



January 29, 2019

Park Board Commissioners
Vancouver Board of Parks & Recreation
2099 Beach Avenue
Vancouver, B.C., V6G1Z4

Park Board Commissioners:

I am writing from my perspective as a Professor on the Faculty of Health Sciences at Simon Fraser University about the Vancouver Park Board's endorsement of potential sites for a new Synthetic Turf Playing Field [1].

The focus of my research is to quantify and ultimately prevent disease and disability in children from exposures to toxic chemicals, such as lead, tobacco and pesticides. I am a physician with training in public health and over twenty years of research experience on the impact of toxic chemicals on children's health. I have served on various scientific federal committees, including the National Academies of Sciences, the Agency for Toxic Substances and Disease Registry and the US Environmental Protection Agency. I also served a 3-year term as a member of the Cincinnati Board of Health. My research on the epidemiology of lead was pivotal in quantifying the detrimental effects of low-level lead toxicity and led the World Health Organization and the U.S. Centers for Disease Control and Prevention to declare, "There is no safe level of lead in children's blood". My research was also cited as the key study for the US EPA dust lead standard and the US EPA lead national ambient air quality standard, among others.

Children are exposed to lead and other toxic chemicals in the rubber and plastic materials in artificial turf. You can see the material "burst" from the turf when children play on it or when a ball impacts it. To date, 52 of the 306 chemicals identified in crumb rubber infill are classified as carcinogens by the US EPA and/or the ECHA. [2] Yet, there are no long-term studies to quantify the extent of children's exposure to lead and other toxic chemicals found in synthetic turf playing fields. When the turf industry salespeople argue that artificial turf is safe, what they mean is that research and consequent lack of evidence of risk from established hazards have not yet been conducted [3].

We used to think that low-level exposures to toxic chemicals were too low to cause harm, but that is misleading. We described the impact of low-level exposures in the video, "The Impact of Toxic Chemicals on the Developing Brain". You can view it here: www.littlethingsmatter.ca

Independent studies are urgently needed. In the meantime, there should be a moratorium on further installations of artificial turf. If you do proceed with installing artificial turf, I urge you to

require that the companies who manufacture it or install it provide you with a legally-binding documents indicating that they will be responsible for any adverse health effects identified in the future, as well as the cost of removal and disposal of toxic material.

Too often, the costs of fixing problems from “innovative technologies” is borne by cities. Adopting the World Health Organization’s 14 Principles for Public Policy with respect to new technologies would help ensure that vulnerable populations are protected from potential harmful exposure and lead to cost savings in remediation. [4]

I would urge Park Board Commissioners to show leadership using the best available scientific research to invest in programs that promote health and reduce exposure to harmful substances.

I am hopeful that your Committee will be proactive in realizing that the toxic chemicals found in synthetic turf poses an unnecessary risk to children.

Best regards,



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1. Park Board Committee Meeting - Minutes Monday, October 2, 2017
2. Perkins, Inayat-Hussain, Deziel, Johnson, Ferguson, Garcia-Milian, . . . Vasiliou. (2019). Evaluation of potential carcinogenicity of organic chemicals in synthetic turf crumb rubber. *Environmental Research*, 169, 163-172.
3. Watterson A. (2017). Artificial Turf: Contested Terrains for Precautionary Public Health with Particular Reference to Europe?. *International Journal of Environmental Research and Public Health*, 14(9), 1050. doi:10.3390/ijerph14091050
4. WHO Europe. European Charter on Environment and Health; WHO Europe: Geneva, Switzerland, 1989.
5. Celeiro, Dagnac, & Llompart. (2018). Determination of priority and other hazardous substances in football fields of synthetic turf by gas chromatography-mass spectrometry: A health and environmental concern. *Chemosphere*, 195, 201-211.