

Crumb Rubber in Athletic Fields

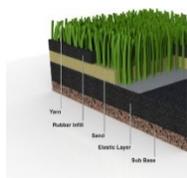
QUESTIONS REGARDING POTENTIAL HEALTH EFFECTS FROM THE USE OF CRUMB RUBBER IN ATHLETIC FIELDS.

What is Crumb Rubber?

Crumb rubber is created by reducing scrap tires or other rubber into small, uniform pellets. Tires are broken up by either grinding or by freezing and then breaking. The steel and other fibers in scrap tires are almost entirely removed in the manufacturing process.¹ Using scrap tires can provide a community and environmental benefit by removing mosquito breeding grounds and reducing fire hazards.



How is it used?



Because crumb rubber is used in a wide variety of products, it comes in a range of sizes. One common use for crumb rubber is as a filler in synthetic turf fields. The crumb rubber helps support the artificial blades of “grass” to give the field a more natural texture and feel. It is also used in floor mats, carpet padding, as foundation for roads and railroads, and as filler in packaging.²

Are there health concerns?

Tires contain a number of materials that can be harmful to health if significant exposure (swallowing, breathing, or

through the skin) occurs, including metals (zinc, lead), volatile organic compounds (methyl isobutyl ketone), semi-volatile organic compounds (benzothiazole, PAHs), and particulates (carbon black).³ Studies done by states (CA, NY) have shown that exposure to chemicals in crumb rubber is likely to be small and unlikely to increase the risk for any health effect. However, recent news reports and comments from the public continue to raise questions about exposure to crumb rubber. A study from Connecticut urged caution until additional information is gathered.

What is being done?

Two major studies are currently underway examining potential health effects from crumb rubber and synthetic turf. One is being led by the federal Environmental Protection Agency; a draft status report is expected in late 2016. Additional federal research may result from these findings.⁴ The second is by the California Office of Health Hazard Assessment and will run through 2018. The California study will be very comprehensive and include a review of current knowledge, public input, exposure assessment, and estimated health outcomes.⁵ The Minnesota Department of Health is tracking each of these studies and will consider their results in any future recommendations regarding the use of crumb rubber in synthetic turf fields.

Are there other considerations?

In addition to concerns about chemical exposures, synthetic turf can become extremely warm during summer days, causing heat-related stress. Because the surface is different than natural grass, sports equipment may need to be adjusted (e.g. shorter cleats on shoes) to avoid injury.



There have been reports of skin infections from scrapes suffered on indoor surfaces especially.

Are there health benefits?

Regular physical activity reduces the risk of many chronic diseases, including cardiovascular disease, diabetes and some cancers, can improve your mental health and mood, and increase your chances of living longer.⁶ Synthetic turf is also able to be used more often and longer than traditional grass fields, increasing opportunities for physical activity for both students and community residents.

Are there other benefits?

There can be environmental advantages to using synthetic turf. Depending on the region of the country, a typical grass sports field requires 500,000 to one million gallons of water per year in addition to significant amounts of pesticides and fertilizers.⁷ Synthetic turf fields require neither watering nor application of chemicals.

The availability of community sports facilities can also help reduce health disparities in underserved areas by helping to create environmental, economic, and social conditions that promote health.⁸

Now What?

Given the extensive use of synthetic turf in Minnesota and the lack of reported health issues associated with their use, it is unlikely that they pose a significant, acute public health concern. However, more information is needed to assess possible long-term issues. MDH will continue to gather information and track ongoing studies to assess possible health risks. In the meantime, users of these fields can take some simple precautions such as:

- Washing with soap and water after use, especially any scrapes or cuts
- Shaking out clothes/shoes to limit take home of rubber crumbs
- Cover food/beverages to prevent contamination with rubber material

References

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