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Committee: Environment and Transportation

Testimony on: HB1147 “Environment - Playground Surfacing Materials - Prohibitions”

Position: Support

Hearing Date: February 28, 2024

The Maryland Chapter of the Sierra Club supports HB1147. This bill will reduce children’s exposure to harmful lead, per-and polyfluoroalkyl substances (PFAS) and polycyclic aromatic hydrocarbons (PAH) chemicals where they play. These chemicals are known toxins that cause irreparable harm to children.

For hundreds of years, children have been told to go out to play. Fresh air, exercise, vegetation and even dirt are widely considered to be beneficial for us all, including our children. However, there has been a growing movement to install playground spaces that include the use of synthetic surfacing materials, which in some cases (e.g., synthetic turf and tire crumb/rubber) contain chemicals known to be hazardous.

The chemicals of concern mentioned in this bill are known to be dangerous to all, but especially to growing and developing children.

Lead

Lead toxicity has been documented for thousands of years and research is incontrovertible that even seemingly small “exposures to lead can seriously harm a child's health, including damage to the brain and nervous system, slowed growth and development, learning and behavior problems, and hearing and speech problems.”¹ According to Mt. Sinai School of Medicine, Children’s Environmental Health Center in “children, even mild lead poisoning can have a permanent impact on attention and IQ. People with higher lead levels have a greater risk of long-lasting health problems. Lead is much more harmful to children than adults because it can affect children's developing nerves and brains. The younger the child, the more harmful lead can be.”²

PFAS

The dangers of PFAS, also known as “forever chemicals,” are also of concern with a growing body of research. Studies have shown a correlation with lower immunity and higher levels of infection in children. In adults, there are changes in cholesterol and liver enzyme levels, changes in the immune system and response to certain vaccines, increased risk of certain cancers (i.e., kidney and testicular), greater risk of preeclampsia or high blood pressure in pregnant women and birth defects.³ PFAS exposure is a leading cause of cancer and death for active duty firefighters, who are exposed to this class of chemicals in fire fighting foam and their gear.⁴

¹ Center for Disease Control and Prevention, <https://www.cdc.gov/nceh/features/leadpoisoning/index.html>

² Mt. Sinai Children’s Environmental Health Center,
<https://www.mountsinai.org/health-library/poison/lead-poisoning>

³ <https://www.pfas.des.nh.gov/health-impacts>

⁴ <https://apnews.com/article/firefighters-cancer-pfas-turnout-gear-chemicals-868e4eb6af158e7a34fb229c2dd79ebf>

The EPA is considering a maximum standard of 4 PPT (parts per trillion) in drinking water for six common PFAS, which is conceptualized as a drop in 20 Olympic pools.⁵ While the EPA controls a small number of common PFAS, there is no evidence other PFAS are any safer. A recent study estimated up to 38 pounds of PFAS are in a standard sized carpeted synthetic turf playing surface and they may leach out at various stages in the outdoor carpet life cycle. Further, up to 602 pounds can be used in the manufacture of the product.⁶

PAHs

Children can be exposed to polycyclic aromatic hydrocarbons (PAHs) while they interact with play area soil/rubber surfacing and absorb PAHs by dermal contact, inhalation and hand-to-mouth activity. The U.S. Department of Health and Human Services (DHHS) has determined that some PAHs may reasonably be expected to be carcinogens. A widely cited published research study concluded, children’s ***“cancer risk is approximately 10 times higher in poured rubber surfaced playgrounds than in uncovered soil playgrounds.”***⁷

In contrast, nature is one of the richest sources of microbial input, and reduced exposure to natural environments and biodiversity may adversely affect our microbiota and its immunomodulatory capacity.⁸ A review of multiple studies found “positive effects of nature exposure on immunological health parameters; such as anti-inflammatory, anti-allergic, anti-asthmatic effects.”⁹ ***In other words, playing in a natural setting with direct exposure to natural materials can actually improve our children’s health.***

When a child walks, runs, or falls on a surface an invisible cloud of dust from the surface surrounds them. In the case of rubber and plastic play surfaces, this dust cloud is a mixture of plastic, tire (and other particles that have fallen to the surface). Synthetic turf carpeting is also highly abrasive. Parents expect their children to skin their knees or get some bumps and bruises when they go out to play. Those are reasonable and expected risks. They do not expect their children to be exposed to harmful chemicals that may seriously damage their long-term health. Please protect our children. We urge a favorable report on HB1147.

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⁵ U.S. Environmental Protection Agency, <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>

⁶ Lauria, Melanie Z. et al, Widespread Occurrence of Non-Extractable Fluorine in Artificial Turfs, *Environmental Science Technology Letters*, 2022, p.666-672.

⁷ Tarafdar A, Oh MJ, Nguyen-Phuong Q, Kwon JH. Profiling and potential cancer risk assessment on children exposed to PAHs in playground dust/soil: a comparative study on poured rubber surfaced and classical soil playgrounds in Seoul. *Environmental Geochemistry and Health*. 2020 June

⁸ Anderson, Liisa, et al, Nature Exposure and Its Effects on Immune System Functioning: A Systematic Review, *International Journal of Environmental Research and Public Health*, 3 Feb, 2021

⁹ Ibid