



August 11, 2008

Sports

## High Temps On Turf Fields Spark Safety Concerns

by Allison Aubrey

[Listen Now](#) [5 min 18 sec] [add to playlist](#)

Morning Edition, August 7, 2008 · Lots of coaches and players love the benefits of artificial fields. There's no practice time or games lost to muddy conditions, and the fields are easy to maintain. They require no pesticides or water. But increasingly, municipalities are raising questions about extremely high temperatures on the playing fields when the weather is hot and sunny.

The first evidence of a "heat island" effect came a few years ago, when Columbia University climate researcher Stuart Gaffin analyzed thermal images generated from NASA satellite maps of New York City. He wanted to figure out how urban trees may help cool down neighborhoods. When Gaffin noticed a bunch of hot spots on the maps, he assumed they were rooftops. But he wanted to know for certain.

"So we picked five or six really hot locations in the Bronx and went to visit them, and two turned out to be turf fields" says Gaffin. In retrospect, he says he should have realized that, because they're a perfect sunlight-absorbing system.

### Temperature Check

To understand just how hot the synthetic fields can get, we visited Riverside Park in Manhattan with Geoffrey Croft, founder of NYC Park Advocates.

Carrying a thermometer, Croft stood at the periphery of one of the turf fields that's used for a soccer camp.

In the shade it's 86 degrees. But out in the center of the soccer field where kids are playing soccer, the sun is directly overhead. Holding his thermometer waist-high, he gets a reading of 160.6 degrees Fahrenheit.

Croft is surprised. "It's way higher than I thought it would be," he says.

As the coaches call a water break, which they do every 15 minutes or so, a group of 8- and 9-year-olds stands dripping in sweat.

"It's hot," says 8-year-old Michael-Luca Natt. "Very hot." Nearby, two more day-campers, Max Rana and Billy Hurwitz, say it can be hard to keep playing when it's so hot on the field.

### Heat-Trapping Recycled Tires

Part of what's trapping the heat are bits of ground-up recycled tires used by the manufacturers to cushion the turf. When Croft bounces a ball on the field, bits of the black rubber bounce back up with it.

"It's getting all over my leg," Croft points out as the ball bounces. The kids attending the camps show me how the crumb rubber gets in their hair and in their shoes.

The Synthetic Turf Council is an industry group that represents manufacturers of the products. The group says using recycled tire rubber is a cost-effective way of making the surfaces more resilient. The group is aware of

reports of 160-degree temperatures on the fields.

"I don't think anyone in our industry would suggest it's a good idea to play on a surface that's that hot," says Rick Doyle, president of the council.

Doyle says he knows of no documented cases of people being injured. It's more of a management issue, he says.

"Just as coaches have to reschedule games due to rain when they play on grass fields," he says, so too they need to reschedule or consider an alternative surface to play on when it's hot and sunny.

### **Concerns Over Chemicals**

A number of cities and municipalities, including New York City, have many days of very warm and sunny weather.

Coach Mike Handell has permits to run baseball camps in Riverside Park. He says there are only so many green spaces in New York, and increasingly they're being converted to synthetic turf.

Handell says he likes the fact that the fields don't get dry and dusty. But he knows they're hotter, and he's heard concerns about the chemicals found in the recycled tires.

"If they're unsafe. I want to know. I'm mean I'm personally interested because I have permits for these fields," he says, and kids are playing on them.

### **Heat Is Primary Concern**

The New York City Health Department hired consultants to assess potential health risks associated with crumb-rubber turf fields. The report concludes that the risk of harm from exposure to hazardous chemicals such as lead in the rubber appears to be very low unless the chemicals are basically eaten.

According to the report, another possibility is that players may inhale chemicals that vaporize to form a gas. Health assessments suggest that the exposure levels are likely below a level of concern to human health. But these assessments use conservative estimates of exposure. The report says additional studies measuring chemical exposures of players on turf fields should be conducted "to give more representative data on exposures related to urban field use."

Since crumb-rubber turf absorbs and retains heat, the NYC Health Department report says heat is the primary health concern associated with playing on the fields. It says people can suffer dehydration, heatstroke and thermal burns at field temperatures above 115 degrees.

Based on these concerns, the New York City Parks Department has now decided to move away from using recycled-tire rubber in new turf fields. Commissioner Liam Kavanaugh says decisions have already been made regarding a couple of installations.

"We have two fields in construction where we've actually canceled the black crumb rubber and are actively looking for an alternative," Kavanaugh says.

The state of Connecticut has committed \$200,000 to conducting exposure studies, with testing scheduled to begin this fall.

The industry has offered up a couple of options, including a sand-based fill. The Synthetic Turf Council says one company, Mondo, advertises that its Ecofill is "up to 50 percent cooler." And another company that markets a product called "Cool Grass" synthetic yarn says it can reduce surface temperatures on synthetic turf by up to 35

percent.

"Technology is evolving all of the time," says the council's Doyle. Yet many of these new products can be quite a bit more expensive.

Kavanaugh says he's hopeful one will work since, overall, the city likes the low-maintenance artificial turf.

But Columbia University researcher Gaffin says he's skeptical. He says even without any black rubber added, the plastic blades of grass in synthetic turf trap a lot of heat.

"They're spongy and lightweight — and that means the solar energy that's absorbed quickly gets converted to high temperatures," he says.

Without the natural system of evaporation that living grasses have, everything's working in one direction to turn sunlit turf fields into heat islands, he says.

### **Related NPR Stories**

March 12, 2005

[N.L. Leaves Artificial Turf In The Dust](#)

Nov. 9, 2004

[Finding Profitable New Uses For Recycled Tires](#)

Oct. 16, 2004

[A Cemetery Switches To Artificial Turf](#)

June 17, 2004

[The Pleasures Of Artificial Grass](#)

## **[Share this Page](#)**

Share this page using one of the following services:

- [Del.icio.us](#)
- [Digg](#)
- [Facebook](#)
  
- [Mixx](#)
- [Reddit](#)
- [Stumble Upon](#)
  
- [Yahoo! Buzz](#)

[What is this?](#)

