

The Fragile Families and Child Wellbeing Study changed its name to The Future of Families and Child Wellbeing Study (FFCWS). Due to the issue date of this document, FFCWS will be referenced by its former name. Any further reference to FFCWS should kindly observe this name change.

Neighborhood Air Pollution and Children's Cognitive Development

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ABSTRACT

Exposure to airborne toxins is associated with a variety of health risks. A growing body of research suggests exposure to air pollution negatively impacts neurological function, although the extent to which cumulative exposure throughout childhood matters for children's cognitive development is unclear. To address this question, we join Census tract-level data on air pollution estimated in the National Air Toxics Assessment by the Environmental Protection Agency to individual-level data from the Fragile Families and Child Wellbeing Study, a birth cohort study following children born in large US cities between 1998 and 2000. We find that children who grow up in neighborhoods with higher levels of neurologically hazardous air pollution score lower on multiple measures of intellectual and academic ability at age 9, even after accounting for parental intelligence and the socio-economic characteristics of families and neighborhoods. We also show that cumulative exposure to air pollution during childhood is associated with declines in relative vocabulary test scores between ages 3 and 9, net of air pollution exposure at birth. Overall, our findings provide strong evidence for the deleterious effect of childhood air pollution on children's cognitive development.