

# Valutazione delle fonti di assorbimento di mercurio tramite lo studio dei livelli di mercurio urinario della popolazione generale

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## KEY WORDS

Mercury; urine; general population; amalgam fillings

## SUMMARY

**«Evaluation of the sources of mercury absorption through the study of urinary mercury levels in the general population».** Objectives: *The number of instances where mercury exposure is possible outside the workplace are numerous, with the main source being amalgam dental fillings and diet. It is also possible to envisage environmental exposure in subjects resident in areas where there is existing environmental contamination. This is probably what happened in Tuscany where past mining activity in the Monte Amiata area may have been the cause. This study estimated the concentration of urinary mercury (HgU) in non-occupationally exposed subjects from southern Tuscany, with the aim of evaluating the sources of mercury absorption in the general population.* **Methods:** *A questionnaire aimed at collecting specific information on factors which might influence the uptake of mercury was used. 164 subjects were studied: 82 subjects (41 males, 41 females) came from the Monte Amiata area and the other 82 (41 males, 41 females) from the Province of Siena. In this way it was possible to evaluate the elements associated with everyday life which may have influenced the presence of the metal in the urine. Since the distribution of the variables cannot be assumed multivariate normal as usual, a recently-proposed method based on a permutation procedure was adopted that allows the analysis of the variables as well as the single marginal analyses, without assuming any model for the distribution of variables.* **Results and Conclusions:** *The results showed significantly lower levels of HgU in the subjects from the Monte Amiata area. Highly significant differences were demonstrated in the population which was sub-divided according to number and surfaces of amalgam fillings, use of contact lenses and type of water drunk ( $p < 0.001$ ). Correlations between the levels of HgU and the investigated variables were not observed. It was confirmed that mercury uptake is simultaneously influenced by many factors. Probably the presence of higher levels of mercury in the environment in the Monte Amiata area is a factor of minor importance compared to others, especially the number of amalgam fillings, in determining mercury absorption in the general population.*

Pervenuto il 11.2.2002 - Accettato il 15.4.2002

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