



Synthetic Turf

Is synthetic turf a safe, sustainable and environmentally friendly option for athletic fields as it's being touted?

Synthetic turf contains many toxic chemicals:

Heavy metals, flame retardants, PFAS, PAH's, carcinogens and endocrine disruptors are some of the substances present in synthetic field components. For several of the compounds, including some found in the artificial turf, we know there is no safe level of exposure, e.g., lead. Lead and other toxins in the rubber infill material are readily available to children who play on the artificial turf.

Synthetic turf requires the use of many different chemicals:

Bodily fluids and more come in contact with the playing surface - think blood, sweat, vomit, and animal feces. This requires using chemical disinfectants. Then there are chemicals for gum, chemicals for oil and grease, chemicals for moss/algae, and chemicals for fungus. Many of these products are registered with the EPA as pesticides. Herbicides are also used to remove weeds because mechanical removal is not possible without damaging the plastic carpet. This is all part of regular maintenance.

Synthetic turf degrades over time with a corresponding release of contaminants:

The toxins in the artificial turf may become more available as the artificial turf ages and disintegrates. Factors that influence the aging of synthetic turf materials are poorly understood and need further research. Because of the complex actions of oxygen, ozone, sunlight, and water on rubber and plastic degradation, and the significantly variable

conditions of artificial turf fields, it is necessary to study the degradation of all synthetic turf components under relevant conditions over their functional lifetimes.

There remains a significant knowledge gap that must be urgently addressed with the fast expansion of the artificial turf market. Research exists to support that given the wide range of designs, ages, and conditions of artificial turf fields, the contaminant release and the environmental impacts are highly variable from site to site. One study has called for the testing of every artificial field to measure its risk to players, especially children.

Synthetic turf contributes to climate change:

Production and transportation of artificial turf release large amounts of greenhouse gasses (GHGs). The fields reflect heat creating a "heat island effect" and as the plastic breaks down it releases more GHGs. Covering the soil also inhibits its ability to retain carbon.

Synthetic turf creates thousand of pounds of waste per field:

1 million to 4 million tons of synthetic turf waste needing disposal are expected in the next 10 years. Artificial turf is disposed of in landfills at the end of its functional life as currently no facilities exist in the U.S. to handle recycling. Even if it becomes available, recycling is not a long-term solution. The best way to stop plastic waste is to eliminate it at the source.

Synthetic turf increases risk of injury:

Due to the lack of transpiration and heat trapping in the plastic and rubber materials, the surface temperature of artificial turf is elevated (up to as much as 70 degrees higher than the surrounding air) under direct sunlight. This increases risk of heat related illness. “Turf burn” and “turf toe” are injuries unique to synthetic fields. The potential health risk of skin abrasions are increased by the pathogens present in field components like staphylococcus and MRSA. The largest epidemiological high school football concussion study to date found that synthetic turf outweighed all other mechanisms of injury including helmet to helmet and grass. Almost 90% of all injuries occurred on synthetic turf-based surfaces. More lower extremity injury has been documented on synthetic turf compared to natural grass.

Synthetic turf is very expensive:

The Toxics Use Reduction Institute at UMASS Lowell concludes that, “In nearly all scenarios, the full life-cycle cost of natural turf is lower than the life-cycle cost of a synthetic turf field for an equivalent area.” Maintenance costs are about the same on average, and installation of synthetic is significantly higher. Add to that the cost of removal, disposal, and replacement every 5-10 years for synthetic.

Natural grass is a durable and safe sports surface when properly maintained:

Organically maintained grass fields are documented to get over 1,000 hours of use for practice, play, and informal activity annually.

The turf grass industry has been making significant progress in developing new types of grass to meet the water challenges and the increasing environmental concerns associated with fertilizer and pesticide applications. Improved turf grasses can be extremely drought-tolerant, tough, and fast-growing, while having lower requirement for fertilizers and maintenance. Organic practices can eliminate most of the environmental issues associated with chemical fertilizers and pesticides while being the most cost-effective.

We simply do not understand all of the long-term environmental and public health impacts of synthetic turf, but the information to date is cause for great concern. Organic natural grass is the cost-effective, known safe alternative.

