

# Esposizione occupazionale a Nichel in Toscana: analisi di un registro di monitoraggio biologico per il periodo 1991-1998

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## KEY WORDS

Urinary nickel; biological monitoring; temporal trends

## SUMMARY

**«Occupational exposure to nickel in Tuscany: analysis of a biological monitoring register for the period 1991-1998».** **Objective:** The study assesses the time trend in exposure to nickel among factory workers in Florence, via data on biological monitoring. A data-base of nickel in urinary samples (Ni-U mg/l) was created for the period 1991 to 1998. **Methods:** The data-base contained 2.138 samples, measured by atomic absorption (GF-AAS), from 893 workers. Subjects came from 157 factories in various manufacturing sectors, especially electroplating, mechanical workshops, jewellery. **Results:** Ni-U levels were correlated with manufacturing sector. The highest levels were found among workers from electroplating industries, where exposure was mainly due to water-soluble nickel compounds. The eight-year time trend showed a statistically significant decrease in Ni-U values, with a sharper drop during the last two-year period. Age, sex and number of samples per subject were not statistically related to this trend. **Conclusion:** The observed Ni-U decrease could be related to the efficacy of new legislation introduced in Italy during the study period (Law 626/94 and subsequent laws), but also to the intense labour inspection activities that officials of National Health Service performed, which were rightly focused on nickel exposure in different manufacturing sectors. This study confirms the usefulness for occupational risk evaluation of a biological monitoring data-base of routinely collected data.