

Office of Environmental Health Hazard Assessment

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Matthew Rodriguez
Secretary for
Environmental Protection



Edmund G. Brown Jr.
Governor

November 9, 2015

Linda S. Birnbaum, Ph.D.
Director, National Institute of Environmental Health Sciences
and National Toxicology Program
P.O. Box 12233
Mail Drop B2-01
Research Triangle Park, North Carolina 27709

Dear Dr. Birnbaum:

The California Office of Environmental Health Hazard Assessment (OEHHA) is engaged in a study to evaluate the health impacts of crumb rubber synthetic turf on players and by-standers in California. Our study is focused mainly on exposure aspects, as described in the attached scope of work for our study. However, there are a number of uncertainties regarding the toxicological impacts of exposure to chemicals released from synthetic turf, ones that OEHHA is not able to address with current resources. OEHHA therefore requests the National Toxicology Program (NTP) to conduct toxicological studies to facilitate understanding of the health impacts of chemicals released from synthetic turf.

Because exposures are ongoing and involve children, there is an urgent need for information on toxicological effects in the near term. Thus, short-term in vivo and in vitro toxicology studies on crumb rubber could be particularly helpful, especially if the results of any such studies could become available within the next 18 months. Because of NTP's deep expertise in toxicity testing and study design, we defer to you to evaluate the best form of study, although we would welcome the opportunity to discuss possible protocols with you.

Crumb rubber is made from waste tires and is used in the manufacturing of synthetic turf and playground mats. Tires are composed of natural rubber, synthetic polymers, carbon black, metals, and additives that make the material resistant to degradation. Some of these materials are known to pose human health risks. Exposures occur via all routes, as dust and volatile organic compounds (VOCs) released from synthetic rubber are inhaled, crumb rubber particles can be ingested, and a good deal of skin contact occurs during play on synthetic turf fields. Health concerns of using crumb

California Environmental Protection Agency

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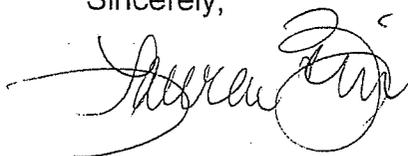
rubber in synthetic turf fields and playground mats have been heightened by several recent national television and newspaper reports suggesting that crumb rubber might have caused cancer in young athletes. Lymphoma and leukemia have been the focus of many reports, but others such as cancer of the brain, testis, and thyroid were also mentioned. As a result of these health concerns, many states and cities have tried to pass laws and ordinances banning the use of crumb rubber in athletic fields.

Under a contract with the California Department of Resources Recycling and Recovery, OEHHA is conducting a three-year study evaluating exposure to chemicals that may be released from crumb rubber. The study is focused on the potential health impacts on young athletes and children, who are among the most highly exposed. As part of the study, we searched the literature and found over 200 chemicals that may be released from crumb rubber, including, but not limited to metals, VOCs, and polycyclic aromatic hydrocarbons (PAHs). We found many of them have limited toxicity information and have no established toxicity criteria.

Given the timeframe for our study, short-term toxicology studies of crumb rubber exposure may be the most informative, especially if they could include endpoints with relevance to hematopoietic cancers. This would address, to a certain extent, the health concerns of chemicals with little or no toxicity data and also potentially the possible synergistic effects of multiple chemical exposures. OEHHA believes information generated from these short-term toxicity studies would provide valuable information to address the public's concerns on the health impacts associated with use of crumb rubber in synthetic turf fields and playground mats.

Thank you for your consideration of this request. If you have any questions or wish to discuss OEHHA's study or our request, please contact me at Lauren.zeise@oehha.ca.gov (510-622-3195) or Dr. Melanie Marty at Melanie.marty@oehha.ca.gov (916-323-8808).

Sincerely,

A handwritten signature in black ink, appearing to read "Lauren Zeise", written in a cursive style.

Lauren Zeise, Ph.D.
Acting Director

Enclosed: Scope of Work of the OEHHA Synthetic Turf Study

cc: See next page.

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cc: John Bucher, Ph.D.
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Melanie Marty, Ph.D.
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