

## METALLIC LEAD IN SCHOOLCHILDREN AND ITS RELATION WITH COGNITIVE FUNCTION

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**Background/aims:** The minimum level of lead (Pb) exposure needed to cause intellectual impairment has not been established. Even blood lead (PbB) levels as low as 2.0 mg/dL may be harmful to children's health. This study assessed the correlation/association between PbB levels in blood samples and cognitive function scores in schoolchildren.

**Methods:** A sample of 111 schoolchildren was taken from three public schools in Ribeirão Preto (Brazil), a region with no lead contamination described, with 46 boys and 65 girls aged 7 to 10 years. Pb concentration in blood was measured by an exploratory approach and further categorized according to conventional PbB cut-off levels (under 2.0 mg/dl; 2.0 mg/dl or more); by using an adapted children's cognitive test, cognition scores were obtained as integer values from 0 to 38 (cut-off: under 28/abnormal; above or equal to 28/normal). The Spearman test was performed to determine the correlation between PbB values and cognitive scores and the Fisher exact test was used to evaluate the association of PbB categorized data and cognition scores.

**Results:** PbB levels from 0.5 to 8.0 ug/dl were detected among the schoolchildren sampled; Fisher's exact test didn't show statistical significance for the association between PbB and cognition scores ( $p = 0.632$ ); Spearman's test also didn't show statistical significance ( $r = -0.1235$ ;  $p = 0.1964$ ) for the correlation between PbB and cognition scores used as continuous variables.

**Conclusions:** Since a few samples showed high PbB levels (sentinel event), the exploratory PbB research with a further in-depth investigation is recommended to assess health risk.