Lead poisoning prevention discovered by Tulane researchers

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Researchers in New Orleans have tested a simple and inexpensive way to reduce children's exposure to lead-polluted soil—covering playgrounds with a layer of clean soil.

"We're proposing a proactive strategy of primary prevention to protect children from lead poisoning and the health damage it can cause," says study leader Howard Mielke, research professor of chemistry at the Tulane/Xavier Center for Bioenvironmental Research. The study was funded by the Greater New Orleans Foundation Environmental Fund, and results are published in the journal *Environmental Pollution*.

Since Hurricanes Katrina and Rita, more than 155 childcare centers have opened in New Orleans. Surveys of soil throughout New Orleans conducted by Mielke show that inner city neighborhoods have dangerously high levels of lead, with some containing concentrations several times greater than the U.S. Environmental Protection Agency guidelines of 400 mg/kg for playgrounds. Using the New Orleans lead map as a guide, Mielke enlisted ten inner city childcare centers and one community center in the study, then tested the effectiveness of leaving the original playground soil intact, placing a bright orange, water-permeable geo-textile material over it to prevent soil mixing, and then toping that with a six-inch-deep layer of clean soil.

"Within hours, at a cost of about $100 per child, exterior play areas at childcare centers can be transformed from lead-contaminated to lead-safe with a margin of safety," Mielke said. "This is a miniscule cost

when compared to the costs associated with secondary prevention and treatment of lead-poisoned children, the costs of learning and behavioral disorders, and subsequent costs to society of lifelong chronic health problems."

Provided by Tulane University