

# Valutazione delle dosi di mercurio negli esposti e nei controlli

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## KEY WORDS

Urinary mercury; blood mercury; fish consumption; amalgam fillings; occupational exposure

## SUMMARY

**«Assessment of mercury dose in occupationally exposed subjects and controls».** Objectives: *The aim of this paper was to analyse the concentrations of HgU and HgB in three different groups: 122 workers exposed, 18 workers formerly exposed and 196 subjects not occupationally or environmentally exposed to mercury.* Methods: *All the subjects filled out a questionnaire concerning personal data, lifestyle, occupational or non-occupational exposure to Hg and medical history. The amalgam fillings area was measured by a standardised method.* Results: *Urinary mercury excretion was significantly greater in the group of the exposed workers respect to the group of subjects not occupationally exposed (Median value of 8.3 µg/g creatinine and the 5° and 95° percentile respectively of 2.66 e 23.50 µg/g creatinine against Median value of 1.2 µg/g creatinina and the 5° and 95° percentile respectively of 0.18 and 5.42 µg/g creatinine). U-Hg in formerly exposed workers were comparable to U-Hg in non-occupationally exposed subjects, with a median value of 1.6 µg/g creatinine. B-Hg values were similar in the three groups: the median value was 3.1 µg/l in the non-occupationally exposed, 4.0 µg/l in the exposed workers and 3.9 µg/l in the past exposed. These value were not significantly different. Among the considered variables (amalgam fillings, fish consumption, age, sex, alcohol intake, chewing-gum and smoking) dental amalgam and fish consumption were significantly related with the Hg urinary excretion and the B-Hg levels. This is particularly true considering the subjects altogether: for the exposed workers, indeed, the occupational exposure was the most relevant variable.* Conclusions: *The results of the present research confirmed that the U-Hg excretion in non-occupationally exposed subjects is influenced by amalgam dental fillings. Furthermore, in our study Hg urinary excretion was significantly related with fish consumption. This fact can be explained, according to several recent experimental human and animal trials, considering that methylmercury contained in fish is partially converted, through breakage of the carbon-Hg bond, into Hg inorganic forms, which accumulate in the kidney and have a urinary excretion pathway.*

Pervenuto il 3.2.2002 - Accettato il 4.4.2002

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