

Press Release

May 2, 2022

FOR IMMEDIATE RELEASE

CONTACT:

Dr. Sharon Harris

516- 676-2008

safeglencove@yahoo.com

SAFE Glen Cove Coalition: Neuroscience Researchers Say Vaping Alters Multiple Body Organs

Researchers at University of California San Diego School of Medicine are the first to assess JUUL devices and their flavorants across multiple organs including the brain, lungs and colon. According to the researchers, vaping daily vaping of pod-based e-cigarettes alters inflammatory states across multiple organs, including the brain. The effects vary depending upon the vape flavors and influence how the body responds to infections. Mint vapes, for example, leave people more sensitive to the effects of bacterial pneumonia than mango flavoring.

More than 12 million adults in the United States currently use e-cigarettes, with the highest rates of use among those aged 18-24. Despite their popularity, research on e-cigarettes has been largely limited to studies of short-term use, older devices, such as vape pens or box mods, and e-liquids with significantly lower nicotine concentrations than the modern rechargeable pod-based systems. This is because pod-based e-cigarettes have only become popular in the last five years therefore little is known about their long-term effects on health.

Researchers focused on the e-cigarette brand, JUUL, and its most popular flavors: mint and mango. To model chronic e-cigarette use, research subjects were exposed to flavored JUUL aerosols three times a day for three months. Researchers then looked for signs of inflammation across the body. The most striking effects were in the brain, where several inflammatory markers were elevated. Additional changes in neuroinflammatory gene expression were noted in the nucleus accumbens, a brain region critical for motivation and reward-processing. The findings raise major concerns, as neuroinflammation in this region has been linked to anxiety, depression and addictive behaviors, which could further exacerbate substance use and addiction.

Inflammatory gene expression also increased in the colon, particularly after one month of e-cigarette exposure, which could increase risk of gastrointestinal disease. In contrast, the heart showed decreased levels of inflammatory markers. Authors said this state of immunosuppression could make cardiac tissue more vulnerable to infection. While lungs did not show tissue-level signs of inflammation, numerous gene expression changes were observed in the samples, calling for further study of the long-term effects of pod-based e-cigarettes on pulmonary health.

The researchers also found that the inflammatory response of each organ varied depending on which JUUL flavor was used indicating that the flavor chemicals themselves are also causing pathological changes. If someone who frequently uses menthol-flavored JUUL e-cigarettes was infected with COVID-19, it's possible their body would respond differently to the infection. Researchers maintain every organ has its own finely tuned immune environment, so disturbing that balance through e-cigarette use could lead to many long-term health effects. It is clear that every e-cigarette device and flavor has to be studied to determine how it affects health across the body.

Many JUUL users are adolescents or young adults whose brains are still developing and this could affect their mental health and behavior in the future.

SAFE, Inc. is the only alcohol and substance abuse prevention, intervention and education agency in the City of Glen Cove. Its Coalition is concerned about vaping and seeks to educate and update the community regarding its negative consequences. To learn more about the SAFE Glen Cove Coalition please follow us on www.facebook.com/safeglencovecoalition or visit the Vaping Facts and Myths Page of SAFE's website to learn more about how vaping is detrimental to your health www.safeglencove.org.