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THE EFFECTS OF THE WORLD TRADE CENTER DISASTER ON PREGNANCY
OUTCOME

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The fire and collapse of the World Trade Center (WTC) was the largest acute environmental disaster that ever has befallen New York City. The resulting toxicants included benzene, polycyclic aromatic hydrocarbons (PAHs), and heavy metals. To evaluate whether the toxic exposures and associated stress were associated with impaired fetal growth or other adverse pregnancy outcomes, we established a cohort of 187 pregnant women who were inside or near the WTC on 9/11. As a comparison group, we utilized all private patients who delivered at Mount Sinai Medical Center on the Upper East Side of Manhattan during the same time period (n=2367). No significant differences were found for mean gestational age, mean birthweight, the frequency of preterm births, or incidence of low birth weight. However, the WTC cohort had an almost twofold (aOR=1.90, 95% CI=1.04 – 3.46) increased risk of small-for-gestational age (SGA) infants. No association was evident between post-traumatic stress symptomatology and pregnancy outcome. Previous studies have found associations between particulate air pollution and intrauterine growth restriction as well as preterm births. High levels of PAH-DNA adducts have also been associated with reduced birth size. Thus, it is possible that both the particulate as well as the PAH exposure affect intrauterine growth. Our observation of an apparent association between maternal exposure to the WTC disaster and SGA infants suggests that this event had a detrimental impact on exposed pregnancies. (Funding Sources: National Institute of Environmental Health Sciences P42ES07384-07S1, The Environmental Protection Agency RD-83083701, The September 11th Fund)