

Biomonitoring - Introduction

- Biomonitoring is of growing interest for carcinogens at the workplace, because it can inform on the total exposure via all exposure routes. It may also reduce the effort to assess inhalation and dermal exposure.
- In many member states biomonitoring is traditionally primarily used to assess the risks for individuals as part of health surveillance. In some other countries biomonitoring focusses on exposure control and therefore occupational hygienist may perform the task.
- For international harmonisation it is necessary to analyse these different approaches and find a uniform way forward. The aim was to find out if biomonitoring may have a more prominent role in the management of carcinogenic substances and what is needed to improve its use.

Biomonitoring - Key Questions

- How should biological limit values be interpreted and used at the workplace? Should they be binding or only indicative (or recommendations)?
- Under what conditions can biological monitoring of exposed workers reduce the requirements for inhalation and dermal exposure assessment?
- Is biomonitoring a task reserved for doctors?

How should biological limit values be interpreted and used at the workplace? Should they be binding or only indicative/recommendations?

- There are support for binding biological limit values, however, also launch of non-binding biological values was supported
 - One challenge related to binding biological limit values was the providing HBM samples is currently only voluntary for workers
- Depends on substance and added value HBM can provide: especially if air exposure is not the main route of exposure (e.g. many substances with skin notation) or health effects cannot to be linked to air levels (cumulative substances) there is a strong indication for HBM and HBM values
- In any case, use and interpretation of HBM needs not only limit values but also instructions for data generation and the interpretation of the results

Under what conditions can biological monitoring of exposed workers reduce the requirements for inhalation and dermal exposure assessment?

- Properties of the substance and routes of exposure should trigger biomonitoring
- It was emphasized that biomonitoring should be mostly seen complementary to air measurements, not replacing them. Biomonitoring should not lead to avoid any necessary air monitoring.
- For some specific substances, like Cd and lead, air monitoring is not enough to inform on exposure, in these cases effective biomonitoring can reduce the need for other monitoring.

Is biomonitoring a task reserved for doctors?

- Differing views, some groups clearly supporting HBM mainly as part of health surveillance performed by occupational physicians. On the other hand, doctors are often missing relevant risk management knowledge which may prevent the effective use of HBM in occupational risk management.
- However, the importance of the HBM in workplace exposure assessment and risk management was recognized: if biomonitoring of workers shows generally elevated exposure, it should result in collective risk management measures.
- The use of data in occupational risk management needs anonymization/aggregation of the data. Privacy concerns are the main concerns related to this. In order to overcome these concerns there is a need for guidance/rules; challenge especially if only few workers are performing the same task.
- Also competence of persons interpreting and using HBM data should be ensured. In all cases, HBM should be in competent hands (whether it is occupational physician or industrial hygienist –this is the main point).