A recent laboratory study at the American University of Beirut (AUB) has shown some additives used to flavor the liquids for electronic cigarette become toxic when vaporized, contradicting many manufacturers’ claims that the devices deliver only harmless water vapor and nicotine.

The research was published in the peer review journal Tobacco Control authored by members of the Center for the Study of Tobacco Products (CSTP) at AUB, including masters’ student Sarah Soussy who wrote her thesis on the subject, under supervision of Dr. Najat Saliba, associate professor in analytical chemistry.

Soussy explained that manufacturers often claim the flavor-enhancing additives in e-cigarette liquids are safe because they are commonly used in food production.

“However, this argument is misleading because food additives are meant for ingestion, not inhalation, and because they can be transformed chemically in the heated element of the electronic cigarette,” she said.

For example, saccharides, used to impart a sweet flavor, decompose into furan compounds—which are toxic—in e-cigarettes.

The use of such additives has been widely banned in conventional cigarettes, but their presence is a characteristic of the countless different flavors of e-cigarette liquids. Just as with the inclusion of fruit and candy flavors in water-pipe tobacco, the flavors are controversial as it is feared they encourage non-smokers to use them, especially children.

The AUB study found that furan compounds were positively correlated with the concentration of the sweeteners in the liquid and the electrical power of the electronic cigarette.
Per-puff levels of furan compounds in electronic cigarettes were found to be comparable to those in conventional cigarettes.

CSTP’s work is part of an ongoing series of studies at AUB funded by the US Food and Drug Administration and National Institutes of Health and conducted under the leadership of the Dean of the Faculty of Engineering and Architecture Professor Alan Shihadeh and Professor Najat Saliba.

ENDS

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Note to Editors

About AUB

Founded in 1866, the American University of Beirut bases its educational philosophy, standards, and practices on the American liberal arts model of higher education. A teaching-centered research university, AUB has more than 700 full-time faculty members and a student body of about 8,500 students. AUB currently offers more than 130 programs leading to bachelor's, master's, MD, and PhD degrees. It provides medical education and training to students from throughout the region at its Medical Center that includes a full-service 420-bed hospital.

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