

Concentrations of selected organochlorines and chlorobenzenes in the serum of former Love Canal residents, Niagara Falls, New York

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Abstract

Background

Love Canal, in Niagara Falls, NY is among the earliest and most significant hazardous waste sites in the USA, but no study has ever measured chemical body burdens in nearby residents to document that human exposure occurred. This study measured concentrations of selected organochlorines and chlorinated benzenes in archived serum samples collected from former Love Canal residents.

Methods

We analyzed serum samples collected from 373 former residents in 1978–1979 for compounds disposed of at Love Canal, and we compared their concentrations according to surrogate indicators of exposure such as residential proximity, adjusting for potential confounders.

Results

Three compounds were detectable in the serum of most participants: 1,2,4-trichlorobenzene (1,2,4-TCB), β -hexachlorocyclohexane (β -HCH) and 1,2-dichlorobenzene (1,2-DCB). Concentrations of 1,2,4-TCB and 1,2-DCB were 2–14 times greater among persons who at the time their blood was collected lived closest to the Canal compared to those living further away. We found no consistent trends for β -HCH with respect to any exposure definition.

Conclusions

These results provide evidence that residential proximity to Love Canal contributed to the body burden of certain contaminants, and helps validate the use of surrogate exposure measures in health effect studies. Further surveillance of the Love Canal cohort is warranted.

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