

Study centre contact details:

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## DEMOCOPHES PILOT STUDY

### **Individual results letter**

Dear Mrs....

We would like to thank you and your child for your participation in the DEMOCOPHES study<sup>1</sup>. In this letter you can find your individual results. We conducted this pilot study to gain a more thorough understanding of some environmental pollutants in the European population.

From September 2011 until January 2012, 17 European countries collected information on the presence of chemicals in the population. Approximately 2000 mothers and their children provided urine and hair samples. In Belgium we collected and analysed samples of hair and urine from 129 mother and child pairs, like most other countries did as well.

We analysed the urine samples for cadmium (a heavy metal), cotinine (from tobacco smoke), phthalates and BPA (both present in plastics), and triclosan (present in personal care products). We analysed the hair samples for mercury (a heavy metal).

#### **Your Results**

Your hair and urine samples, and the ones from your child, were analysed in a carefully chosen laboratory to determine the levels of chemicals. The results, together with an explication on what they mean, are in the following sheets. We have invited the doctors in your region to the national information meeting on the Belgian and European results. You can certainly use this letter if you would like to inform your general practitioner about your personal results.

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<sup>1</sup> DEMOCOPHES study (LIFE09 ENV/BE/000410 - [www.eu-hbm.info](http://www.eu-hbm.info))

## **Some very important pointers for a good understanding of your personal results.**

When you go through your personal results, you must keep these important pointers in mind:

- Every individual is exposed to pollutants. This means that nobody's values will equal zero. The presence of these chemicals in the body doesn't mean they will automatically lead to negative effects on the health. Only abnormally high values indicate the necessity of a further follow-up.
- The examination consists of some short term urine markers (e.g. phthalates, cotinine, triclosan and Bisphenol A). This means they give an impression of the days prior to the day the samples were taken. Other markers (e.g. cadmium in urine, mercury in hair) show that a body has had a medium long term exposition or an exposition during its entire life.
- Biomarkers are used as an early indication of possible health risks. The values don't show any acute health damage in any case. A decrease of the values is possible.
- The measured concentrations can be used to predict the risk at health damage for a population group. The health of one single individual is determined by multiple factors (i.a. smoking pattern, eating pattern, etc.).
- Scientific conclusions can only be made when these chemicals have been measured in a sufficient amount of participants. Recommendations for prevention can be made after this.

If you have questions or worries, you can read the enclosed chemical factsheets, which include information on each of the chemicals. For any further information, please don't hesitate to contact us.

We would also like to invite you to the National information meeting on the Belgian and European results, which will be held in Brussels on November 28, 2012. At this moment, you can find the results on [www.nehap.be](http://www.nehap.be).

Thank you again for taking part in DEMOCOPHES. We sincerely hope that in the future this study will help to develop a way in which human biomonitoring studies can be used for the benefit of the entire European population .

Yours Sincerely,

For the national DEMOCOPHES team

## Your results for cadmium in urine

	Mother (Name):	Child (Name):
Level of cadmium measured	[x] µg/L	[x] µg/L
Comparison with levels of the other Belgian participants	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
Health based assessment values <sup>2</sup>	HBM I value <sup>3</sup> : <b>1 µg/L</b> HBM II value <sup>4</sup> : <b>4 µg/L</b> (values valid for adults)	HBM I value: <b>0.5 µg/L</b> HBM II value: <b>2.0 µg/L</b> (values valid for children and adolescents)
What does your result mean?	a) < HBM I: according to current scientific knowledge there is no risk for health effect. b) > HBM I and < HBM II: this value is higher than we would expect, but does not necessarily mean it will cause ill health.	
How to reduce exposure?	a) You can find information in the enclosed cadmium factsheet b) We would like to recommend that you reduce your exposure as much as possible. You can find sources in the enclosed cadmium factsheet.	

<sup>2</sup> Value taken from the German Commission on Human Biomonitoring,  
<http://www.umweltbundesamt.de/gesundheit-e/monitor/definitionen.htm>

<sup>3</sup> HBM I values correspond to the concentration of a substance in human biological material below which - according to the knowledge and judgement of the German Commission on Human Biomonitoring' - adverse health effects are not expected.

<sup>4</sup> HBM II values correspond to the concentration of a substance in human biological material above which - according to the knowledge and judgement of the German Commission on Human Biomonitoring' - there is an increased risk for adverse health effects in susceptible individuals of the general population.

## Your results for Phtalate metabolites in urine

Sum of the DEHP<sup>5</sup> metabolites: 50H-MEHP<sup>6</sup> and 5oxo-MEHP:

	<b>Mother (Name):</b>	<b>Child (Name):</b>
<b>Level of the sum of DEHP metabolites measured</b>	<b>[x] µg/L</b>	<b>[x] µg/L</b>
<b>Health based assessment values<sup>7</sup></b>	HBM I value: <b>300 µg/L</b> <i>(values valid for women of childbearing age)</i>	HBM I value: <b>500 µg/L</b> <i>(values valid for children aged 6 to 13 years)</i>
<b>Comparison with levels of the other Belgian participants:</b>	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
<b>What does your result mean?</b>	a) < HBM I: according to current scientific knowledge there is no risk for health effect b) > HBM I and < HBM II: this value is higher than we would expect in women of childbearing age, but does not necessarily mean it will cause ill health. This result only demonstrates a short-term increased exposure to this phtalate	a) < HBM I: according to current scientific knowledge there is no risk for health effect b) > HBM I and < HBM II: this value is higher than we would expect in children aged 6 to 13 years, but does not necessarily mean it will cause ill health. This result only demonstrates a short-term increased exposure to this phtalate
<b>How to reduce exposure?</b>	a) You can find information in the enclosed phtalate factsheet. b) We would like to recommend that you reduce your exposure as much as possible. You can find sources in the enclosed phtalate factsheet	

<sup>5</sup> DEHP is the di-2-ethyl hexyl phthalate

<sup>6</sup> 50H-MEHP (mono-2-ethyl-5-hydroxyhexyl phthalate) and 5oxo-MEHP (Mono-2-ethyl-5-oxohexyl phthalate) are metabolites of DEHP (di-2-ethyl hexyl phthalate)

<sup>7</sup> Value taken from the German Human Biomonitoring Commission,  
<http://www.umweltbundesamt.de/gesundheit-e/monitor/definitionen.htm>

Other phthalate metabolites:

	Mother (Name):	Child (Name):
Level of MBzP <sup>8</sup> measured	[x] µg/L	[x] µg/L
Comparison with levels of other Belgian participants	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
Level of MiBP <sup>9</sup> measured	[x] µg/L	[x] µg/L
Comparison with levels of other Belgian participants	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
Level of MnBP <sup>10</sup> measured	[x] µg/L	[x] µg/L
Comparison with levels of other Belgian participants	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
Level of MEP <sup>11</sup> measured	[x] µg/L	[x] µg/L
Comparison with levels of other Belgian participants	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
What does your result mean?	Based on current knowledge, there is no health based guidance value for the above reported phthalate metabolites. The results can be used by authorities to study its presence in the population and to form measures for prevention.	
How to reduce exposure?	You can find information in the enclosed phthalate factsheet. The levels of phthalates in urine represent a short term exposure of the past hours. Elevated levels can occur due to a temporary exposure, and may decrease if exposure is reduced.	

<sup>8</sup> MBzP (mono-benzylphthalate) is a metabolite of BBP (benzylbutyl phthalate)

<sup>9</sup> MiBP (mono-iso-butylphthalate) is a metabolite of DiBP (di-isobutyl phthalate)

<sup>10</sup> MnBP (mono-n-butyl phthalate) is a metabolite of DBP (di-n-butyl phthalate)

<sup>11</sup> MEP (monoethylphthalate) is a metabolite of DEP (diethyl phthalate)

Your results for cotinine <sup>12</sup>in urine

	<b>Mother (Name):</b>	<b>Child (Name):</b>
<b>Level of cotinine measured</b>	[x] µg/g creatinine	[x] µg/g creatinine
<b>Comparison with levels of other Belgian participants:</b>	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
<b>Comparable data</b>	Persons with a value of more than 50 µg/g creatinine can be regarded as smokers or heavy exposed non-smokers <sup>13</sup>	
<b>What does your result mean?</b>	<p>a) We could not find cotinine in your urine. This shows us you were not exposed to tobacco smoke just before you gave your urine sample.</p> <p>b) Detectable values of cotinine in your urine mean that you have come into contact with cigarette smoke, either from smoking yourself, or from someone else smoking. Smoking is hazardous to your health.</p> <p>c) High values of cotinine in your urine mean that you have come into contact with cigarette smoke, either from smoking yourself, or from someone else smoking. Smoking is hazardous to your health.</p>	
<b>How to reduce exposure?</b>	<p>a) It is good to continue avoiding exposure to tobacco. More information on cotinine can be read in the enclosed factsheet.</p> <p>b) and c) Do not smoke and avoid contact with cigarette smoke. If you need help with or information about quitting smoking, contact 'Tabakstop' at 0800 111 00 or consult the links on our website <a href="http://www.nehap.be">www.nehap.be</a>.</p>	

<sup>12</sup> Cotinine indicates the exposition to nicotine.

<sup>13</sup> Value from Riboli et al. (1995): Misclassification of smoking status among women in relation to exposure to environmental tobacco smoke. *Eur. Respir. J.* 8, 285-290.

**Your results for mercury in hair**

	<b>Mother (Name):</b>	<b>Child (Name):</b>
<b>Level of mercury measured</b>	<b>[x](µg/g hair)</b>	<b>[x](µg/g hair)</b>
<b>Comparison with levels of other Belgian participants:</b>	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
<b>Health based assessment values</b>	Value: <b>2.3 µg/g<sup>14</sup></b>	Value: <b>2.3 µg/g</b>
<b>What does your result mean?</b>	a) Your result is <b>below 2.3 µg/g.</b> According to current scientific knowledge there is no risk for health effect b) Your result is <b>above 2.3 µg/g.</b> This is higher than we would expect in the general population.	a) Your result is <b>below 2.3 µg/g.</b> According to current scientific knowledge there is no risk for health effect b) Your result is <b>above 2.3 µg/g.</b> This is higher than we would expect in the general population
<b>How to reduce exposure?</b>	a) You can find information in the enclosed mercury factsheet b) We would like to recommend that you reduce your exposure as much as possible. You can find more information on sources on the mercury fact sheet.	

<sup>14</sup> <http://www.who.int/foodsafety/publications/chem/mercuryexposure.pdf>

## Your results for Bisphenol-A in urine

	Mother (Name):	Child (Name):
Level of Bisphenol-A measured	[x] mg/L	[x] mg/L
Comparison with levels of other Belgian participants:	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
Health based assessment values <sup>15</sup>	HBM I value: <b>2.5 mg/L</b> (value valid for adults)	HBM I value: <b>1.5 mg/L</b> (value valid for children)
What does your result mean?	<p>a) Your result is <b>below 2.5 mg/L</b>. According to current scientific knowledge there is no risk for health effect</p> <p>b) Your result is <b>above 2.5 mg/L</b>. This is higher than we would expect in adults but does not necessarily mean it will cause ill health.</p>	<p>a) Your child's result is <b>below 1.5 mg/L</b>. According to current scientific knowledge there is no risk for health effect</p> <p>b) Your child's result is <b>above 1.5 mg/L</b>. This is higher than we would expect in children but does not necessarily mean it will cause ill health.</p>
How to reduce exposure?	<p>a) You can find information in the enclosed Bisphenol A factsheet</p> <p>b) We would like to recommend that you reduce your exposure as far as possible. You can find sources of Bisphenol A in the enclosed factsheet.</p>	

<sup>15</sup> Value taken from the German Commission on Human Biomonitoring', <http://www.umweltbundesamt.de/gesundheit-e/monitor/definitionen.htm>

**Your results for triclosan in urine**

	<b>Mother (Name):</b>	<b>Child (Name):</b>
<b>Level of triclosan measured</b>	[x] µg/L	[x] µg/L
<b>Comparison with levels of other Belgian participants</b>	50% of mothers are lower than... 90% of mothers are lower than...	50% of children are lower than... 90% of children are lower than...
<b>What does your result mean?</b>	Based on current knowledge, there is no health based guidance value for triclosan. The results can be used by authorities to study its presence in human and to formulate measures for prevention.	
<b>How to reduce exposure?</b>	You can find information in the triclosan factsheet enclosed. The levels of triclosan in urine represent a short term exposure of the past hours. Elevated levels can occur due to a temporary exposure, and may decrease if exposure is reduced.	