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### **SAFE Glen Cove Coalition: Thirdhand Smoke and What's New with Cannabis**

Two recently reported studies show new properties of cannabis thirdhand smoke. Researchers at UC San Francisco and the University of Toronto findings add to a growing body of evidence that cannabis produces thirdhand smoke that is different from that of tobacco and is worth specifically researching. Thirdhand smoke refers to the slurry of toxic chemicals that form when tobacco products are combusted. However, many other non-tobacco, non-combusting products can also cause thirdhand smoke. These include hookahs, vapes, and cannabis.

Researchers in San Francisco measured thirdhand smoke compounds in a cannabis shop and found long-lasting particulate air pollution in the smoking lounge, even after a new ventilation system was installed. In the second study, Toronto researchers measured cannabis thirdhand smoke on various surfaces commonly found in the home, observing differences in how long the thirdhand smoke lasted based on the material.

While cannabis smoke is quite like tobacco smoke (both are result of burning plant materials), cannabis thirdhand smoke is composed of chemicals that are partially different from those in thirdhand smoke produced by tobacco. Rather than nicotine, cannabis has terpenoids and cannabinoids. THC, which is a cannabinoid and the main psychoactive ingredient in cannabis, or CBD, also another cannabinoid. Both cannabis and tobacco, however, contain tiny particles of air pollution, called PM2.5. Based on a large body of evidence, the U.S. Environmental Protection Agency (EPA) concluded that a high enough level of exposure to PM2.5 poses a significant health risk, including increased aggravation of heart or lung disease and premature mortality in persons with cardiopulmonary disease and the elderly and respiratory effects in the general population.

Air sampling tools were used to see what thirdhand smoke compounds could be detected in a cannabis store smoking lounge. Nicotine, PM2.5, THC, CBD, cannabidiol (another cannabis-specific compound that forms when THC combusts or with time) were measured nine times between 2018 and 2019. First and foremost, almost no nicotine was detected in the smoking lounge. Nicotine is a thirdhand smoke compound that comes from tobacco, not cannabis, so this finding meant that no one smoked tobacco in the lounge. The key finding, however, was high levels of PM2.5 in the smoking lounge air. During the study period, the cannabis store installed a ventilation system in the smoking lounge, yet the PM2.5 levels remained high. This level of PM2.5 has been associated with nasal congestion and decreased heart health and could present a real danger to employees at the cannabis store who are regularly exposed to these levels of PM2.5.

Toronto researchers examined how cannabis thirdhand smoke reacted on different surfaces over time. They exposed three common household materials to cannabis smoke: cotton, glass, and tile. Then, they observed these exposed materials for a week. Just like tobacco thirdhand smoke, cannabis smoke contains compounds that change with time. For example, THC is known to react with ozone (O<sub>3</sub>), a naturally occurring compound in the air. THC reacts with ozone to produce aldehydes, which can be toxic when inhaled. The researchers found that after a few hours, most of the THC in the cannabis thirdhand smoke had reacted with ozone to form aldehydes in the air. Another significant finding from this study was that the more porous a surface, like cotton, the longer THC remained—even after a week.

These two cannabis thirdhand smoke studies add to the knowledge base of thirdhand smoke and raises new questions. As states continue to legalize and decriminalize cannabis, its use is on the rise—as well as the prevalence of its thirdhand smoke. Thus, it is important that researchers understand the properties and health consequences of this cannabis thirdhand smoke and the risk it poses for the public.

For help Quitting smoking or vaping or to help a loved one stop Nicotine Addiction please visit the American Lung Association on their Website at: [www.americanlung.org](http://www.americanlung.org).

The New York State Smokers' Quitline assists thousands of New Yorkers every year in their attempts to break free from smoking and other tobacco and the service is free and confidential. Call 1-866-NYQUITS (1-866-697-8487) or visit them at: <https://www.nysmokefree.com/>.for Quit Help.

SAFE is the only alcohol and substance abuse prevention, intervention, and education agency in the City of Glen Cove. Its Coalition is concerned about tobacco use, marijuana use and vaping. The Coalition seeks to educate and update the community regarding its negative consequences in collaboration with Carol Meschkow, Manager- Tobacco Action Coalition of Long Island. To learn more about the SAFE Glen Cove Coalition please follow us on [ww.facebook.com/safeglencovecoalition](http://ww.facebook.com/safeglencovecoalition) or visit the Vaping Facts and Myths Page or Underage Marijuana Use Awareness Campaign pages of SAFE's website to learn more about how smoking/vaping is detrimental to your health [www.safeglencove.org](http://www.safeglencove.org).