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Child Obesity Is Linked to Chemicals in Plastics

Jennifer Lee, New York Times,

Exposure to chemicals used in plastics may be linked with childhood obesity, according to results from a long-term health study on girls who live in East Harlem and surrounding communities that were presented to community leaders on Thursday by researchers at Mount Sinai Medical Center.

The chemicals in question are called phthalates, which are used to to make plastics pliable and in personal care products. Phthalates, which are absorbed into the body, are a type of endocrine disruptor chemicals that affect glands and hormones that regulate many bodily functions. They have raised concerns as possible carcinogens for more than a decade, but attention over their role in obesity is relatively recent.

The research linking endocrine disruptors with obesity has been growing recently. A number of animals studies have shown that exposing mice to some endocrine disruptors causes them be more obese. Chemicals that have raised concern include Bisphenol A (which is used in plastics) and perfluorooctanoic acid, which is often used to create nonstick surfaces.

However, the East Harlem study, which includes data published in the journal Epidemiology, presents some of the first evidence linking obesity and endocrine disruptors in humans. The researchers measured exposure to phthalates by looking at the children's urine. "The heaviest girls have the highest levels of phthalates metabolites in their urine," said Dr. Philip J. Landrigan, a professor of pediatrics at Mount Sinai, one of the lead researchers on the study. "It goes up as the children get heavier, but it's most evident in the heaviest kids." This builds upon a larger Mount Sinai research effort called "Growing Up Healthy in East Harlem," which has looked at various health factors in East Harlem children over the last 10 years, including pesticides, diet and even proximity to bodegas. About 40 percent of the children in East Harlem are considered either overweight or obese. "When we say children, I'm talking about kindergarten children, we are talking about little kids," Dr. Landrigan said. "This is a problem that begins early in life." The Growing Up Healthy study involves more than 300 children in East Harlem, and an additional 200 or so children in surrounding community.

The phthalate study follows a separate group of about 400 girls in the same communities, who range in age from 9 to 11. One thing researchers have found is that the levels of phthalates measured in children in both studies are significantly higher than the average

levels that the Centers for Disease Control and Prevention have measured for children across the entire United States. The findings may presage a new approach to thinking about obesity drawing environmental factors into a central part of the equation. “Most people think childhood obesity is an imbalance between how much they eat and how much they play,” Dr. Landrigan said. But he thinks the impact of endocrine disruptors on obesity could be more significant than many people believe. “Most people think it’s marginal,” he said, paling in comparison with diet and exercise. But he likened it with the impact of lead on a child’s I.Q. “Lead never makes more than 3 or 4 percent difference in margin, but 3 to 5 I.Q. points is a big deal,” he said. Of course, at this stage, researchers cannot say if the exposure actually causes obesity, simply that it seems to be linked. “Right now it’s a correlation; we don’t know if it’s cause and effect or an accidental finding,” Dr. Landrigan said. “The \$64,000 question is, what is causal pathway? Does it go through the thyroid gland? Does it change fat metabolism?”

The National Children’s Study, which will follow 100,000 children from across the country from birth to age 21, will look more broadly at endocrine disruptors and other issues. “Some of the clues that come out of East Harlem will actually be pursued in the larger one,” Dr. Landrigan said. Meanwhile, Dr. Landrigan advised people to reduce their exposure to phthalates as a precautionary measure. “You can’t avoid them completely, but you can certainly reduce their exposure,” he said. It’s somewhat difficult to do, since many things do not contain labels identifying phthalates, and in the case of perfumes they can simply be labeled as “fragrance.”

Phthalates are found in certain personal care products (like nail polish and cosmetics), though recent regulation has encouraged companies to reduce or eliminate them. They are also found in common everyday objects, including vinyl siding, toys and pacifiers. A number of environmental Web sites, including The Daily Green, have advised certain strategies, including learning to recognize the abbreviations for certain common phthalates and to prefer certain kinds of recyclable plastics over others.