

Neurological and neuropsychological deterioration in artisanal gold miners from the town of Andacollo, Chile

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It is widely known that human exposure to mercury vapor can cause neurological and neuropsychological deterioration. We have investigated if a population of Chilean artisanal gold-mining workers heavily exposed to elemental mercury (Hg⁰) display neurological and neuropsychological impairment. Male volunteers occupationally exposed to Hg⁰ ("gold miners", n = 35) were recruited and compared with a group of unexposed workers (n = 40). Blood specimens were obtained from both groups for total mercury quantification. Upon neurological examination, 71% of the "gold miners" group showed abnormalities expressed as frontal impairment, tremor, or simultaneously frontal impairment, parkinsonism, and pyramidal syndrome. In contrast, only 16% of the individuals in the control group displayed neurological abnormalities. The "gold miners" group also showed impairment of the neuropsychological performance and the distribution of abnormal scores for almost all the neuropsychological tests applied was si