

HUMAN BIOMONITORING FOR EUROPE

a harmonised approach

COPHES



DEMOCOPHES



AUTUMN NEWSLETTER

2011

For those active in the study, practice or development of Human Biomonitoring
www.eu-hbm.info

WELCOME!

This is the newsletter for **COPHES - a Consortium to Perform Human Biomonitoring on a European Scale** and its sister project **DEMOCOPHES - Demonstration of a study to Coordinate and Perform Human Biomonitoring on a European Scale**.

We aim to provide updates on the work and progress of the two projects as well as provide news and information in the area of human biomonitoring.

Most countries involved in DEMOCOPHES are busy sampling during the Autumn and we wish them well.

Thank you to all those who contributed to articles for this newsletter. If you would like to contribute an article or have any events that you would like us to include in the newsletter contact us at EU-HBM.Newsletterg@hpa.org.uk

The Editors

INSIDE THIS ISSUE:

[COPHES/DEMOCOPHES](#) **2**

["Train the Trainers" workshops in Berlin](#)

[Focus on Austria -](#) **4**

[Report on a biomonitoring study](#)

[Mercury Biomonitoring -](#) **5**

[WHO proposes mercury in maternal scalp hair as an indicator of environmental health](#)

[Health and Environment Alliance— two articles on endocrine disrupting chemicals](#) **6**

[Dates for the diary:](#) **7**

[Conferences, meetings coming up](#)

COPHES TRAINING COURSES

In this newsletter we report on the workshops organised by COPHES called 'train the trainers'. The course was developed to instruct those taking part in DEMOCOPHES and aims to train the trainers so that they can teach the fieldworkers in their home country. See page 2 for the report and read a participant's view of the workshop on page 3.



FOCUS ON...

In each newsletter we will focus on a country involved in the DEMOCOPHES study to learn about their expertise in human biomonitoring. For this newsletter its Austria. Read about a recent biomonitoring study on page 4.



COPHES / DEMOCOPHES

"TRAIN THE TRAINERS" WORKSHOPS IN BERLIN

By Louis Bloemen, Ulrike Fiddicke, Gerda Schwedler, Margarete Seiwert, Kerstin Becker and Marike Kolossa-Gehring.

In June 2011 two-day workshops in the context of the preparatory COPHES "Train the trainers" education were held in Berlin.

These workshops were the first of a series of training modules prepared by COPHES. This module focused on the topic "Fieldwork: Recruitment, Sampling and Questionnaires" and aimed to train for the fieldwork in DEMOCOPHES.

The successful conduct of the workshops was



Group one

due to a lot of preparatory work done by the leaders of the Work Package 6 (Training and capacity building) and Work Package 2 (Sampling, recruitment and sample collection). The German Federal Environment Agency in charge of Work Package 2 not only provided the premises but also organized the two days. In addition, they developed most lectures and headed most training units. Individual sessions were contributed by the teams responsible for 'Sample handling, analysis and biobanking', those in charge of 'Data analysis and integrated interpretation' and the group responsible for 'Operational EU framework'. Work Package 6 moderated the workshops. More details on work packages of COPHES can be found on the website www.eu-hbm.info

WORKSHOP AIMS

The workshops' aim was to inform those who are responsible for the fieldwork in the different countries and who will either perform the fieldwork themselves or train the interviewers.

A key phase in human biomonitoring (HBM) is the collection of samples and the administration of questionnaires by fieldworkers. Early within the work of COPHES it was realised that only thorough training of the fieldworkers from the participating countries in the collection of urine and hair samples and interviewing would ensure proper application of the methods defined for obtaining the appropriate samples. Although most fieldworkers have experience in interviewing, only good understanding of the questions and the possible answers by all fieldworkers will make sure the data collected through the questionnaires are of high quality and are comparable between countries.

At the suggestion of COPHES, most countries sent two fieldworkers to the training workshop. The 30 participants were divided over two workshops held in June 2011.

DAY ONE

The first day gave a short introduction to HBM, the pollutants to be measured, the toxicological evidence available and reference values established.

The following lectures dealt with theoretical and practical aspects of fieldwork:

- Study design and fieldwork,
- Standard Operating Procedures (SOPs)
- Training needs and structure
- Recruitment interviews

- Visit at home or at an examination centre
- Sampling of specimen
- Sampling of hair for mercury analysis was not only discussed but participants were invited to take a sample from each other and package this (see pictures on page 3).



After day one, Trainees enjoyed the sights of Berlin on a walking tour

"This workshop focused on "fieldwork, Recruitment , Sampling and Questionnaires"



Group two

Continued....

COPHES / DEMOCOPHES 'TRAIN THE TRAINERS' WORKSHOPS

Aspects of urine sampling such as timing, appropriate collection vessels, and methods for labelling were discussed. The day ended with an introduction to Computer Assisted Personal Interviewing (CAPI).

DAY TWO

The second day was the day of the interview. Basic aspects of interviewing, the fieldwork manual and interviewing aspects were presented. After discussing each question of the basic questionnaire, participants were asked to interview each other. This exercise gave the participants a good feel for the questionnaire and several country specific potential difficulties were identified and addressed by the specialists.



Group effort to obtain the right sample

A significant amount of time was also spent on explaining quality control measures. Ethical aspects of HBM were also in discussed.

During the training, several opportunities were created for participants to exchange country specific particularities and to exchange experiences. The social program after the first training day not only gave an impression of Berlin centre (although heavy rain frustrated) but also was used to further create a network for future exchanges.

EVALUATION

The evaluation forms contained some good suggestions for further development of the fieldwork training modules but also mirrored general appreciation of the opportunity to be well prepared for the fieldwork of DEMOCOPHES. All participants ensured that the Berlin workshops on fieldwork contributed greatly to the harmonization of the common HBM-approach.



Even short-haired people had to give a hair sample

THE VIEW POINT OF A PARTICIPANT

Is it really necessary to attend a workshop on how to perform interviews, to collect hair samples and handle the transport of urine samples? Yes – definitely, it is necessary and it was very useful to attend the two day course in Berlin. The course offered a comfortable balance of theoretical information and practical aspects. Especially the introduction and the training on how to collect the hair samples were important to reduce or overcome the inhibition to cut the hair of other people. At the same time this session was amusing (please see pictures).

The face to face performance of the basic questionnaire was very crucial. During the interview a subject's answer may lead to several more questions. An uncertainty was of how we should deal with the answers. But the training helped to clarify a lot of the specific and detailed (national) questions.

Back home the information as well as the well structured and distributed handouts facilitated the teaching of the national fieldworkers. Thus with the attendance of this course the national field work training was almost prepared, which is very efficient.

In summary: for a harmonised EU project like DEMOCOPHES it is indispensable to have this kind of training session. Only thereby it is guaranteed that the data collection (urine and hair samples as well as the questionnaire data) is coordinated and standardized to get comparable data at the end.

Andrea Lehmann, Switzerland

Thank you to the organisers who made these workshops a success!

FOCUS ON ... AUSTRIA

By Philipp Hohenblum

Austria, represented by the Umweltbundesamt (Environment Agency Austria) and the Austrian Ministry for the Environment, was among the first countries to join COPHES and to support harmonized European Human Biomonitoring.

The Umweltbundesamt started a national pilot study in 2008 and finished it in May 2011. It is based on the scientific principles which were elaborated in the European project ES BIO. Its design provides a model for a feasible strategy to implement a human biomonitoring system.

The Umweltbundesamt is Austria's leading expert institution analyzing pollutants in the environment. It runs an accredited laboratory which analyses chemical pollutants in all environmental compartments. Since 2009, the laboratory has also been accredited for human biomonitoring.

THE AUSTRIAN STUDY

The Austrian study lead by the Umweltbundesamt was designed as a cross-sectional study to determine the exposure of the Austrian population to specific environmental contaminants. It was carried out in co-operation with the Medical University of Vienna (Inst. for Environmental Health). The chemical body burden (in particular regarding widely used industrial chemicals with a toxic potential such as plasticisers or flame retardants in plastics) was investigated. Urine samples were analysed for phthalate metabolites, trisphosphates and octyl-, nonylphenol and bisphenol A. In blood samples PBDEs were analysed. Additionally, hair samples were tested for methyl mercury.

In early 2009, blood, urine and hair samples of 150 randomly selected volunteers were taken. The test persons examined were the mother, child and father (or the mother's partner) living in one household. The average age of mothers and fathers was 38 and 40 years, respectively. Children were aged between 6 and 11 years. 29 boys and 23 girls participated in the survey. Additionally, exposure indicators were collected by means of a

questionnaire. Statistical analysis based on questionnaire results was carried out.

STUDY CONCLUSIONS

The study shows that the Austrian population is burdened with phthalates and PBDE. Children are especially exposed to these chemicals. Trisphosphates were determined in a few samples. Methyl mercury, which is taken up primarily through fish consumption, was identified in low concentrations compared to countries with high fish (and seafood) consumption.

The ubiquitous presence of phthalates in our daily lives was underlined by additional tests of consumer products. Phthalates have multiple effects especially on the hormonal system. Hence, their occurrence in the urine of children should be interpreted as a signal that precautionary measures should be taken. New and up to now unreported links between the body burden and specific consumer products were demonstrated.

The study is based on scientific principles which were elaborated in the course of the EU project ES BIO (Expert Team to Support Human Biomonitoring in Europe), an EU project in the 6th research framework programme.

REFERENCES

- ES BIO project website www.eu-humanbiomonitoring.org
- Download the Austrian study (in German with English summary): <http://www.umweltbundesamt.at/fileadmin/site/publikationen/REPO324.pdf>
- Hohenblum P., Steinbichl P., Raffesberg W., Weiss S., Moche W., Vallant B., Scharf S., Haluza D., Moshammer H., Kundi M., Piegler B., Wallner P., Hutter H-P.: Pollution gets personal! A first population-based human biomonitoring study in Austria. Int. J. Hyg. Environ. H., in press.

Austria are contributing members of COPHES and DEMOCOPHES but are not carrying out the pilot study.

Environment Agency Austria

<http://www.umweltbundesamt.at/en/>

“The study shows that the Austrian population is burdened with phthalates and PBDF”

MERCURY BIOMONITORING

By Ludwine Casteleyn, Kerstin Becker
and Greet Schoeters

WHO proposes mercury in maternal scalp hair as an indicator of environmental health

The World Health Organization (WHO) European Centre for Environment and Health (ECEH) has recently selected prenatal exposure to mercury as one of environmental health indicators for the monitoring of the Parma commitments. These commitments are laid down in the declaration adopted at the 5th Ministerial Conference on Environment and Health held in Parma, Italy, in 2010. New indicators for monitoring Parma commitments will be implemented in the European Environment and Health Information System (ENHIS) maintained by



Hair samples are relatively easy to obtain

WHO. The proposed new indicators will be presented at the meeting of the European Environment and Health Task Force (EHTF), policy level body coordinating the European Environment and Health Process, at the end of October in Slovenia. The EHTF is expected to make a decision on the implementation of the proposed indicators.

TOTAL MERCURY IN SCALP HAIR

One of the Regional Priority Goals specifically calls for preventing health effects of prenatal and post-natal exposure to harmful substances. Through expert feedback exposure to mercury was defined as a relevant indicator. Prenatal exposure to mercury has been associated with neurotoxic health effects in children and can easily be assessed via [total mercury in maternal scalp hair](#). Furthermore, hair samples are relatively easy to obtain and non-invasive, which means that data will be collected in a maximum number of countries.

THE PROPOSED SURVEY

The proposed survey, if approved, will be implemented across the WHO European region (a total of 53 countries). It is envisaged that the baseline survey will be implemented in 2014 with the primary objective to provide cross sectional information on the distribution of exposure to mercury in the general population. Follow-up cross-sectional surveys would enable monitoring of temporal trends. National results will be compared with specified values and the aggregated national level data will be presented in the European Environment and Health Information System.

The general population arm of the proposed survey will involve a representative sample of women recruited at randomly selected maternity hospitals. The second arm of the survey will target highly exposed women. The minimum recommended sample size for the general population is 240 women per country. Individual countries might opt for larger sample sizes, as well as expanding the survey to include other pollutants using other biomarkers and sample matrices.

The use of human biomonitoring data will not only support the evaluation of policy measures aimed at reducing exposure but is also a powerful communication tool for health protection.

COPHES & DEMOCOPHES

WHO is coordinating the development of survey methodology and facilitating discussions with national experts. COPHES and DEMOCOPHES experts have made critical contributions to the development of this survey.

The COPHES team would also support its implementation through their contributions to statistical analysis, quality control of analytical aspects, data interpretation and communication.

COPHES contact at the World Health Organization is Andrey Egorov.

European Environment and Health Information System (ENHIS) maintained by WHO

<http://www.euro.who.int/enhis>

“Prenatal exposure to mercury has been associated with neurotoxic health effects in children”

“DUST UNDER THE BED” DEMONSTRATES NEED FOR A STRONGER REACH

by the Health and Environment Alliance (HEAL)

An analysis of dust samples have been used to urge faster action on Endocrine disrupting chemicals (EDCs) in REACH.

The dust was vacuumed up from underneath beds around the world in a project carried out by the Swedish Society for Nature, ChemSec and other NGOs. The aim is to demonstrate that households are being exposed to ever greater mixtures of harmful chemicals, and to therefore prompt the European Commission and every EU member state to speed up the process and nominate EDCs to the REACH Candidate List. The groups also want companies to take the initiative to phase out EDCs from their products before these chemicals are decided upon in REACH.

The report, entitled “Home sweet home - dusty surprises under the bed” shows that a hazardous mix of endocrine disrupting chemicals (EDCs) lie hidden under beds all around the world, with 11 brominated flame retardants and four phthalates at higher levels than before. The report is available here www.chemsec.org/endocrine-disrupters/dust-report

Health and Environment Alliance (HEAL) Toxics Policy Advisor, Lisette van Vliet put her vacuum cleaner to work under a bed in Belgium where a couple and their new baby live. She sent the sample to the Swedish Society for Nature Conservation for analysis. Responding to the findings of the analysis, she said: *“Endocrine disrupting chemicals (EDCs) have been increasingly linked to a range of health problems including impaired fertility, cancer and attention deficit disorders. Ten years ago, the European Union started its strategy to deal with EDCs - yet these hazardous chemicals are still being found in dust samples under the beds of pregnant women and new mothers. Will I have to tell these parents that at our current speed, it could take until their child grows up and is reaching middle age to deal properly with these harmful chemicals?”*

Media articles on the report appeared in key European news services including Chemical Watch, ENDS Europe, Chemeurope and Chemistry News. Coverage in the Swedish and Czech media was strong.

“Endocrine Disrupters are linked to a range of health problems”

“HEAL CALLS FOR MORE COUNTRIES TO MONITOR ENDOCRINE DISRUPTING CHEMICALS

by the Health and Environment Alliance (HEAL)

The Health and Environment Alliance (HEAL) is calling for more countries to add additional substances to the list of chemicals that they will monitor, including known or suspected endocrine disrupting chemicals (EDCs).

The COPHES & DEMOCOPHES biomonitoring projects are referred to in the recent 4th implementation report of the EU EDC strategy but the report does not mention the fact that some countries will be monitoring EDCs (see list of countries and substances). Lisette van Vliet, HEAL Toxics Policy Advisor says: “We would like the EU EDC strategy and discussions of EU public policy to recommend the biomonitoring of EDCs, which we think will also benefit COPHES & DEMOCOPHES.”

EU Member State countries that will analyse additional parameters in the DEMOCOPHES project

Country	BPA	Triclosan	Parabens
Belgium	x	x	/
Cyprus	x	x	x
Denmark	x	x	x
Luxembourg	x	x	x
Poland	x	x	x
Slovenia	x	x	x
Sweden	x	/	x

Health and Environment Alliance

<http://www.env-health.org/>

COPHES/DEMOCOPHES MEETINGS AND STAKEHOLDER WORKSHOPS

EUROPEAN WEEK ON HBM

COPHES and DEMOCOPHES are dedicating a whole week to human biomonitoring from 28 November till 02 December 2011 in Brussels.

The week will include the COPHES General Assembly meeting, DEMOCOPHES meetings, and a Press event. There will also be a number of workshops, see the table below. More details on the workshops and contact details for those interested in attending will soon be available on the website www.eu-hbm.info

Monday 28th November	Tuesday 29th November	Wednesday 30th November	Thursday 1st December	Friday 2nd December
COPHES/ DEMOCOPHES coordination team Meeting DEMOCOPHES meeting	DEMOCOPHES meeting COPHES General Assembly	Workshop on HBM experiences in Europe Press event Workshop on Analytical Methods	Workshop on bisphenol A Training on data- base construction & management Training on communication	Workshop on HBM and indoor/ outdoor air quality

POLICYMAKERS WORKSHOP

On 02 February 2012 a workshop related to use of HBM as a policy tool will take place in the CDMA building, of DG Research and Innovation in Brussels.

The workshop is on invitation only and is addressed particularly to Scientific committees (e.g. SCENIHR, SCCS, SCHER, SCOEL), technical expert level of EU Commission Services (DG Enterprise, DG Sanco, DG Environment), and European agencies (EFSA-CONTAM, EEA, EMA, ECDC, ECHA). This workshop will prepare a second meeting scheduled for June which will also involve member State representatives.

CONFERENCES

The International Society of Exposure Science (ISES) 21st Annual conference took place in Baltimore, 23-27 October <http://www.isesweb.org/> Members of COPHES and colleagues presented at the Conference In a biomonitoring symposium on Wednesday 26 October chaired and organised by Roel Smolders called 'Interpretation and Communication of Biomonitoring Survey Data: How Deep is the Atlantic?'

The 4th European Public Health Conference will take place in Copenhagen, Denmark, 10-12 November 2011 http://www.eupha.org/site/upcoming_conference.php

Adebiotech / INERIS Conference takes place in Paris, France on 15-16 November 2011 <http://www.colloque.env-sante.adebiotech.org/>

ACKNOWLEDGEMENTS

COPHES is funded by DG Research in the 7th Framework Programme (FP7/2007-2013), Project Number 244237. DEMOCOPHES is funded by DG Environment under the Life+ Programme (LIFE09/ENV/BE/000410)

**Congratulations to
Professor Jürgen
Angerer !**

as a result of his work in
human biomonitoring,
Professor Angerer has
been declared the top
cited Toxicologist in
Germany

All original literature published
between 2005 and 2008 has
been taken into account for
this ranking of Toxicologists in
Germany in the lab-Journal
09/2011 .

