



Environmental Health Study of Synthetic Turf

The California Office of Environmental Health Hazard Assessment (OEHHA) is beginning a study of the potential health effects associated with synthetic turf and playground mats containing recycled waste tires. The Department of Resources Recycling and Recovery (CalRecycle), which regulates the use of waste tires in California, has contracted with OEHHA to perform the study.

What will OEHHA study?

The study will assess the potential health impacts associated with playing on synthetic turf fields and playground mats. It will examine athletic fields and playground mats made from crumb rubber, which consists of pieces of recycled waste tires. Major parts of the study include:

- Identifying and analyzing chemicals released from crumb rubber and artificial grass blades in synthetic turf from indoor and outdoor fields throughout California.
- Examining chemical releases from fields of various ages and under various weather conditions.
- Monitoring the air above fields and playgrounds for specific chemicals that can be inhaled.
- Evaluating exposures to chemicals released from crumb rubber and synthetic grass blades that may occur through swallowing and contact with skin.
- Assessing the extent to which athletes can be exposed to these chemicals, based on their athletic activities and how often they play on the fields.
- Considering the possible effects on individuals with varying levels of exposures to synthetic turf.
- Evaluating how exposures to chemicals in synthetic turf may vary by age group.
- Examining the ways that sensitive populations, such as children, may be more vulnerable to exposures than others.
- Developing a study protocol for measuring exposures to chemicals from synthetic turf through personal monitoring of athletes and/or measuring the chemicals in blood, urine or other bodily fluids. (The current study plan does not call for



personal monitoring or measuring chemicals in bodily fluids, but these studies could take place after completion of the current study if they are needed.)

- Conducting an assessment of potential health impacts associated with use of synthetic turf and playground mats, taking into account the findings of the above activities.

What information will the study provide?

The information should enable OEHHA to identify exposures to chemicals that occur when people play on synthetic turf and playground mats, estimate the levels of exposures that may occur from various activities, and assess whether these exposures pose potential health risks. CalRecycle will use this information in making future decisions regarding the use of crumb rubber in synthetic turf and playground mats.

How will OEHHA conduct the study?

OEHHA will begin the study with public meetings in Northern and Southern California to seek input from the public. OEHHA will also convene a panel of scientific experts in exposure and biomedical sciences to provide advice on the development of the study. All meetings of the panel will be held in public, with opportunity for the public to comment. The first public meeting of the panel will be held in early 2016, and panel meetings will continue periodically throughout the study.

The study is scheduled for completion in June 2018. Prior to completion, there will be a series of public workshops to gather comments on the draft assessment of potential health impacts associated with use of synthetic turf fields and playground mats.

Has OEHHA studied synthetic turf in the past?

In 2007 and 2010, OEHHA conducted two studies on the potential human health effects associated with use of recycled waste tires in playground and synthetic turf products. These studies evaluated key aspects of synthetic turf, including inhalation of chemicals, bacterial infections, and skin abrasions. OEHHA's current effort will fill in data gaps and address the risks from chemical exposures resulting from ingesting crumb rubber from synthetic turf during athletic activities. The California Integrated Waste Management Board, which has since been reorganized as CalRecycle, contracted with OEHHA to perform these two studies:

- [Evaluation of Health Effects of Recycled Waste Tires in Playground and Track Products](#), January 2007

Office of Environmental Health Hazard Assessment (OEHHA)
California Environmental Protection Agency



- [Safety Study of Artificial Turf Containing Crumb Rubber Infill Made From Recycled Tires](#): Measurements of Chemicals and Particulates in the Air, Bacteria in the Turf, and Skin Abrasions Caused by Contact with the Surface, October 2010

These studies can be found at: <http://oehha.ca.gov/risk/SyntheticTurfStudies.html>.

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