

Metals and newborn hearing screening of a group of babies from a birth cohort.

Anna Carolina Nascimento Waack Braga Villar, Camila Neves Silva Lima, Thamires Marinatti da Silva Magalhães, Moara Karoline Silveira Malheiros, Flávia Rocha de Souza, Maria Isabel Kós Pinheiro de Andrade, Carmen Ildes Rodrigues Fróes Asmus.

Instituto de Estudos em Saúde Coletiva/ Universidade Federal do Rio de Janeiro (IESC/UFRJ).

Introduction: Arsenic (As), Cadmium (Cd), Lead (Pb), and Mercury (Hg) are on the list of the ten worrisome chemicals due to their health impacts; studies have suggested an association between exposure to these metals and audiological alterations. Objectives: Describe the profile of exposure to metals (As, Cd, Hg, and Pb) and the result of newborn hearing screening (NHS) in a group of participants of a birth cohort in Rio de Janeiro. **Methods:** This is a cross-sectional study in which participants are part of the PIPA UFRJ Project. The results of the NHS and the laboratory analysis of the concentrations of As, Cd, Hg, and Pb in the umbilical cord blood were verified; statistical tests were performed to evaluate the relationships. **Results:** 304 newborns participated in this analysis, 51.64% male and 48.36% female. 90.54% of the sample passed the NHS without retesting, and 9.54% passed the retest. Failures were considered when they occurred in the retest; almost 2% of the population (n=6) failed in at least one ear. Cd was detected in only 11% of the sample. Levels above the recommended values for Pb(3.5µg/dL), Hg(5µg/L), and As(1µg/L) were found in 1.3%, 2% and 4.6%, respectively. In the statistical analysis, no significant association was observed between the results of the NHS and the concentrations of metals. **Conclusion:** Although metal concentrations are above the recommended values in part of the population, no correlations with NHS failure were observed. Further studies will be conducted with a larger population, following their auditory development.

Keywords: Environmental pollutants, metals, newborn, hearing.