High levels of naphthalene can hurt genes

NEW YORK, May 30 (UPI) -- Children exposed to high levels of naphthalene -- moth balls, cigarettes, exhaust -- are at increased risk for chromosomal aberrations, U.S. researchers say.

First author Dr. Manuela A. Orjuela -- assistant professor of clinical environmental health sciences and pediatrics at Columbia University Medical Center, and a pediatric oncologist at NewYork-Presbyterian Morgan Stanley Children's Hospital -- and colleagues said naphthalene is found in outdoor and indoor urban air.

The researchers tracked 113 children, age 5, part of a larger New York City study, and assessed the children's exposure to naphthalene. A CDC laboratory measured levels of its metabolites -- 1- and 2-naphthol -- in urine samples. Metabolites are products of the body's metabolism, and can serve as marker for the presence of a chemical.

Researchers also measured chromosomal aberrations in the children's white blood cells using a technique called fluorescent in situ hybridization. Chromosomal aberrations were present in 30 children.

Chromosomal aberrations have been associated with increased cancer risk in adults.

"Some accumulated damage will be repaired, but not everyone's repair capacity is the same," Orjuela said in a statement. "Previous studies have suggested that chromosomal breaks can double an adult's lifetime risk for cancer, though implications for children are unknown."

The findings were published in Cancer, Epidemiology, Biomarkers & Prevention.

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