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Safe Schools Agenda

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A monthly service provided to help you with your efforts to make your school safe for students, staff and the public

The Synthetic Turf Controversy

Schools and municipalities have installed over 3,500 artificial turf replacements of grass fields in the past few years. The artificial turf typically uses recycled rubber tires in its base in the form of crumb rubber. The advantages are purportedly reduced maintenance and watering, avoiding the need for pesticides, reduced injuries, and an “all-weather” playing surface. The controversy has arisen primarily because lead has been detected in some artificial turf fields.

Lead is a neurotoxin that can cause learning disorders, brain and nerve damage, hearing problems, stunted growth, and digestive problems. To date there are no federal guidelines for acceptable levels of lead in artificial turf.

In the past year, much has been published about this controversy on the internet (Google “artificial turf”). The following is an attempt to trace the various findings and recommendations.

Last April, the New Jersey Department of Health and Senior Services (NJDHSS) and the federal agency for Toxic Substances and Disease Registry/National Center for Environmental Health (ATSDR/NCEH) were investigating a contaminated scrap metal facility in the city of Newark. One of the contaminants at the facility was lead. Next door, children were playing on an athletic field. The investigators decided to test the athletic field to see if lead from the original site was migrating to the school site.

When the test samples were analyzed in the laboratory, high levels of lead were found in the

dust. The source of the lead was the artificial turf fibers, not the scrap metal facility.

NJDHSS went on to test turf fiber samples from 12 other fields around the state. Two of the fields with nylon fibers had high levels of lead. The lead concentrations were 3,400 and 4,100 milligrams of lead per kilogram of fiber. New Jersey’s cutoff for cleanup of lead from contaminated soil is only 400 mg/kg.

NJDHSS also tested artificial turf samples from consumer products and found two that tested high – at 4,700 and 3,500 mg/kg. Take note if you have purchased artificial “turf” or “grass” from you local home improvement store.

Lead is hazardous to young children. NJDHSS did not know if lead that is in artificial turf (it is used for coloring) can enter a child’s body as easily as lead in lead-based paint or contaminated soil does. The U.S. Consumer Product Safety Committee was asked to conduct a larger study of artificial turf for lead. NJDHSS also expressed concern about other aspects of artificial turf fields such as crumb rubber, heat, and bacteria.

NJDHSS recommended that in the interim, artificial turf vendors be asked to conduct appropriate testing and if a field is found to have high lead levels, owners should consider limiting access, especially to children under seven (7) years of age. They also recommended watering the field before and after utilization, encouraging individuals to aggressively wash after using the field, and washing their clothes separately.

In August, NJDHSS published an update. Further testing on their part showed that lead can leach out of the turf fibers and dust during digestion, and could therefore enter a person's blood. **The CPSC found that there were elevated lead levels in some artificial turf fibers, especially in older turf fields.**

NJDHSS expressed the belief that lead from artificial turf fields would not result in lead poisoning among children, but remained concerned about cumulative lead exposures from all lead sources and whether lead from older artificial turf field adds to these exposures.

Meanwhile, numerous artificial turf fields and playgrounds were shut down in New Jersey, New York City and upstate New York because of rising public concern. In June, California Safe Schools sued the retailers and manufacturers of artificial turf in an attempt to force them to reformulate their products to eliminate lead.

Also in June, the Center for Disease Control and Prevention (CDC) published a Health Advisory indicating that NJDHSS tested some fields that were old, used frequently and therefore, can break down into dust. **CDC expressed the belief that the harmful exposure to lead is low from new fields.** CDC recommended that until further guidance is available:

- ✓ Test turf that has fibers that are abraded and have nylon or nylon-blend fibers.
- ✓ If more than 400 ppm lead, do not allow use by children under the age of six (6) years.
- ✓ Not testing turf made from polyethylene-only fibers.
- ✓ Not testing turf made from nylon or nylon blends that is not worn and does not contain visible dust.
- ✓ Replacing worn turf fields as soon as possible.

On July 30, CPSC released the results of its evaluation of artificial turf fields. **It concluded that “Young children are not at risk from exposure to lead in these fields.”** CPSC further asked that voluntary standards be developed for synthetic turf to preclude use of lead in future products.

The Synthetic Turf Council, an industry organization, has published “Frequently Asked Questions” which gives pretty good background but minimizes the question of possible lead pollution. The industry says the controversy is based on scientifically flawed studies, but at least one manufacturer is changing its process to remove potential toxins.

That seems to be where the controversy rests. Although the experts at the federal level and the industry say there is no immediate danger to children who use artificial turf fields, there is concern about cumulative ingestion of lead from nylon based turf. If you have artificial turf at your facility, you would be well advised to get on top of the situation before it becomes a public concern.

- ✓ Determine the composition of the artificial turf; if it is nylon, or a nylon derivative, have it tested for lead, even if it is fairly new.
- ✓ If a field is found to have high levels of lead, limit access for children younger than 6.
- ✓ Have children who do use the field wash hands, face, and body after using the field.
- ✓ Have children take off clothes worn on synthetic surfaces, turn them inside out and wash separately.
- ✓ Water the fields before and after use to reduce the dust.
- ✓ Before having a new surface installed, ask the vendor to test (and verify) for contaminants.
- ✓ Be sure to follow the manufacturer's directions for ongoing maintenance, especially in regards to cleanliness. (Where do contaminants like blood, etc. go?)

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