

Reproductive outcomes among former Love Canal residents, Niagara Falls, New York
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Abstract

Love Canal, located in Niagara Falls, NY, and among the earliest and most significant hazardous waste sites in the United States, first came to public attention in 1978. In this study, researchers evaluated 1799 live births from 1960 through 1996 to 980 women who formerly lived in the Love Canal Emergency Declaration Area and were of reproductive age sometime during that time period. Using Upstate New York and Niagara County as external comparison populations, standardized incidence ratios with 95% confidence intervals were calculated for low birth weight, preterm birth, small for gestational age, and congenital malformations, and unadjusted proportions of male to female births were calculated. Internal comparisons among the infants were also performed according to several measures of potential exposure using generalized estimating equations.

The results indicated a statistically significant elevated risk of preterm birth among children born on the Love Canal prior to the time of evacuation and relocation of residents from the Emergency Declaration Area, using Upstate New York as the standard population (standardized incidence ratio=1.40; 95% confidence interval: 1.01, 1.90). Additionally, the ratio of male to female births was lower for children conceived in the Emergency Declaration Area (sex ratio=0.94 versus sex ratio=1.05 in the standard population) and the frequency of congenital malformations was greater than expected among Love Canal boys born from 1983 to 1996 (standardized incidence ratio=1.50 when compared to Upstate New York), although in both cases the 95% confidence interval included the null value. Finally, increased risk for low birth weight infants among mothers who lived closest to the Canal as children was found (odds ratio=4.68; 95% confidence interval: 1.24, 17.66), but this estimate was limited due to small numbers (n=4). The study adds to the knowledge of the possible reproductive effects from exposure to chemicals arising from hazardous waste; however, given the small number of some events, the qualitative nature of the exposure assessment, and possibility of spurious associations due to multiple comparisons, the findings should be interpreted cautiously.

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