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## Scientists Develop A Fast System To Detect Metal Concentrations In Iron And Steel Industry Workers

Main Category: [Public Health News](#)  
Article Date: 21 Nov 2007 - 6:00 PST

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Researchers from the [Department of Legal Medicine, Toxicology and Psychiatry](#) of the University of Granada ([UGR](#)) developed a new method to detect metal concentrations in iron and steel industry workers. Continuous exposure to certain elements constitutes one of the work-related poisonings which were discussed in the course Technologies for Industrial Waste Treatment (Tecnologías para el tratamiento de residuos industriales) at the [Centro Mediterráneo](#) at UGR.

Fernando Gil Hernández, an expert in Industrial Toxicology and Work Medicine, gave a presentation of this research project which aims at detecting the levels of chromium, manganese and nickel in iron and steel industry workers. Traditionally, these biomarkers are analysed in blood and urine samples. However, researchers seek to replace these samples with others such as saliva and hair, as they are faster and less invasive. Consequently, researchers will compare traditional marker analyses (blood and urine) with saliva and hair samples. Then, depending on the matches, the project will determine whether it is possible to use saliva and hair as metal markers in continuous exposure to metals.

The study will analyse biological samples from 92 iron and steel industry workers, who have periodic medical examinations because of the characteristics of their job - a job where continuous exposure and high metal concentrations can be poisonous. In addition to blood, urine, saliva and hair analyses, scientists will interview workers to obtain information on variables such as sociodemographics, age, job types, previous jobs related to the iron and steel industry and smoking or drinking habits.

### Daily toxicity

Gil Fernández also discussed the poisonous character of everyday items such as batteries. For example, the cadmium in these batteries is a potential carcinogen which can produce lung and testicle cancers among others - hence the importance of an adequate waste treatment system. Furthermore, Gil Fernández covered the question of responsibility in treating poisonous waste. According to this expert, industrial activities are the most pollutive. However, he highlighted the efforts of the companies to control toxic waste. "The legislative imposition makes large firms very aware of poisonous waste treatment systems. However, perhaps there is not enough information available to small businesses, including the farming industry," said Gil. Finally, he talked about the transport and transference of poisons in ecosystems and the typologies of polluting products.

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*Article adapted by Medical News Today from original press release.*  
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Source: Fernando Gil Hernández [Universidad de Granada](#)

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