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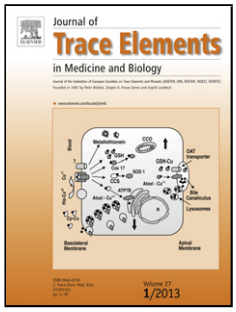

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Trace element levels in blood and associated factors in adults living in the metropolitan area of São Paulo, Brazil

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Abstract

This study evaluated blood arsenic (As), cadmium (Cd), lead (Pb), mercury (Hg), copper (Cu) and manganese (Mn) levels in a group of residents (n = 374) in the metropolitan area of São Paulo (MASP) and investigated the association between trace element levels in blood and sociodemographic and lifestyle factors. Trace elements were measured in specimens by inductively coupled plasma mass spectrometry (ICP-MS). Geometric means were 3.6 µg/L, 0.13 µg/L, 23.9 µg/L, 1.4 µg/L, 999 µg/L, and 12.5 µg/L for As, Cd, Pb, Hg, Cu, and Mn, respectively. As, Pb and Hg levels were associated with education level. Men presented higher blood lead levels (PbB) and lower blood copper levels (CuB) than women. Fish consumption was primarily related to increased blood Hg levels (HgB). Smokers exhibited 1.8 times more blood cadmium levels (CdB) than non-smokers. Only 4% of the study samples exceeded the Pb reference values for the MASP population, and 12% had