

CASE STUDY

Czechia

HUMAN BIOMONITORING – a tool for assessment of chemical exposure and health risks



Training in human biomonitoring (RECETOX, Brno, Czechia, 15–16 June 2023)

Implementing organization: WHO Collaboration Centre for Chemical Exposure and Risks (RECETOX),
WHO Regional Office for Europe
Coordinators: Dr Katerina Sebkova (RECETOX), Dr Irina Zastenskaya (WHO)

Overview, objective(s), activities

Within the framework of the 19th RECETOX Summer School, a 2-day training workshop was organized on the basics of human biomonitoring (HBM), based on a recently published WHO course (<https://apps.who.int/iris/handle/10665/368163>).

The goal of the workshop was to increase capacity for HBM. The objectives were to:

- pilot-test the WHO course on HBM for various participants: masters students, public health professionals and laboratory analysts;
- test use of group hands-on exercises for use in future training;
- get feedback from trainees; and
- provide training in the WHO approach to mercury HBM.

Engagement of partners and stakeholders

The workshop was organized by the WHO Collaborating Centre for Chemical Exposures and Risks (RECETOX) and the WHO European Centre for Environment and Health in collaboration with and with the support of Masaryk University. A total of 25 trainees from 10 countries (from the WHO Region of the Americas and the European Region) attended the workshop.

Experts from Belgium (University of Antwerp), Czechia (Masaryk University and RECETOX) and Slovenia (Jozef Stefan Institute) were invited to deliver presentations on specific topics, providing details suitable for the scientific background of the audience.

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19th RECETOX Summer School

12-16 June 2023

Event is organized in two blocks. Participants can register independently or stay for a complete week programme.

Non-Target Screening Training 12-14 June 2023	Human-Biomonitoring Training (WHO educational course) 15-16 June 2023
<ul style="list-style-type: none">• Introduction and current Galaxy landscape• W4M Galaxy tools (LCMS + statistics + visualizations)• RCK Galaxy tools (GC-MS + library building)• Galaxy tool development• Metabolomics, metabolomics & the chemical exposome• Moving from population to personal screening• Galaxy tools for HRMS data processing• Hands-on demos (mass spectral library building, GC/LC-HRMS data processing)	<ul style="list-style-type: none">• Introduction in HBM: exposure to chemicals, policy support, biomarkers, objectives• Planning and conducting HBM survey• Laboratory analysis, interpretation and communication of HBM results; use of HBM results for chemical risk assessment• HBM experience – national and international programmes• Mercury HBM• Students' work, discussion

Invited speakers:

• Elliott James Price RECETOX	• Martin Bobák RECETOX, UCL	• Irina Zastenskaya WHO	• Greet Schoeters University of Antwerp
• Helge Hecht RECETOX	• Hynek Pithart RECETOX, UCL	• Julien Saint Vanne LABERCA Nantes	• Janja Tratnik JSI Slovenia
• Yann Guitten INRAE Oniris – LABERCA			

Other information:

- Registration deadline: 1 June 2023
- 4 ECTS credits
- Fee covers: materials, accommodation - shared double/single room, breakfasts, light lunches, and coffee breaks:
 - Full week - 900 EUR/750 EUR
 - NTS block - 680 EUR/ 680 EUR

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World Health
Organization

European Region

European Centre for
Environment and Health
Bonn, Germany

Outcomes

The trainees:

- were given essential information on HBM and the WHO course on HBM (2023);
- received knowledge on designing population health surveys, biomarkers of effects and sensitivity, and collection of data;
- experienced the challenges in defining the objectives of HBM, designing and planning HBM surveys, and interpreting and communicating HBM results to different audiences;
- were informed about progress in development of national HBM programmes and the results of global and regional HBM surveys; and
- became familiar with the WHO approach to mercury HBM.

Information on WHO policies and publications and links to global and regional policies were provided.

Acknowledgement

The WHO Regional Office for Europe gratefully acknowledges the financial support from the Ministry of Environment of Czechia and the German Federal Ministry of the Environment, Nature Conservation, Nuclear Safety and Consumer Protection.

Key achievements

The main conclusion is that the WHO course on HBM can be widely used for training public health professionals in planning and conducting HBM surveys and interpreting and communicating the results. Information was also provided for promoting HBM programmes at national level.

Lessons learnt

The combination of lectures on basic HBM with detailed information on certain topics allowed better understanding of HBM and its role in studies of environmental health, chemical risk assessment and decisions in chemicals management. A practical exercise was necessary to make the training interactive and also to understand the importance of the preparatory steps and to share national experiences.

Key messages and steps forward

Dissemination of information on the WHO HBM course is useful and can play an important role in building capacity in countries planning HBM surveys or joining the HBM partnership.

More training in HBM should be provided at national level.

Hands-on practical exercises were useful for sharing experience from different countries and for practical transfer of the procedures presented in lectures.

Support from the WHO Collaborating Centre was critical for the smooth organization and conduct of the workshop.