

# Expert Opinions on Crumb Rubber

## Who Said It?

Dr. Gaboury Benoit, PhD, Yale University Professor of Environmental Chemistry and Professor of Environmental Engineering conducted the Yale crumb rubber study commissioned by EHHI.

## Quotes:

“What we found is that a large number of [the chemicals in crumb rubber] are classified either as carcinogenic or as irritants of some kind, including respiratory irritants and those are one that can be harmful to folks with asthma.”

“The shredded tires contain a veritable witches’ brew of toxic substances. It seems irresponsible to market a hazardous waste as a consumer product.”

## Conversation:

During a conversation with Jessica Leaven, Dr. Benoit said that the Yale Study has been peer reviewed and accepted for publication in late December or early January. He also said that rubber mulch is not cheapest playground surface material, and economists who have evaluated rubber mulch have concluded that it is a more expensive option. Rubber Mulch does have to be filled in, and it must be completely replaced at 10 years because it breaks down and creates black dust. He said that he has children, and he would not allow them to play on soccer fields or in rubber mulch playgrounds.

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## Who Said It?

Dr. David R. Brown: ScD Public Health Toxicologist Director of Public Health Toxicology for Environment and Human Health, Inc.; a researcher involved in the crumb rubber study at Yale University; Past Chief of Environmental Epidemiology and Occupational Health at Connecticut’s Department of Health; Past Deputy Director of The Public Health Practice Group of Agency for Toxic Substances and Disease Registry (ATSDR) at the National Centers for Disease Control and Prevention (CDC).

## Quotes:

When asked what advice he would give parents thinking of letting their children play on turf fields, Dr. Brown stated: “My basic advice is, don’t do it.” And what if there are no other alternatives to artificial turf fields? “If we feel the need to use [turf fields], I’d require that everyone shower and that they use only shoes that they would use on that field and that they not wear the same clothes in and around afterwards, because you want to reduce the chance that [tire crumbs] would be ingested.” In the absence of conclusive long-term studies on the known carcinogens found in some artificial turf fields, Brown believes it’s better to be safe than sorry. “If I had to make recommendations, I would never have a soccer goalie practice on the turf fields,” he said. “Play on it, but not practice on it. The very young children, I’d get them off those fields.”

“The studies that have been done are narrow and mostly funded by the industry or waste bureaus trying to get rid of tires.” And, “The objective work that needs to be done hasn’t been done. I see it as a government failure across the board that really we should try to learn from. We should ask the question, ‘Who is responsible for determining the safety of things?’”

“Chemicals are usually assessed for their toxicity one chemical at a time. Synergistic effects of being exposed to numerous chemicals at the same time are not known. [Children] are being exposed concurrently to multiple chemicals and multiple carcinogens,” stated Dr. Brown.

When asked when he thought people would start to take notice of the cancer-related harms of artificial fields. Dr. Brown said, “Five,” he said. “Five years. Because we’re putting first graders and cancerous materials together. And when the cancer starts, people like myself will be sorry we didn’t argue more effectively.”

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**Who Said It?**

D. Barry Boyd, MD: Clinical Professor of Medicine, Yale University School of Medicine, Oncologist at Greenwich Hospital and Affiliate Member of the Yale Cancer Center.

**Quote:**

“Because artificial turf playing fields are disproportionately used by children and adolescents, these childhood exposures to environmental carcinogens may add to lifelong risk of cancer.”

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**Who Said It?**

Dr. Jerry Sibert, MD, a physician in Guilford, CT who warns of the 12 carcinogens and dozens of chemical irritants found in crumb rubber.

**Quote:**

“They’re not exposed to just one but all of [the chemicals] simultaneously... They can enhance the toxicity of them so for manufacturers to say any on particular chemical is not dangerous is false logic.”

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**Who Said It?**

Nancy Alderman, President of Environment & Human Health, Inc. (EHHI), a non-profit organization of physicians, public health professionals, and policy experts dedicated to protecting human health from environmental harms.

**Quote:**

“What do people need or want for proof of harm? The fact that there are 12 carcinogens and 3 heavy metals in synthetic turf fields does not seem to constitute ‘proof of harm’ for those people who continue to approve these fields.”

**Email:**

Nancy Alderman also sent an e-mail to Jessica Leaven including the Yale Study findings and stating: "The material is toxic and you should not allow your small child to be on it. . . . If the school will not remove it — tell them your child is not allowed to be on it."

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**Who Said It?**

Environmental Protection Agency (EPA) Spokesperson Liz Purchia called existing studies inadequate, and said “new science” is needed to answer questions about turf safety.

**Quote:**

“Existing studies do not comprehensively address the recently raised concerns about children’s health risks from exposures to tire crumb.”

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**Who Said It?**

Consumer Products Safety Commission (CPSC) Chairman Elliot Kay

**Quote:**

" 'Safe to play on' means something to parents that I do not think we intended to convey and I do not think we should have conveyed."

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**Who Said it?**

Dr. Michael Babich, Current Deputy Director of the CPSC

**Quote:**

During a conversation with Jessica Danielian and Jessica Leaven, he said that the CPSC will be studying playground mulch, beginning in earnest in 2017, after the EPA studies the chemicals in crumb rubber. He explained that the way consumer protection laws are set up, the burden is on the government to prove something is harmful. When asked if he would let his children play on rubber mulch, he answered that rubber mulch “would NOT be my first choice for playgrounds.” He explained that if rubber mulch is not already installed on a playground, we should do our best to get people to not install it and choose a safe, better, less questionable option such as wood mulch. He said if we have no choice, and our children have to play on it, he would take safety precautions of maintaining good hygiene, and make sure children are washing their hands, not eating or drinking on the mulch, and showering daily.

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**Who Said It?**

Jeff Ruch, Attorney with Public Employees for Environmental Responsibility (PEER)

**Quote:**

"We (in the U.S.), for the most part, operate under the principle that your chemical is innocent until proven guilty. It goes into a stream of commerce and only if it produces a body count is then there any regulatory response."

“The common sense concern is that this is just chopped up hazardous waste”

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**Who Said It?**

Pediatricians, epidemiologists and laboratory scientists at the Children's Environmental Health Center of the Icahn School of Medicine at Mount Sinai issued the following statements after a comprehensive review of crumb rubber studies.

**Quotes:**

"Given the hazards associated with recycled tire rubber, it is our recommendation that these products never be used as surfaces where children play."

"Children are uniquely vulnerable to harmful exposures from recycled rubber surfaces...due to a number of factors including their unique physiology and behaviors, rapidly developing organ systems, and immature detoxification mechanisms."

"Styrene is neurotoxic and reasonably anticipated to be a human carcinogen. Butadiene is a proven human carcinogen that has shown to cause leukemia and lymphoma. Shredded tires and crumb rubber also contain lead, cadmium and other metals known to damage the developing nervous system."

"We recommend that children not play on recycled rubber surfaces that contain known carcinogens and neurotoxins and support a ban on the use of the product."

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**Who said it?**

Suzanne Wuerthele, a former EPA toxicologist

**Quote:**

"This was a serious no-brainer. You take something with all kinds of hazardous materials and make it something kids play on? It seems like a dumb idea."

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**Who Said It?**

Philip J. Landrigan, M.D., M.Sc., is a pediatrician and epidemiologist. He has been a member of the faculty of Mount Sinai School of Medicine since 1985 and served as Chair of the Department of Preventive Medicine since from 1995 to 2015. He was named Dean for Global Health in 2010. He served for 15 years as an Epidemic Intelligence Service Officer and medical epidemiologist at the Centers for Disease Control and Prevention (CDC) and the National Institute for Occupational Safety and Health (NIOSH).

**Quote:**

Dr. Landrigan submitted a letter to the New York City Planning Department last year expressing concerns over the carcinogens in tire crumbs. He wrote that the principal chemical components of crumb rubber are Styrene and Butadiene. Styrene is neurotoxic, and Butadiene is a proven human carcinogen that has been shown to cause leukemia and lymphoma. "There is a potential for all of these toxins to be inhaled, absorbed through the skin and even swallowed by

children who play on synthetic turf fields. Only a few studies have been done to evaluate this type of exposure risk.”

“Children go to playgrounds almost daily,” said Dr. Landrigan. “And gifted athletes are on the soccer field almost every day. That sort of cumulative exposure results in a buildup in their body of these toxic chemicals, and can result in a buildup of cellular damage that’s caused by these chemicals, that can then result in disease years or decades later. Little children should not be put in a situation where they’re forced to be in intimate contact with carcinogenic chemicals.”

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**Who Said it?**

Patty Wong, Ph.D., Senior Toxicologist, Chief, Special Investigations Section (Synthetic Turf Study), Office of Environmental Health Hazard Assessment (OEHHA) - Senior toxicologist in current OEHHA study that will be completed in 2019.

**Conversation:**

During a conversation with Jessica Leaven, Dr. Wong explained that OEHHA's study will be more expansive than the EPA's study. She explained that due to the chemical processes in making tires, and tire exposure on roads, the tires have literally countless number of chemicals, metals, etc. She explained that it is impossible to even identify all of the chemicals contained in tires. She said that our concerns about the toxicity of rubber mulch are completely legitimate and shared by many others, and that those concerns led OEHHA to do this study. She said that due to concerns, if children are currently playing on rubber mulch, and can't avoid it, then they need to be washing their hands thoroughly, they should not bring food/water onto the playground to avoid ingestion of chemicals, and when returning home, they need to remove shoes/clothes and take a shower immediately after entering home.

**Email:**

Dr. Wong also sent an e-mail to Jessica Leaven including recommendations for general practices to reduce the chemical exposures to children playing on rubber mulch [published by Mount Sinai](#).