



Cobalt exposure in occupational settings

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Exposure to cobalt, chromium and nickel among dental laboratory technicians

Jolinde Kettelarij, Sara Nilsson, Carola Lidén, Anneli Julander

Objective:

- To quantify skin dose, monitor air exposure and measure urine excretion of cobalt (Co), chromium (Cr) and nickel (Ni) in 13 dental technicians.



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Conclusions:

- Dental technicians were exposed to Co, Cr and Ni on skin and through air during work
- Measured cobalt skin doses are considered high enough to elicit an allergic response
- Two technicians were exposed to cobalt air levels above the Swedish Occupational Exposure Level (OEL) of $20 \mu\text{g}/\text{m}^3$
- Skin and air exposure to Co, Cr and Ni were not reflected in urine concentrations



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Cobalt skin exposure in the hard metal industry

Jolinde Kettelarij, Klara Midander, Carola Lidén, Anneli Julander

Objective:

- To quantify skin exposure to cobalt in 76 workers at hard metal production facilities.



Cobalt skin exposure in the hard metal industry

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Conclusions:

- All workers, including those of the control group, were exposed to cobalt on skin.
- Work with raw material resulted in high levels of cobalt on skin, compared to skin doses measured in other groups.
- Even working with sintered hard metal materials resulted in significant skin exposure to cobalt.
- Cobalt skin doses, measured on hands (0.00059-135 $\mu\text{g}/\text{cm}^2$), were within the dose range for elicitation of contact dermatitis among 10% of sensitized individuals (ED_{10}).