

Researchers find antibiotic exposure may be associated with childhood obesity

October 3 2012

(Medical Xpress)—Farmers regularly use low-dose antibiotics to fatten livestock for market. But is it possible that antibiotics, widely administered to infants and young children, are fueling the prevalence of childhood obesity?

NYU researchers examined the relatively little-studied possibility in a paper published in the [International Journal of Obesity](#), honing in on data from 11,532 children who were the subjects of a noted longitudinal birth cohort study conducted from 1990 to 1992 in Avon, United Kingdom.

The possibility that antibiotic exposure may be associated with childhood obesity arises in light of our growing understanding of the human microbiome, which is composed of thousands of species of resident bacteria that aid in [human metabolism](#), [cell differentiation](#), and immune responses. Early life, the authors point out, appears to be a critical period for the establishment of a gut bacterial community.

Some researchers have suggested that early exposure to [antibiotics](#) could disrupt intestinal [colonization](#) and lead to changes in food metabolism.

In their study, co-authors Leonardo Trasande and Jan Blustein, both of the Robert F. Wagner Graduate School of Public Service and the School of Medicine, and their academic colleagues at the NYU School of Medicine, Mengling Liu, Laura Cox, and Martin Blaser, along with Wagner student Elise Corwin, examined key relationships between [body mass](#) and exposures to antibiotics during three separate time periods in

infancy, and observed changes in the children's weight over time.

Among the 11,532 children in the Avon [longitudinal study](#), nearly one-third received antibiotics in the first six months of life, with cumulative use increasing with age, while about one-quarter of the sample were not exposed to antibiotics by age 2. Birth weights were similar for children who were exposed and those who were not.

However, those exposed to antibiotics early were heavier later in life, the NYU researchers found. According to the study, antibiotic exposure in the first six months of age is associated with consistent increase in body mass from 10-28 months old, but exposures later in infancy, at 6-14 months old and at 15-23 months old, are not consistently associated with increased body mass.

The effects of early exposure to antibiotics are modest for any individual child, but they could have substantial consequences for population health, says the study, which reinforces concerns that antibiotic exposure early in life may cause increases in body mass later in life, with the period from birth to 6 months old a window of particular vulnerability.

Citing the rising incidence of childhood obesity and its associated health problems, the researchers conclude that further study is needed "to isolate effects and define life-course implications for body mass and cardiovascular risks."

Provided by New York University

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