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ENVIRONMENTAL EXPOSURE TO MERCURY AND METHYLMERCURY OF BRAZILIAN INDIAN POPULATIONAL GROUPS

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Much concern has arisen lately in Brazil due to contamination by mercury used in gold exploration activities mainly in the Amazonic region.

In the present work, a study is being made of the environmental exposure to mercury and methylmercury of Brazilian Indian populational groups. Nine Indian tribes have been object of the study up to now. The contamination by mercury is first being monitored through analysis of head hair.

Total mercury is being determined in the hair samples by instrumental neutron activation analysis. The hair samples are being collected and washed according to the protocol of the International Atomic Energy Agency. Methylmercury was determined in some of the hair samples using CVAAS (could vapour atomic absorption spectroscopy) after separation of mercury species by ion exchange.

The results obtained for the nine tribes studied have shown that the total mercury levels obtained were always much higher than the ones obtained for a control population.

The arithmetic mean of the nine tribes studied varied from 8.7 to 21.8 ppm, the geometric mean varied from 8.2 to 21.0 ppm and the median from 8.2 to 20.7 ppm. Corresponding values of the control group were respectively, of: 1.06 ppm, 0.90 ppm and 0.96 ppm. These results lead us to conclude that the Indian populations in study could be at risk as regards contamination by mercury.

As to methylmercury determined in some of the hair samples the values obtained show that it constitutes from about 70-100% of the total mercury found. (IAEA, FAPESP, CNPq)