Rubber Playground Mulch May Be More Dangerous and Toxic

Poured-in-place (PIP) rubber surfacing is the most popular playground surface in city parks and school playgrounds. At first glance, recycled rubber from shredded tires seems like a greener, safer choice.

But more kids are suffering from concussions. The CDC studied national data from 2001 to 2013 for playground injuries. More than 200,000 kids go to the emergency room for playground-related injuries every year. The rates of traumatic brain injuries have increased since the implementation of rubber mulch in playgrounds.

The increase in brain injuries could be due to increased awareness of the potential seriousness of concussions and the need for treatment. It's also possible that more children are playing in playgrounds, and therefore we are seeing an increase in injuries. But some experts think that the rubber surface provides a false sense of security and that kids are more likely to take greater risks leading to more injuries.

> *The researchers can't explain why serious head injuries are increasing. 'We can only make assumptions' " Bell said.*
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> *Dr. Jeneita Bell*

There are also concerns of toxicity in the rubber mulch. Researchers tested lead levels for soil, sand, wood mulch, and rubber surfaces for 28 playgrounds. Their findings report that rubber playground surfaces averaged up to triple the lead levels of the other playground surfaces. The study team also found higher levels of lead in soil. They determined that from a toxicity standpoint sand may be the safest choice for playgrounds.

Recycled rubber may also contain other toxic substances, including but not limited to:

Polycyclic aromatic hydrocarbons (PAHs) – a group of chemicals that are formed during the incomplete burning of coal, oil, gas, wood, garbage, or other organic substances)

Phthalates – a group of chemicals used to make plastics more flexible, known to affect hormones

Volatile organic compounds (VOCs) – may damage the liver, kidneys, central nervous system, and may cause cancer

> *Playgrounds use a variety of materials to protect children against injuries. However, we should always consider the full suite of health effects associated with materials that children come into contact with."*
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> *Study author Nick Arisco of the Harvard T.H. Chan School of Public Health in Boston*