



## Questions and Answers About Turf Pesticides

**Q. *Isn't it necessary to use chemical pesticides to keep playing fields in top condition?***

A. Absolutely not. The fact is that playing fields maintained without toxic chemicals can perform just as well as any chemically maintained turf with even greater resiliency, softer playing surface, less water consumption and greater drought tolerance. Naturally maintained fields typically require aeration, regular over-seeding and the periodic application of natural soil amendments (compost or compost teas) and fertilizers.

**Q. *What health effects have been associated with chemical pesticides?***

A. Many of the chemicals found in pesticide products used on playing fields have been associated with an increased risk of serious acute and chronic health problems, including asthma, certain types of cancer, nervous and immune system damage, liver or kidney damage, reproductive impairment, birth defects and damage to the endocrine system. Since the development of disease in humans is a very complex process with many genetic and environmental factors playing a role, any toxic pesticide exposure should be avoided.

**Q. *How are children exposed to turf pesticides?***

A. Children come into close contact with turf pesticides on playing fields during practices and games. As they roll, slip, slide and fall, their hands, arms, legs and faces are contaminated with pesticides that may have been used on the fields. Typical routes of exposure include inhalation, skin absorption and accidental ingestion. The normal hand-to-mouth behavioral patterns of younger children further amplify their exposure. Additionally, sports gear and water bottles are often thrown down on the turf where they can be contaminated with pesticides and then transferred to athletes when they drink or use the equipment. Pesticide residues tracked indoors on the

soles of sneakers or athletic shoes may wind up inside schools or homes where they can remain active for long periods of time.

**Q. *Are children more vulnerable to pesticides than adults?***

A. Yes. Children's bodies are undergoing rapid growth and development which put them at unusual risk for exposure to toxic chemicals. They also have higher rates of respiration and more skin surface area per unit of body weight. There are certain times during childhood, so-called "windows of vulnerability," when development of organs or body systems can be disrupted from even low-level exposures to toxins. Additionally, most major classes of pesticides have been shown to adversely affect the developing nervous system which begins at about two weeks of gestation and continues through adolescence. Lastly, children have more years of life ahead of them compared to adults, so they have a longer time to manifest the health effects associated with pesticide exposures.

**Q. *Is artificial turf a good solution?***

A. Artificial turf is being promoted as a cost-efficient, environmentally and user-friendly product. However, questions concerning the potential health risks, both to young athletes and the environment must be addressed. (See "Ten Things You Should Know About Synthetic Turf") Here are a few of the issues:

Ground tire rubber is commonly used in the construction of artificial fields as an impact softening base. This material, typically contaminated with toxins (including heavy metals), prohibits its disposal in landfills or ocean dumps. An analysis of the ground rubber and other components to detect toxic metals and polycyclic aromatic hydrocarbons (PAHs) as well as other toxins should be required before a contract is signed. Inhalation or accidental ingestion of the rubber turf dust or particulates should be considered for their short- or long-term health effects.

*(over, please)*

Temperatures on artificial fields are significantly higher than those on natural grass fields, with one documented artificial field surface measuring 180° F when a natural grass surface in the same location was measured at 93.5° F. These high temperatures may make fields unplayable for safety reasons. Note: Watering an artificial surface may reduce the field temperature but create an unsafe playing condition.

Field sanitation that removes body fluids and bird or animal droppings must also be considered when deciding to install an artificial field. The toxicity and efficacy of the cleaning chemicals should be explored, along with considerations as to whether the chemicals or the scrubbing process will invalidate the surface's warranty or decrease the life expectancy of the product. It has been shown that staphylococcus bacterium can have an abnormally high presence on artificial fields.

Environmental concerns range from toxic gas emissions in the event of a fire to the pollution of surface or groundwater from runoff. The eventual disposal of the artificial field when replacement becomes necessary must be addressed with local waste facility managers and hazardous waste experts. Watering the field to reduce temperatures may encourage algae or weed growth that will require special and potentially polluting remedies. (Algaecides and fungicides are not labeled by the EPA for use on artificial turf because of runoff potential.

Natural turf reduces temperatures, breaks down pollutants with soil biology, filters rainwater, facilitates recharge of groundwater and reduces global warming by sequestering carbon. Artificial turf offers none of these environmental benefits.

***Q. Have any state governments acted on the issue of turf pesticides?***

A. Yes. In the spring of 2010, New York became the first state in the nation to ban the use of chemical turf pesticides on school grounds and playing fields for students in grades K-12. The ban takes effect in the spring of 2011. It also applies to day care centers. Connecticut banned the use of pesticides on school grounds for grades K-8. Its law took effect in July 2010. Other states are currently considering similar legislation.

Many states have notification laws, under which parents must be notified if their child's school field is to be treated with pesticides. Such laws vary by state and could differ as to time frame and method of notification. It is important to find out if your state has such mandates, and if the school is properly notifying parents and staff. This may mean looking to the school website or handbook for more information. It is critical to know when pesticides will be sprayed so as to protect your children, especially if they are overly sensitive to chemical exposures.

This document is part of **The ChildSafe School Program** created by Grassroots Environmental Education, a 501 (c) (3) non-profit organization.

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