Vaping May Damage DNA

The effects could increase a smoker's risk for cancer.

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Are electronic cigarettes really a safer alternative to smoking? Maybe not, suggests a new study that found that vaping, as the use of e-cigarettes is known, might damage DNA in the mouth, which could increase a smoker's risk for cancer, the American Chemical Society (ACS) reports.

The research was presented this week at the ACS's annual National Meeting & Exposition and is one of many studies examining the long-term side effects of e-cigarette use. The handheld smoking devices were introduced to the United States in 2004 and largely marketed as a safer alternative to traditional cigarettes and tobacco products. Like tobacco cigarettes, e-cigarettes contain the addictive chemical nicotine but allow users to inhale it as a vapor, rather than smoke—which studies show decreases the carcinogens users inhale.

However, this latest study suggests e-cigs are not entirely safe. For the study, researchers recruited five e-cigarette users and collected saliva samples from them both before and after a 15-minute vaping session. The samples were then analyzed for chemicals known to damage DNA. Researchers also assessed the level of DNA damage in the study participants' mouths using mass-spectrometry methods.

Researchers identified three DNA-damaging compounds in the mouths of vapers post-smoking: formaldehyde, acrolein andmethylgloxal. Four out of five e-cigarette users also showed increased DNA damage in their mouths. They warned that the type of DNA damage they found, known as a DNA adduct, may increase the risk for cancer over time.

Moving forward, the study team hopes to carry out this preliminary study with a much larger group of both e-cigarette users and controls. Researches are also hoping to compare the amount of damage caused by e-cigarettes with those of traditional smoking products.

"We still don't know exactly what these e-cigarette devices are doing and what kinds of effects they may have on health," said Romel Dator, PhD, who presented the study at ACS, "but our findings suggest that a closer look is warranted."
