiences with these products after an initial adjustment period," he explains. "It's possible that using e-cigarettes allows patients to maintain smoking-related physical motions, psychological satisfaction, social behaviors and interactions with other smokers."

He adds that e-cigarettes don't typically have the side effects (nausea, vomiting, sleep problems and headaches) that may affect those using [nicotine replacement therapy](#).

Findings need to be confirmed

Asked if the results indicate that pregnant people trying to quit smoking should consider e-cigarettes, Wen emphasizes that the findings from the study need to be interpreted cautiously and must be confirmed in future randomized, controlled trials.

"The associations we have identified between use of e-cigarettes and abstinence during pregnancy might not be causal," he says, "especially given substantial confounding factors, such as smoking intensity."

He refers to the paper, which states, "If cigarette smokers prefer not to pursue NRT or have negative experiences and low adherence to NRT use, e-cigarettes could be offered as an alternative smoking cessation aid after a discussion of the potential harms and benefits of using e-cigarettes during pregnancy compared with NRT or continued use of cigarettes."

More information: Cigarette Smoking Abstinence Among Pregnant Individuals Using E-Cigarettes or Nicotine Replacement Therapy, *JAMA Network Open* (2023). [DOI: 10.1001/jamanetworkopen.2023.30249](https://doi.org/10.1001/jamanetworkopen.2023.30249)

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