



***BULLETIN: 2019 - 009***  
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## **Potential Lead Contamination in Used Vape Cartridges**

**Linthicum, MD** (June 14, 2019) – The Maryland Medical Cannabis Commission (MMCC) is providing this advisory to notify patients and other stakeholders of potential lead contamination of cannabis liquids in vape cartridges following exposure to heat. Following reports in [other states](#) of lead leaking into the cannabis liquid in some used vape cartridges, the MMCC initiated an investigation, including testing of Maryland vape cartridges for the presence of lead and other metals. The results indicate that while lead is not present in Maryland vape cartridges at the time of product testing, lead may leach into the product from exposure to the heating coils with use, over time. Medical cannabis patients who medicate by vaping should be aware of this potential contamination, which, if occurring, would occur after compliance testing.

According to a [study](#) conducted by Johns Hopkins Bloomberg School of Public Health, lead has been found in several brands of cartridges used for vaping. Although the lead is in the heating coils of the device, over time it can leach into the product. Lead contamination in vape cartridges is not limited to Maryland's medical cannabis market. The MMCC is aware of medical cannabis markets across the country experiencing the same issues with vape cartridge contamination.

While there is limited research on this topic, multiple studies on e-liquids have discovered elevated levels of lead in vape liquids due to the composition of vape cartridges:

- Researchers at John Hopkins [found](#) minimal amounts of metals in the e-liquids within refilling dispensers, but much larger amounts of some metals in the e-liquids that had been exposed to the heating coils within e-cigarette tanks. The difference indicated that the metals almost certainly had come from the coils. Most importantly, the scientists showed that the metal contamination carried over to the aerosols produced by heating the e-liquids.
- Among the samples collected in another [study](#), none of the bottles of e-liquids contained detectable levels of lead, which suggests that lead concentrations in disposable e-cigarettes may be related to the proximity of e-liquid to metal components in the product. There was also a significant difference in lead concentration between cartridge and open wick disposable systems, which suggests that the design of the vape products evaluated in this study contributed to overall lead exposure.

In the interest of public safety, the Commission will issue enhanced laboratory testing requirements to further investigate the potential presence of lead in vape cartridges. Effective immediately all compliance testing for vape cartridges will include a heavy metals analysis. If any vape cartridge exceeds MMCC's heavy metals testing limits the product will not be made available for sale at licensed dispensaries.

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