

Committee: Environment and Transportation

Testimony on: HB1147 - Environment – Playground Surfacing Materials – Prohibitions

Organization: National Center for Health Research

Submitted by: Dr. Diana Zuckerman, President

Position: Favorable

Hearing Date: February 28, 2024

Dear Chair Korman, Vice Chair Boyce and Committee Members:

Thank you for this opportunity to express the views of the National Center for Health Research (NCHR) in strong support of HB1147.

I have lived in Montgomery County for over 30 years and been president of NCHR for 25 years. I am a scientist trained in epidemiology and public health, and NCHR is a nonprofit think tank located in Washington, D.C. Our scientists, physicians, and health experts conduct studies and scrutinize research. Our goal is to explain scientific and medical information that can be used to improve policies, programs, services, and products.

I am writing to share scientific information about the risks posed by certain playground surfaces that I have provided to Members of Congress, federal agencies, state and local legislators, parents, and others who want to ensure that our children are not exposed to dangerous chemicals when they play on playgrounds.

We understand that these issues are hotly debated, but some information is more accurate than others. For example, although PIP (poured in place) playground surfaces are attractive and seem safe if children fall, they are made with recycled tire crumb. After a few years, the top layer of rubber will wear off (especially in places where children are most active, such as the bottom of a slide or swing). The material underneath the top layer is typically granular and will seem quite interesting to small children, who will play with it and put **it in their mouths and pockets – sometimes even up their noses.**

In the last few years, scientists have learned more **about lead, other heavy metals, and PFAS in various playground surfaces.** Playground surfaces of loose tire crumb is especially dangerous, but the tire crumb beneath the top PIP rubber layer as well as the synthetic rubber surface has well-known risks, containing chemicals that have the potential to increase obesity; contribute to early puberty; cause attention problems such as ADHD; exacerbate asthma; and eventually cause cancer. When PFAS is in playground surfaces that is of particular concern because they enter the body and the environment as “**forever chemicals,**” which means that they are not metabolized and do not deteriorate, instead building up in a child’s body over the years. Recent research indicates that PFAS can cause liver damage and other serious health problems. PFAS from playground surfaces can also get into ground water, streams, etc. and from there into **drinking water.**

Federal agencies such as the Environmental Protection Agency (EPA) and the U.S. Consumer Product Safety Commission have been investigating the safety of these products, and I was recently a featured speaker at a national meeting of the Centers for Disease Control and Prevention (CDC) in Atlanta (<https://www.center4research.org/zuckerman-speech-cdc-clppp-2023-meeting/>) talking about the lead and other chemicals in tire crumb and PIP.

Lead

Lead can cause cognitive damage even at low levels. I'm sure you know that the American Academy of Pediatrics warns that **no level of lead is safe**, and the lead in tire crumb and lead dust on playgrounds is especially unsafe because it will get on children's hands and clothing, and they will breathe it in their mouth and lungs when they play. Some children are more vulnerable than others, and that can be difficult or even impossible to predict. Since **lead has been found in recycled SBR rubber**, it is not surprising that numerous playground surfaces made with either tire crumb or PIP have been found to contain lead. However, the lead doesn't just stay on the surface. With wear, the materials turn to dust containing lead and other chemicals that is invisible to the eye and is inhaled by children when they play.

Hormone-Disrupting Chemicals

Why are chemicals that are banned from children's toys allowed in areas used by children such as artificial turf and rubber playground surfaces? Synthetic rubber and plastic are made with different types of endocrine (hormone) disrupting chemicals (also called EDCs). There is very good evidence regarding these chemicals in tire crumb used in PIP and artificial turf, based on studies done at Yale and by the California Office of Environmental Health Hazard Assessment.[1] Rubber playground surfaces like EPDM contain many of the same dangerous chemicals as tire crumb, since they are very similar materials, all made from petroleum.

A 2018 report by **Yale scientists detected 92 chemicals in recycled tire crumb samples** from 6 different companies. Unfortunately, the health risks of most of these chemicals had never been studied. However, 20% of the chemicals that had been tested are classified as **probable carcinogens** and 40% are irritants that can cause asthma or other breathing problems or can irritate skin or eyes.[2]

There are numerous studies indicating that endocrine-disrupting chemicals (also called hormone-disrupting chemicals) found in rubber cause serious health problems. Scientists at the National Institute of Environmental Health Sciences (which is part of NIH) have concluded that unlike most other chemicals, hormone-disrupting chemicals can be **dangerous at very low levels**, and the exposures can also be dangerous when they combine with other exposures in our environment.

That is why the Consumer Product Safety Commission has banned numerous endocrine-disrupting chemicals from toys and products used by children. The products involved, such as pacifiers and teething toys, are banned even though they would result in very short-term exposures compared to playground surfaces.

A report warning about possible harm to people who are exposed to **rubber and other hormone disrupting chemicals** at work explains that these chemicals “can mimic or block hormones and disrupt the body’s normal function, resulting in the potential for numerous health effects. Similar to hormones, endocrine-disrupting chemicals can function at very low doses in a tissue-specific manner and may exert non-traditional dose–response because of the complicated dynamics of hormone receptor occupancy and saturation.”[3]

Studies are starting to demonstrate the contribution of skin exposure to the development of respiratory sensitization and altered pulmonary function. Not only does skin exposure have the potential to contribute to total body burden of a chemical, but also the skin is a highly biologically active organ capable of chemical metabolism and the initiation of a cascade of immunological events, potentially leading to adverse outcomes in other organ systems.

Scientific Evidence of Cancer and Other Systemic Harm

It is essential to distinguish between evidence of harm and evidence of safety. Companies that sell and install PIP often claim there is “no evidence children are harmed” or “no evidence that the fields cause cancer.” This is often misunderstood as meaning the products are safe or are proven to not cause harm. Neither is true.

It is true that there is no clear evidence that a PIP playground has caused specific children to develop cancer. However, the industry’s statement is misleading because it is virtually impossible to prove any chemical exposure causes one specific individual to develop cancer. As an epidemiologist, I can also tell you that for decades there was no publicly available evidence that **cigarettes or Agent Orange** caused cancer. It took many years to develop that evidence, and the same will be true for playground surfaces.

We know that the materials being used in **rubber playground surfaces contain carcinogens**, and when children are exposed to those carcinogens day after day, week after week, and year after year, they increase the chances of our children developing cancer, either in the next few years or later as adults. That should be adequate reason not to install them in Maryland. That’s why I have spoken out about these risks in my community and on the state and national level. The question must be asked: if they had all the facts, would Maryland communities choose to spend millions of dollars on playgrounds that are less safe than those made with engineered wood fiber?

I have testified about the risks of playground surface materials at the U.S. Consumer Product Safety Commission, the CDC, and EPA as well as state legislatures and city councils. I am sorry to say that I have repeatedly seen and heard **scientists and lobbyists paid by the recycled rubber industry say things that are absolutely false**. They claim that these products are proven safe (not true) and that federal agencies have stated there are no health risks (also not true). They also claim that the products do not contain PFAS or lead, but independent researchers find those claims are also false.

Dangerously Hot

Children enjoy playing in warm and sunny weather –but even when the temperature above the grass is 80 degrees Fahrenheit, we have found that rubber playground surfaces in

Maryland can reach 150 degrees or higher. A sunny 90-degree day is likely to be even hotter than 160 degrees on these surfaces. These temperatures can cause “heat poisoning” as well as burns.

Alternative Playground Surfaces

Engineered wood fiber products are a safe material for playground surfaces and are ADA compliant. Don't be fooled by other wood products, such as BrockFILL, which has been scientifically tested and found to contain PFAS, the “forever chemicals.” In addition, the Brock shock pad also tested positive to PFAS.

Conclusions

There have never been any safety tests required prior to sale that prove that synthetic playground surfaces are safe for children who play on them regularly. In many cases, the materials used are not publicly disclosed, making independent research difficult to conduct. None of these products are proven to be as safe as engineered wood fiber.

I would be happy to provide additional information upon request (dz@center4research.org). I am not paid to write this statement. I am one of the many parents and scientists who are very concerned about the impact on our children of chemicals and heavy metals in currently used playground surfaces.

Your support for this legislation can save lives and improve the health of children in communities throughout Maryland.

Officials in communities all over the country have been misled by the hype around tire crumb and related products. They were erroneously told that these products are safe. On the contrary, **there is clear scientific evidence that these materials are harmful.** The only question is how much exposure is likely to be harmful to which children? We should not be willing to take such a risk. Our children deserve better.

That is why we urge this committee to give HB1147 a favorable report. Thank you for considering our views.

Sincerely,



Diana Zuckerman, Ph.D.
President

References

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2. Benoit G, Demars S. Evaluation of organic and inorganic compounds extractable by multiple methods from commercially available crumb rubber mulch. *Water, Air, & Soil Pollution*. 2018;229:64. <https://doi.org/10.1007/s11270-018-3711-7>

3. Anderson SE and Meade BJ. Potential Health Effects Associated with Dermal Exposure to Occupational Chemicals. *Environmental Health Insights*. 2014; 8(Suppl 1):51– 62. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4270264/>