

Medical surveillance of cadmium exposure

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Swedish Work Environment Authority (SWEA)

(Revised version)

Medical surveillance in working life, AFS 2005:6

- Valid for employers and their employees
- Medical surveillance is strictly regulated
- Only employees that have undergone medical examinations and have been **certified as fit for work** are allowed to be used for work with cadmium exposure.

Medical surveillance of cadmium exposure; Doctors examination 1

Background data:

- Previous and present diseases - kidney problems?
- Work history - previous exposure to cadmium?
- Smoking habits

Medical surveillance of cadmium exposure; Doctors examination 2

Medical examination:

- General clinical investigation including determination of blood pressure

Laboratory analyses:

- Cadmium in blood (for present exposure)
- Cadmium in urine (accumulated exposure)
- Markers in urine of tubular kidney damage (α 1- microglobulin or NAG are recommended)

Medical surveillance of cadmium exposure; Certificate of fit for work

No signs on:

- high Cd uptake,
- harmful effects from Cd uptake
- kidney damage not related to Cd exposure
- elevated blood pressure

No other reasons for avoiding Cd exposure

Certificate of fit for work 2

- The worker should not be at a special risk to get hurt by Cd exposure
- The examining doctor should have special qualifications i.e. a specialization in occupational medicine
- Medical examinations should be repeated every three years

Periodic exposure monitoring

- Determination of Cd in blood at 6 month intervals.
- Depending on the results from Cd analyses certain measures should be taken

Measures based on exposure monitoring (B-Cd nmol/l)

- < 50 12 Month intervals when three consecutive controls are below 50 nmol/l
- > 50 Employer shall investigate work environment and the reason for high uptake and reduce exposure when indicated
- 50-75 6 Month intervals
- > 75 Medical examination. Not allowed to work with Cd until B-Cd < 50 nmol/l

Interpretation of urinary analyses ($\mu\text{mol Cd/mol creatinine}$)

- <1 ref. value - no occupational exposure
- 1-3 some risk for tubular kidney damage
- 2 should be further investigated
- 5 transfer to non-exposed work should be considered
- Always consult a medical expert in the field in case of elevated values!

Registration of the results

- Name of the investigated person
- What kind of exposure (=Cd)
- Duration of exposure
- Results from biological exposure monitoring
- Doctor's decision (fit for work?)
- Name of the doctor and date for doctor's decision

Reports to Swedish Work Environment Authority (SWEA)

- The results from the medical surveillance should be sent to SWEA every 3 months

Number of investigated persons

Males

Females

<50 50+

<50 50+ years

B-Cd nmol/l:

<50

50-75

>75