Exposure to lead from a storage site associated with intellectual impairment in chilean children living nearby

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This study assesses the degree of impairment of children's IQ scores due to exposure to lead from a storage site. In 2005, we studied 192 children in Antofagasta, Chile, age 7-16 years who had been exposed to a lead storage site from birth until its removal in 1998. We used past (1998) and current (2005) blood lead levels as explanatory variables for IQ, which was measured once in 2005 using the WISC-r test. Multilevel mixedeffects linear regression models were constructed, adjusting for potential confounders. Current blood lead level (BPb, 2005) was associated with a significant decrease in full-scale IQ (P value = 0.03), whereas blood lead level measured in 1998 (BPb, 1998) showed an inverse but not significant association with full-scale IQ (P value = 0.35). The findings provide evidence that exposure to an open source of environmental lead can exert an effect on IQ. Policy efforts should be targeted to prevent lead exposure to avoid children's intellectual impairment.