

From: [laura johnson](#)
To: [City Council](#)
Subject: Everett Herald Crumb Rubber/Cancer article
Date: Monday, May 15, 2017 4:57:19 PM

Shoreline Council Members

I am guessing that someone connected to industry has already forwarded the [Everett Herald article](#) to you, and if not you are sure to read it soon. Every time we begin to make some headway we receive push back and this just shows we have their attention. Given some recent local news, including the renewal of the [ban in Edmonds](#) and the [Resolution by the 32nd Legislative District Democrats](#), it is not surprising that they are releasing this now. I am working on a composed response but in the meantime please read the bullet points for a quick response:

- **There is no copy of the study available to review for content, etc. and it has yet to be peer reviewed.**
- **If answers were available for \$200,000, then they would have been provided long ago. This is more of the same limited and misleading "study" that has lead to the [position noted by the EPA](#)**

Toxic analysis for 50% of the chemical content of tires not known. This is an excerpt, full report attached. [EHHI's study done at Yale University](#) found 96 chemicals in the synthetic turf and rubber tire mulch used as surfacing in toddler playgrounds. Of the 96 chemicals detected — a little under a half have had never had toxicity assessments for their health effects. Of the rest, 20% are probable carcinogens.

[EPA Risk Assessment Forum Technical Panel \(2000\)](#). Supplementary Guidance for Conducting Health Risk Assessment of Chemical Mixtures. Thus far, risk assessments on crumb rubber, a complex chemical mixture, have not been done in a manner consistent with these guidelines. The guidelines define a complex mixture: “A mixture containing so many components that any estimation of its toxicity based on its components’ toxicities contains too much uncertainty and error to be useful. Risk assessments of complex mixtures are preferably based on toxicity and exposure data on the complete mixture...” Appendix B p.2

The [Marsili study of PAHs](#) clearly demonstrates that the estimated risk can be either less than one in a million or 1000 in a million depending on the type of model you use and assumptions made. The Marsili models only assessed the risk for a small subset of the toxic chemicals in tire crumb. The components based model typically used is theoretically

sound as long as there are fewer than 12 or so components and the toxicity of all the components is known. Neither of these is true for crumb rubber. No components based model can reliably estimate the toxicity of tire crumb simply because we have no toxicity information on half the ingredients in tire crumb. We do not have data on the carcinogenicity of tire crumb. However, we do know that the leachate from whole tires are acutely toxic to aquatic plants and animals. We also know that tire crumb is known to be toxic to many types of land plants.

- **Very little is understood on the synergistic effects of playing on/exposure to multiple chemicals.**

[According to the EPA:](#) Cumulative risk assessments may play a significant role in the evaluation of risks posed by pesticides, and will enable OPP to make regulatory decisions that more fully protect public health and sensitive subpopulations, including infants and children. The cumulative assessment of risks posed by exposure to multiple chemicals by multiple pathways (including food, drinking water, and residential/nonoccupational exposure to air, soil, grass, and indoor surfaces) presents a formidable challenge for OPP. This guidance takes into account the knowledge and methods available now for assessing cumulative risk, and provides flexibility for addressing a variety of data situations.”

“Regarding variability, the NRC (1994) recommends that EPA assesses risks to infants and children whenever it appears that their risks might be greater than those of adults. The report also encourages EPA to recognize the possibility of synergistic interactions when multiple chemical exposures occur and to consider extreme variability among individuals in their responses to toxic substances. A related issue is the problem of how risks associated with multiple chemicals are to be combined. EPA hopes to begin systematically addressing these issues in this framework.”

- **Regarding the Washington State DOH study. [This articles sum](#) it up pretty well. [And this letter to the WA DOH](#) supplies additional clarification, stating:**

- (1) The report uses an informal, incomplete list of cancer cases.
- (2) The reports present an invalid and misleading calculation of an “observed/expected” ratio.
- (3) The report considers an inappropriately wide range of ages. The average age of the soccer players on Coach Griffin’s national list is 20-21 years of age.
- (4) The report does not consider the length of exposure, latency period, or other important factors.
- (5) The report makes a number of misleading and confusing statements about its scope.

According to Clapp & Brown, the investigation of the relationship between artificial turf exposure and cancer risk should be “a valid population-based case-control study. Such a study would use the state cancer registry to identify cases of leukemia and lymphoma diagnosed in individuals aged 15-29 during the time period 2002-2015 or later. Controls would be identified from the school districts or towns of residence of the cases, and interviews would be conducted to gather information about artificial turf exposure as well as

other risk factors.”

Clapp & Brown noted that a population-based case-control study “would be time-consuming and potentially costly to undertake. However, it would be scientifically valid. This approach was used, for example, to investigate the childhood leukemia cluster in Woburn, Massachusetts and excess leukemia around the Pilgrim nuclear plant in Southeastern Massachusetts.”

While Clapp & Brown understood that Washington State the Department of Health “may not have had the resources to undertake a study of this kind,” they pointed out nevertheless that “in the absence of such a study, however, the conclusions drawn by the Department in its January 2017 report were inappropriate and irresponsible.... The Washington State Department of Health did not have sufficient data to make any statement regarding the safety of exposure to artificial turf fields containing infill made from recycled tires. The statements in the Executive Summary and in the conclusions are misleading and are likely to be used out of context by decision-makers.”

Hopefully this provides some clarity. It is my personal opinion that this is more of the same type of “limited” study that got us in this position to begin with.

Laura Johnson