**Abstract**

**OBJECTIVE:** It has come to be generally accepted that low levels of lead exposure may result in mental deficit. This causal inference is based on claimed time precedence of the lead exposure and on biological plausibility. The objective of this study is to argue that mental deficit causes pica which causes lead exposure (i.e. to support the theory of reverse causation).

**METHODOLOGY:** The literature since the 1930s has been interpreted in the light of our own long experience in the investigation of lead exposure in children and adults to support the arguments in favour of reverse causation.

**RESULTS:** The arguments for reverse causation are based on: (i) analogy with mental retardation which causes increased lead exposure; (ii) the results of published prospective studies that show a special relationship between blood lead levels at 24 months and **intelligence** tested later, exactly what would be predicted by the reverse causation theory; and (iii) on an alternative explanation for mental retardation following lead encephalopathy (i.e. that mental retardation following encephalopathy is due to anoxia and not due to a direct destructive effect on the brain neurones). The arguments, which have been proposed for the conventional view, are rejected for the following reasons: (i) none of the prospective studies have found a relationship between cord blood lead levels and **intelligence** tested later, undermining the argument based on time precedence of lead exposure; and (ii) there is no convincing evidence that lead poisoning, short of encephalopathy, causes mental retardation.

**CONCLUSION:** We believe that the reverse causation hypothesis is a more plausible explanation of the facts.

**Comment in**

Lead exposure and child **intelligence:** interpreting or misinterpreting, the direction of causality? [J Paediatr Child Health. 1997]

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