New Roswell Park/UCSF Study: Smokers Who Switch to E-Cigarettes Exposed to Same Levels of Nicotine, Lower Carcinogen Levels

Those who switch completely to e-cigarettes may reduce their cancer risk, research team says.

Buffalo, NY (PRWEB) August 17, 2016 -- A study led by researchers at Roswell Park Cancer Institute (RPCI) reports that nicotine exposure remains the same, while exposure to specific carcinogens and toxicants is reduced, among smokers who switch from tobacco cigarettes to electronic cigarettes. The new research has been published online ahead of print in the journal Nicotine Tobacco Research.

“To our knowledge, this is the first study with smokers to demonstrate that substituting tobacco cigarettes with electronic cigarettes may reduce exposure to numerous toxicants and carcinogens present in tobacco cigarettes,” says lead author Maciej Goniewicz, PhD, PharmD, Assistant Professor of Oncology in the Department of Health Behavior at Roswell Park. “This study suggests that smokers who completely switch to e-cigarettes and stop smoking tobacco cigarettes may significantly reduce their exposure to many cancer-causing chemicals.”

In a study conducted between March and June 2011, 20 healthy adult daily smokers were provided with electronic cigarettes and 20 tobacco-flavored cartridges. Participants in the study had smoked traditional cigarettes for an average of 12 years, and 95% of them said they planned to quit smoking. All participants were asked to substitute their usual tobacco cigarettes with e-cigarettes for two weeks.

The international scientific team measured participants’ urine levels of seven nicotine metabolites and 17 biomarkers of exposure to carcinogens and toxicants present in cigarette smoke over a two-week period. The biomarkers measured in the study are indicators of the risk of several diseases, including lung cancer. For 12 of 17 measured biomarkers, they found significant declines in exposure to toxicants when participants changed from tobacco cigarettes to e-cigarettes. The decline in toxicant levels was similar to the decline seen among tobacco users who quit smoking. Nicotine metabolites remained unchanged among the majority of study participants, confirming findings from earlier laboratory studies showing that e-cigarettes effectively deliver nicotine to the blood.

“Our findings suggest that e-cigarette use may effectively reduce exposure to toxic and carcinogenic substances among smokers who completely switch to these products,” says co-author Neal Benowitz, MD, Professor of Medicine at the University of California, San Francisco. “Future research will help determine whether e-cigarettes reduce the risk of disease among dual users — those who both smoke and vape — and those who use electronic cigarettes for a long time.”

The study, “Exposure to nicotine and selected toxicants in cigarette smokers who switched to electronic cigarettes: a longitudinal within-subjects observational study,” is available at ntr.oxfordjournals.org.

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Editor’s note: See a video interview with Dr. Maciej Goniewicz, lead author of the study, at https://youtu.be/jQKs4wcn2Zg.

The mission of Roswell Park Cancer Institute (RPCI) is to understand, prevent and cure cancer. Founded in 1898, RPCI is one of the first cancer centers in the country to be named a National Cancer Institute-designated comprehensive cancer center and remains the only facility with this designation in Upstate New York. The Institute is a member of the prestigious National Comprehensive Cancer Network, an alliance of the nation’s leading cancer centers; maintains affiliate sites; and is a partner in national and international collaborative programs. For more information, visit www.roswellpark.org, call 1-877-ASK-RPCI (1-877-275-7724) or email askrpci(at)roswellpark(dot)org. Follow Roswell Park on Facebook and Twitter.
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