

**Why
Vermont
should
ban
artificial
turf with
PFAS**





What is artificial turf?

- Shock pad is polyethylene foam, polypropylene
- Backing is latex, polyurethane, polyolefin, or polypropylene
- Blades are made of nylon, polypropylene, or polyethylene fibers
- Infill can be organic or non-organic



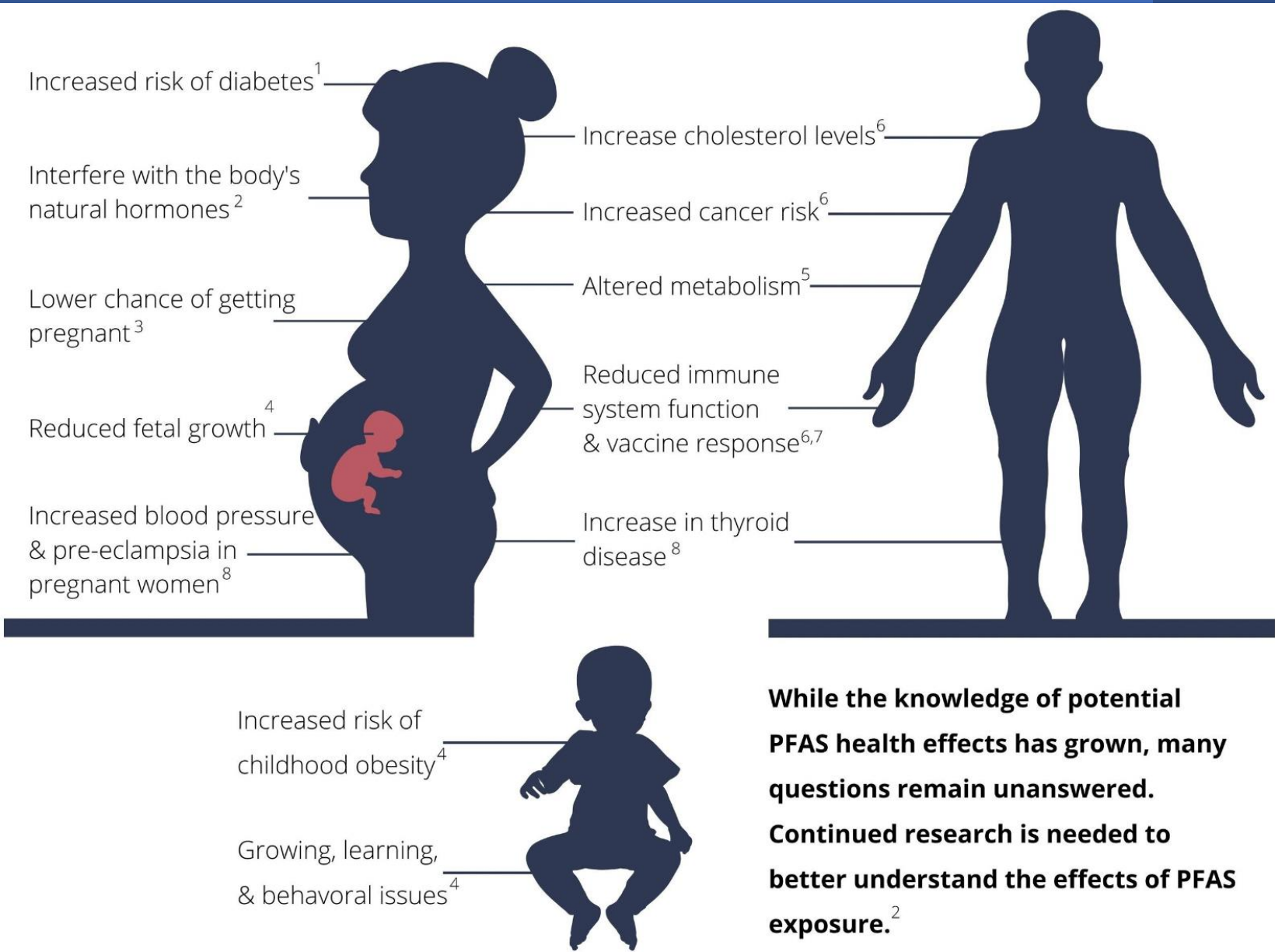
**For decades, we were
focused on
crumb rubber infill**



GOOD BYE
CRUMB RUBBER?

The infill is not our only concern

- In 2019, PEER and The Ecology Center discovered that artificial turf contains per- and polyfluoroalkyl substances (PFAS)
- Class of thousands of chemicals
- Nicknamed “forever chemicals”
- All are persistent because of C-F bond
- Many bioaccumulate
- All we have studied are toxic



While the knowledge of potential PFAS health effects has grown, many questions remain unanswered. Continued research is needed to better understand the effects of PFAS exposure.²

“Given fluoropolymers’ extreme persistence; emissions associated with their production, use, and disposal; and a high likelihood for human exposure to PFAS, their production and uses should be curtailed except in cases of essential uses.”

Are Fluoropolymers Really of Low Concern for Human and Environmental Health and Separate from Other PFAS?

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The high persistence of PFAS is sufficient for their management as a chemical class

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***Why* is PFAS in artificial turf?**

- PFAS act as an extrusion aid, so the molten plastic doesn't clog the machinery
- PFAS may also be added into the plastic itself



Why do we care about PFAS in artificial turf?

- Real world examples show that water around artificial turf quickly becomes contaminated
- In Martha's Vineyard, a study shows that 12 ppt of just 6 PFAS leach off a new field (more as the field ages)
- PFAS gets on the skin of athletes

How much PFAS leaches off?

- Dr Graham Peaslee at Notre Dame University estimates that one artificial turf field:
 - will leach 12 mg of PFAS/year
 - will contaminate roughly 800,000 gallons of water/field/year



Industry often claims their artificial turf is “PFAS-free”

- Every sample we have tested has PFAS
- Industry and consultants often use tests designed *not* to find PFAS (high detection limits, no SPLP)
- Or they say there is no “**intentionally added**” PFAS



**It is best to
stay away
from
“intentionally
added”
language**

- Currently, you bill defines “Intentionally added” as “the addition of a chemical in a product that serves an intended function in the product component.”

- Instead, try:
“Intentionally added” means any PFAS added to a product, or enters the product from the manufacturing or processing of that product, the addition of which is known or reasonably ascertainable by the manufacturer. “Intentionally added” PFAS also includes any degradation by-products of PFAS or the use of PFAS or PFAS precursors as a processing agent, mold release agent, or the creation of PFAS via chemical reactions.

Or, you can use:

“Intentionally added PFAS” means any of the following:

- (1) PFAS added to a product that have a functional or technical effect in the product, including the PFAS components of intentionally added chemicals and PFAS that are intentional products of an added chemical; or
- (2) PFAS used or produced during its manufacture or processing that is introduced into or onto the product. This includes any source of PFAS that is reasonably known or should be known to be present, including the use of processing agents, mold release agents, or fluorination.

A close-up photograph of a person's hand holding a bundle of artificial turf fibers. The hand is positioned in the lower-left foreground, with a black metal-link wristwatch visible on the left wrist. The background is a blurred view of a golf course with green grass and yellow mowed stripes under bright sunlight. The text is overlaid on the right side of the image.

Artificial turf sheds microplastics

- 218 kg/year (480 pounds/year)
- In Sweden, microplastics from turf = 15% of all MPs in water



Natural Grass Organic Athletic Fiel...



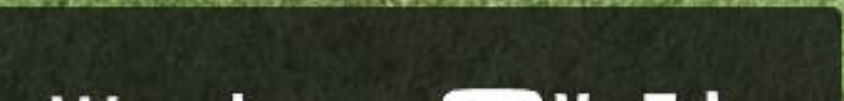
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What is the alternative?





Conclusion

