



Questions and Answers About Artificial Turf

Q. What's wrong with using crumb rubber to cushion artificial turf fields?

A. The crumb rubber from used vehicle tires contains a myriad of toxic, restricted-use chemicals, including heavy metals, benzene, carbon black and volatile organic compounds (VOCs). Many of the chemicals are known carcinogens, neurotoxins and endocrine disruptors. Student athletes can be exposed to these highly toxic substances through inhalation, skin absorption and accidental ingestion, all of which can easily occur during normal sports activities. A single synthetic turf field can use up to 40,000 used vehicle tires.

Q. What other chemicals may be found on artificial turf fields?

A. Many synthetic turf fields have been found to contain lead. The green pigment used in the synthetic “grass” carpets and blades can contain lead. As the fields age and the elements fade and break down the plastic, it begins to powder, making the lead more accessible. The crumb rubber may also contain lead from tire balancing weights and lead paint residue picked up from road surfaces. Lead is a potent neurotoxin and even tiny amounts can affect the brain, especially in young children. There is no safe lead exposure level for children.

Q. Are high temperatures on these fields a problem?

A. Yes. The surface temperature of artificial turf fields on hot, sunny days can reach 180F or higher. High-powered water cannons can be used to cool down unsafe surface temperatures, but this is only temporary, as it takes only about 20 minutes for the temperature to rebound to the unsafe level.

On hot, sunny days, water cannons must be used repeatedly to keep field surface temperatures down and reduce the risk of serious heat related illnesses as well as burns to the soles of the feet of the athletes.

Q. Why do artificial turf fields require disinfecting chemicals (pesticides)?

A. An artificial turf field must be disinfected regularly to remove disease-causing pathogens from body fluid spills such as blood, vomit, sweat and saliva. The use of these chemical pesticides can present their own health risks, whereas natural grass fields have the advantage of soil microbial activity, which helps to break down contaminants through natural processes. Additionally, skin abrasions (turf burns) are more common on artificial turf fields and are typically larger in size, providing more opportunity for antibiotic resistant infections, including MRSA. Medical experts have found that staphylococci and other bacteria can survive for more than 3 months on polyethylene plastic, the material used in the manufacture of artificial turf carpets and grass blades.

Q. Aren't artificial turf fields safer for young athletes?

A. Although there is not enough research yet comparing injuries incurred on artificial turf with those occurring on natural grass fields, there is compelling data indicating that joint injuries (especially ankles and knees) are more common and more severe among athletes playing on artificial turf. A painful and debilitating condition called “turf toe” is unique to athletes playing on artificial turf surfaces, and many professional athletes report increased fatigue and greater muscle soreness when playing on these surfaces.

Q. Don't artificial turf fields reduce the use of chemical pesticides that can be harmful to children?

A. No! Artificial turf is **not** a solution for the problem of chemical pesticides. The often-used argument that artificial turf decreases the use of chemical pesticides wrongly assumes that these chemicals are required for natural grass. They are not. In fact, organically maintained natural grass uses no chemical pesticides, and new technologies and equipment make maintaining natural grass playing surfaces easier than ever before. Properly maintained grass fields can stand up to heavy use and are completely safe for users, from young soccer players to high school football teams.

Q. Aren't these fields considered safe by the government?

A. Actually, no. Both the Consumer Product Safety Commission and the United States Environmental Protection Agency have withdrawn safety assurances for recycled rubber tire products, including artificial turf. The EPA has posted new cautions concerning unexplored chemical exposure to more than 30 compounds found in artificial shredded tire infill and encouraged future studies to enable more comprehensive conclusions.

Q. Aren't artificial turf fields better for the environment?

A. Absolutely not. Artificial turf fields appear dark when photographed from the air because of the black crumb rubber infill, and like tar roofs, contribute to a "heat island" effect. In addition, these fields, made from petroleum, are unable to convert carbon dioxide into oxygen or store carbon in their biomass as grass fields do.

Q. Isn't there a federal study being conducted to determine the safety of these fields?

A. A study was started, then suddenly de-funded. Nevertheless, emerging health impacts of synthetic turf are causing concern among parents, coaches and school administrators. There are confirmed reports of a growing incidence of lymphoma and leukemia as well as other diagnoses among student athletes playing on artificial turf fields filled with crumb rubber, particularly among soccer goalies. While no peer-reviewed studies have been conducted to confirm or disprove a link, there is a call for independent, scientific research and the establishment of a health agency registry to track athletes who've been diagnosed.

This document is part of **The ChildSafe School Program** created by Grassroots Environmental Education, a science-based non-profit organization.

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