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science and policy
for a healthy future

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Report on ongoing activities and existing data and data gaps for the 1st prioritised substances including a list of metadata that can be uploaded in IPCheM

Deliverable 7.1

WP 7 - Survey design and fieldwork preparation

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List of abbreviations

AWP   Annual Work Plan

Cd   Cadmium

CGL   Chemical Group Leaders

Cr   Chromium VI

DEP   Azienda Sanitaria Locale Roma

DPH   Universita Degli Studi Di Napoli Federico II

FIOH   Finnish Institute of Occupational Health

FMUL   Faculty of Medicine, University of Lisbon

HBM   Human biomonitoring

HSE   Health Service Executive

IPCheM   Information Platform for Chemical Monitoring

ISS   Istituto Superiore di Sanita

NIJZ   Nacionalni Institut Za Javno Zdravje

NHC   National Hub Coordinator

NHCP   National Hub Contact Point

THL   Terveyden Ja Hyvinvoinnin Laitos

UKF   Constantine the Philosopher University in Nitra

UoA   Ethniko Kai Kapodistriako Panepistimio Athinon

VITO   Vlaamse Instelling Voor Technologisch Onderzoek N.V.

WHO   World Health Organization

WP   Work package

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Executive summary

Human biomonitoring is a well-established field of research with high rate of scientific production. Still, there is a lack of integrated information required for the production of adequate knowledge in this area. In this context, the development of suitable methods for systematic mapping of available evidence and identification of research gaps is needed.

The main aim of Task 7.1 was to identify existing data and data gaps on the area of human biomonitoring (HBM), including biobank samples. To answer to this aim, a triangulation of methods was used, including an online questionnaire and literature reviews covering available published scientific papers (traditional academic research) and books of proceedings of HBM-related conferences containing published and non-published data.

For the questionnaire data, descriptive analyses and stratification by European-defined region, target population and groups of substances were performed. For the literature reviews, a systematisation of the search, review and interpretation process of the data was recorded, with the data from each selected paper being extracted into a synoptic table.

The use of three different approaches provided comprehensive though complementary information on the existing HBM surveys:

▸ Considering the data obtained from the questionnaire, an asymmetry was found in terms of countries/regions where the identified studies on HBM have been developed, with Belgium, Italy and Spain being the countries where the data collection occurred more frequently. This might reflect an under-representation in the studies carried by specific countries, a trend that was verified throughout the three approaches used.

▸ Although maintaining the abovementioned asymmetry, the results change when considering the studies identified using the other two approaches: for the studies from the literature review, data was mainly collected in Denmark and Norway, while for the review of the books of proceedings data was predominantly collected in Germany, France and United Kingdom.

▸ Most of the reported studies identified with the questionnaire and the review of the books of proceedings had a regional or national scope while studies from the literature review had mainly a regional implementation level.

▸ Although the majority of the studies identified with the three approaches were already concluded or initiated/ongoing, it was possible to map projects in their planning stage (which was also verified in the stratified analysis by European-defined region).

▸ The majority of the work that has been developed in the HBM area relates to cross-sectional and longitudinal studies as seen in the results from the questionnaire. The other two approaches also pointed into the direction of the majority of studies being concluded.

▸ Children and adults are the main target population of the studies/projects/activities identified with the questionnaire.

▸ The analyses of the nine groups of substances under study revealed differences in terms of the number of projects dedicated to each substance, being most marked the absence of studies focused on the anilin family reported through the questionnaire as well as very few studies on Cr VI and emerging chemicals. The undertaken literature reviews did not provide an additional understanding of this difference.

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▸ An analysis of data collected with the questionnaire by European-defined region reveals that in the North and East, the most studied substances were phthalates/DINCH, whereas in the West and South was cadmium.

▸ Considering the groups of substances distributed by European-defined region, age groups and status of the studies/projects/activities undertaken in the community (general population), the following was found: the reported studies were mostly concluded, the majority of them had adults and children as target population, cadmium as the main substance under study, and they were mostly conducted in Southern and Western regions of Europe.

▸ For the studies/projects/activities reported as having a national representativeness level, the majority involved children and newborns. In studies with children, the most analysed substances were cadmium, flame retardants, bisphenols and phthalates. For those studies with newborns, the main substances under study were flame retardants. In both cases, these studies were mostly conducted in Western Europe.

▸ Considering the results of the survey, it was possible to verify that there is a variety of biological samples collected, with many projects having several of those samples stored and some of them available for access and/or use by other researchers/organisations.

▸ Analyses of the studies/projects/activities (general population) with urine samples and blood by group of substances and regions and age groups, the largest number of studies report to data collected from Western and Northern regions. Concerning the target population and substances under study, the focus is put on children and phthalates, respectively.

▸ Information about several biomarkers, HBM samples and clinical parameters, anthropometric data, physiological indicators, outdoor pollution and occupational exposure has been collected with the questionnaire.

▸ As for biobanked samples, the majority of the projects allow (partial) access to the database of non-biological data and have available for theHBM4EU partners the questionnaire used for data collection.

▸ The concept of "quality criteria" to classify the studies/projects/activities identified with the questionnaire was altered to "criteria that index a level of evidence" given the fact that there is a pre-assumption that all projects have internal validity and, therefore, quality. For building up overall pictures about collected data and information it is more important to know how potentially strong is the collected (or to be collected) evidence. An overarching appreciation of the potentially produced (or to be produced) evidence by each study/project/activity found through the survey revealed that almost half of them have characteristics that can be of high or very high level.

▸ A list of metadata available to be uploaded into IPCheM is suggested, being nearly 20% of the data accessible for use. For European representative studies, a deeper data analysis of the data gaps will be done by VITO in WP 10 and Task 7.2.

▸ The categorisation of the single compounds into the categories A-C is not addressed in this report and will be done by the CGLs under task 4.4 scoping documents.

In conclusion, with the developed work for this task an important basis to inform further research needs in this realm and to contribute to more targeted policy measures was laid, thus contributing to the overarching HBM4EU goal of generating knowledge to inform the safe management of chemicals and so protect human health.

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1 Introduction

Human biomonitoring (HBM) has gained considerable importance over the last few years, being a well-established field of research with high rate of scientific production. A quick search in the PubMed and ISI Web of Science electronic databases using the terms "Human biomonitoring" (MeSH) and "Biomonitoring" reflects precisely this rapid increase in the number of published papers, as depicted in the figure below.
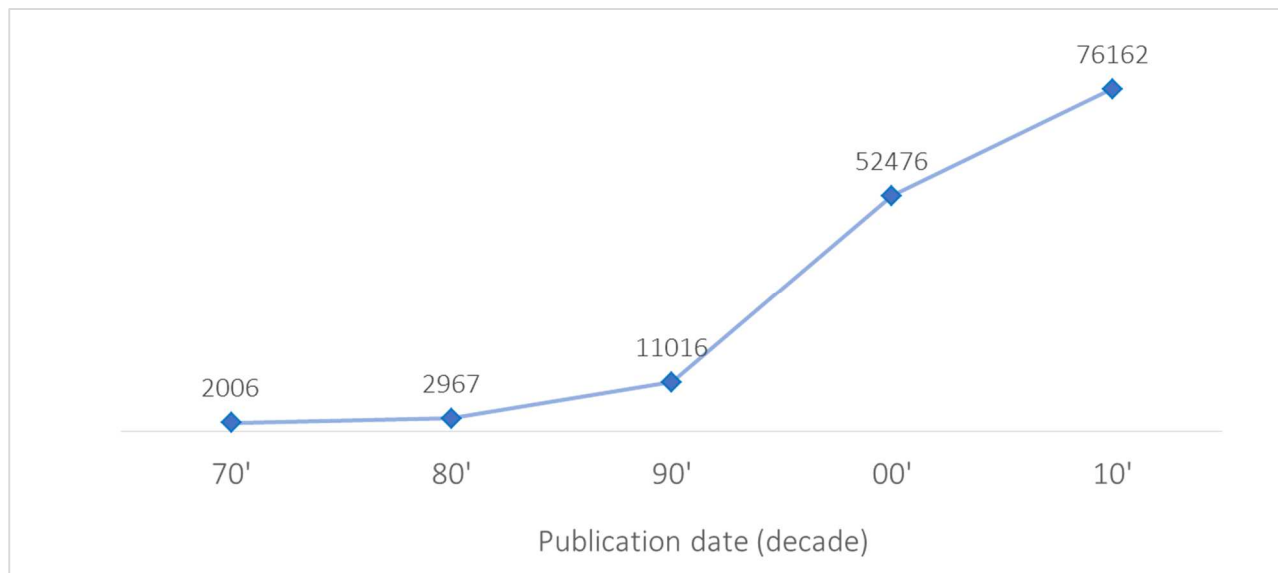
Figure 1: Number of published papers in human biomonitoring (PubMed and Web of Science)

Still, due to a spawn of the complexity of contemporary HBM questions with large number of possible competing ideas for research and to different survey designs and analytical methodologies, there is a striking lack of integrated information required for the production of adequate knowledge in this area[1,2].

Over the last few years, the importance of undertaking research in the areas of environment and health has been reinforced given their pivotal role for nowadays society as mentioned in a recent World Health Organization (WHO) report[2]. In fact, several literature reviews have been produced, summarising the existing knowledge. Notwithstanding, the documents are very specific in what concerns to the substances or contexts under study[3-6].

The current state of affairs poses some difficulties with regard to HBM data comparability[1,7]. This emphasises the need to develop suitable methods for systematic mapping of available evidence

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[1] Bauer S. Societal and ethical issues in human biomonitoring – a view from science studies. Environ Heal. 2008;7(Suppl 1):S10.

[2] WHO Regional Office for Europe. Setting research priorities in environment and health. Copenhagen, Denmark; 2017.

[3] Goodman JE, McConnell EE, Sipes IG, Witorsch RJ, Slayton TM, Yu CJ, et al. An updated weight of the evidence evaluation of reproductive and developmental effects of low doses of bisphenol A. Crit Rev Toxicol. England; 2006 May;36(5):387–457.

[4] Kim YR, Harden FA, Toms L-ML, Norman RE. Health consequences of exposure to brominated flame retardants: a systematic review. Chemosphere. England; 2014 Jul;106:1–19

[5] Chen C, Xun P, Nishijo M, He K. Cadmium exposure and risk of lung cancer: a meta-analysis of cohort and case-control studies among general and occupational populations. J Expo Sci Environ Epidemiol. United States; 2016 Sep;26(5):437–44.

[6] Foster WG, Evans JA, Little J, Arbour L, Moore A, Sauve R, et al. Human exposure to environmental contaminants and congenital anomalies: a critical review. Crit Rev Toxicol. England; 2017 Jan;47(1):59–84.

[7] Angerer J, Ewers U, Wilhelm M. Human biomonitoring: State of the art. Int J Hyg Environ Health. 2007;210(3–4):201–28.

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and identification of research gaps which will ultimately contribute to the development of a coherent and harmonised research approach throughout Europe.

A vast majority of available synthesising strategies are based on narrative and systematic reviews. However, these research designs cover mainly literature available via publication, with under-representation of documents created by other agents of knowledge production. Moreover, the well recognised 'non-significant result' bias[8] impairs the quality of systematic reviews or meta-analyses.

In this context, the use of a triangulation of methods is necessary in this realm, to continuously map and expand an inventory of HBM studies that will help to inform further research.

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[8] Weber et al. Unpublished research from a medical specialty meeting: why investigators fail to publish. JAMA. 1998; 280(3):257-259.

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2 Scope of task 7.1 activities

The **main aim** of task 7.1 was to **identify existing data and data gaps on the area of HBM, including biobank samples**. Overall, the task entailed several activities:

1 Development of an online questionnaire for the NHCPs (coordinated by the NHC) to do an inventory of concluded (within last 10 years), ongoing or planned (for starting up within the next five years) relevant studies, projects and activities and stored samples in the HBM area.

2 Detailed and thorough assessment of the available biomonitoring and exposure data literature performed on each substance with the collaboration of different partners and in close collaboration with CGLs.

3 Identification of non-published studies through the review of books of proceedings of HBM-related conferences, complementarily to the use of other primary sources.

4 Definition of quality criteria for data comparability.

5 Categorisation of the single compounds into the 3 "knowledge"-categories (A-C)[9].

6 Identification of spatial and temporal data gaps to answer the policy questions for the prioritised substances.

7 Compilation of a list of metadata that can be uploaded to IPCheM to Task 10.5.

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[9] The categorization of the single compounds into the categories A-C will be done by the CGLs under task 4.4 scoping documents (Category A: Known substances, sufficient existing data; Category B: Known substances, moderate missing data gap; Category C: Known substances, significant missing data gap Moderate challenge/risk in terms of development).

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3 Approach

Given the main aim of Task 7.1 of identifying existing data and data gaps on the area of biomonitoring a triangulation of methods was used (Figure 2). This implied the combination of approaches with the development of an online questionnaire and literature reviews covering available published scientific papers (traditional academic research) and books of proceedings of HBM-related conferences containing published and non-published data. This last approach – not included in the Annual Work Plan (AWP) for year 1 – was used to get a more complete picture of existing data, thus complementing the information collected with the questionnaire and the literature review.
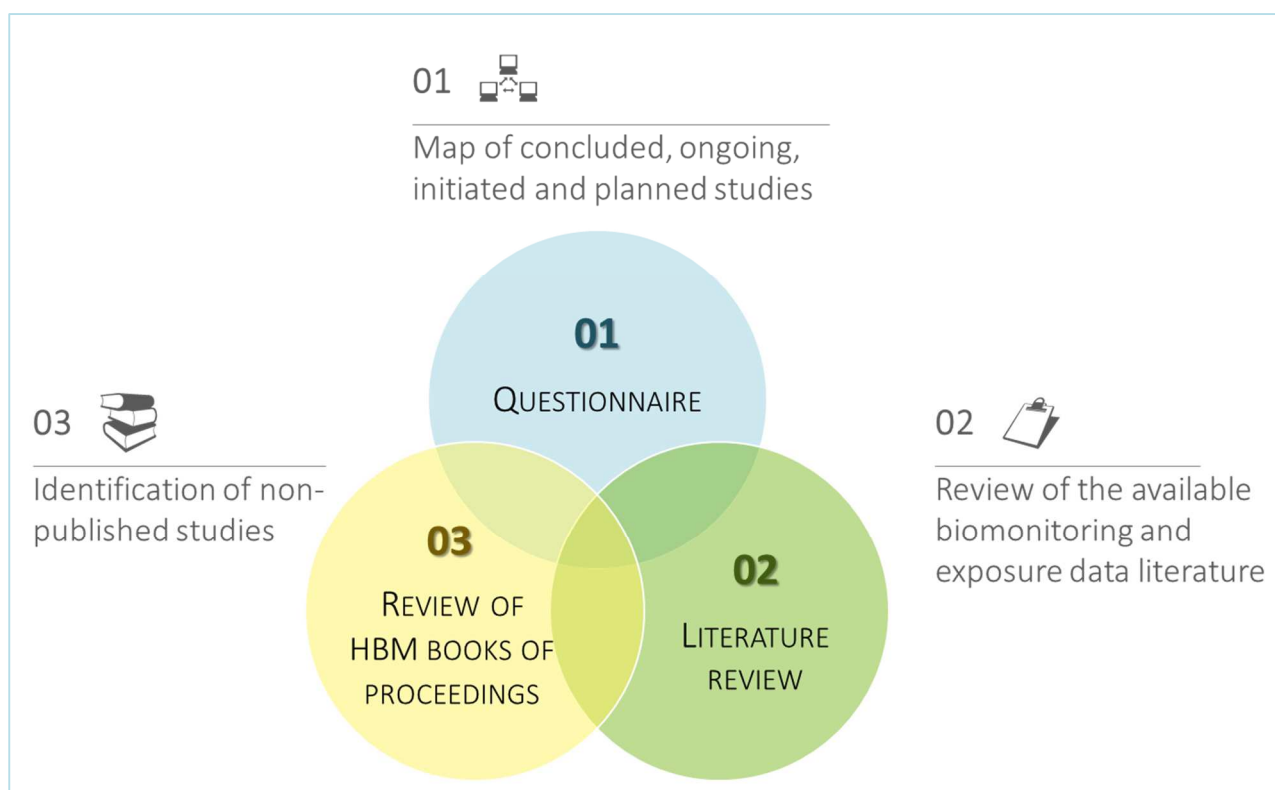
Figure 2: Approaches used to identify existing data and data gaps regarding studies developed in the area of biomonitoring

3.1 Questionnaire on existing surveys

An online questionnaire on existing surveys was developed by FMUL considering the need to identify data gaps in the field of human biomonitoring in terms of concluded (within the last ten years), ongoing or planned (for starting up within the next five years) relevant studies, projects and activities as well as stored samples (within the consortium).

The questionnaire was sent for review to the task partners who were consulted over two rounds. Each partner went through the entire questionnaire though giving specific support according to their specific expertise: HSE, NIJZ and ISS on environmental epidemiological and HBM surveillance studies; FIOH, DEP, DPH and UKF on occupational studies, and THL and UoA on health surveys.

Additional comments and requests to introduce new questions to the main questionnaire were also received mainly from WP 7 and WP 10. It was decided in the HBM4EU kick-off meeting, in

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February 2017, not to overburden the NHCP with different questionnaires and to integrate some additional questions in the questionnaire that was being developed for task 7.1.

FMUL made the final review of the questionnaire that entailed the 10 sections covering the following themes (Appendix 1):

- General information
- Description of target population and method of selection of participants
- Fieldwork and data collection
- Other data
- Quality control procedures
- Data analysis
- Data protection, availability and conditions of access and use
- Communication
- Obstacles, shortcomings and difficulties
- Additional information

A specific questionnaire on occupational exposure was also developed by DPH, UKF and FIOH, in collaboration with FMUL (Appendix 2). The questionnaire comprised seven main sections:

- Proponent Institution/Organisation of the study
- Characteristics of data
- Study population
- Characteristics of the study population
- Occupational exposures
- HBM data
- Other institutions that have similar national data

Both questionnaires were imbedded by FMUL in an online platform were respondents could access it (http://hbm4eu.info/). The web platform also included a brief overview about the HBM4EU Initiative as well as the contacts that could be used in case of doubts or in case of need of technical assistance.

The survey to the NHCP was launched by the NHC on March 27, 2017 with a request for the form completion until April 10, 2017 (confidential responses). The email was accompanied by a pdf version of the questionnaire (Appendix 1) and a brief tutorial.

Given the small amount of completed answers received, the extent of the questionnaire which could have been hindering the potential participants to finish its completion and the previewed timeline in the AWP (it was expected to receive the answers during the month of April), an extended deadline was then decided (April 28, 2017). Six reminders within this period were sent by the NHC.

The small number of answers received was even more pronounced for the occupational exposure questionnaire. As such, and attending to the specificity of the posed questions, some of the sent reminders targeted particular expert institutions that were developing their work on occupational exposure.

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The last reminder was sent individually to each of the NHCP of the countries who did not answer to the questionnaire until then.

FMUL also elaborated a plan for the statistical analysis of the data collected with the questionnaire (Appendix 3). The document presents the strategy for reporting univariate statistics for each variable and entails a dictionary of variables, with a detailed description of how the data are presented in the database. The statistical analysis plan is structured in five columns:

- Variable name: The name of the variable in the database
- Label: The description of the variable (corresponding to the label of each variable on the databases)
- Question: The original question that appeared in the questionnaire
- Values and codes: The options each variable can assume in the databases
- Analysis: The planned statistical analysis to follow for each variable

Given the integration of several additional items to the questionnaire at the request of several task partners / WP leaders, the plan was sent to each of them for review to assure that the most relevant analysis would be done.

All statistical analysis performed were operated on SPSS for Windows (version 23.0). Descriptive analyses were done for some of the variables in the questionnaire. Moreover, additional data analyses stratified by European-defined region[10], target population and groups of substances were performed. The variables included in the stratified analyses were chosen considering the opinions of task 7.1 partners on the most relevant ones of the overall questionnaire.

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[10] The expression "European-defined regions" used in this deliverable expresses an adaptation of the categorization of European countries according to the United Nations geoscheme for Europe: https://en.wikipedia.org/wiki/United_Nations_geoscheme_for_Europe (accessed: 22.11.2017) North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

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3.2 Literature review

A review of the literature was also undertaken for Task 7.1. The proposed literature review aimed to identify the existing studies on biomonitoring and chemicals exposure (including occupational exposure) regarding the nine prioritised substances (thus complementing the data collected with the questionnaire): phthalates/DINCH, bisphenols, per-/polyfluorinated compounds, flame retardants, Cd and Cr, PAHs and air pollutants, anilin family: MOCA, chemicals mixtures and emerging chemicals. The review was performed by nominated responsible partners per substance, in close collaboration with CGLs.

Each partner was assigned to the following substances:

Partner/CGL	Prioritised substance/s
UKF	Phthalates / DINCH
THL	PFAS and Flame retardants
FMUL	Cd
ISS	Cr VI
FIOH	Anilines (anilines and MOCA, or substitute anilines or amines) and Bisphenols

FMUL proposed the following process for the literature review for Cadmium (Appendix 4):

1. Definition of two sets of key-words to be used as alternatives which were later reviewed by some of the partners. For example, the combination of keywords used for Cadmium were:

Cadmium AND "Human biomonitoring"	Cadmium AND "Professional exposure"
Cadmium AND Environmental monitoring	Cadmium AND "Occupational data"
Cadmium AND Biological monitoring	Cadmium AND workers
Cadmium AND "Environmental surveillance"	Cadmium AND exposure AND industry
Cadmium AND Environmental exposure	Cadmium AND Occupational health
Cadmium AND Health surveys	Cadmium AND occupational groups
Cadmium AND Risk assessment	Cadmium AND "workplace exposure"
Cadmium AND "Health risks"	Cadmium AND "non-occupational exposure"
Cadmium AND "Health effects"	Cadmium AND "population exposure"
Cadmium AND "Effect biomarkers"	Cadmium AND "urine analysis"
Cadmium AND "Exposure biomarkers"	Cadmium AND "exposure assessment"
Cadmium AND Occupational exposure	Cadmium AND "HBM values"

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2. Eligibility criteria | i) electronic databases for the consultation: Medline (PubMed), Web of Science and EBSCO; ii) language of the documents: English; iii) publication date: From 01/01/2007 to 31/12/2016

3. Inclusion criteria | i) papers referring to studies of the HBM4EU partners; ii) documents with empirical HBM data (do not include opinion or conceptual papers that do not mention an HBM study); iii) papers produced within the countries of the consortium.

The proposal for the literature review was then sent to the partners, asking them to comment the key-words and the proposed search process. After receiving the comments, each partner was invited to do the review for the prioritised substance to which they were assigned to.

Again, a template document was sent to the partners as a referee to facilitate data extraction for the literature review (Appendix 5).

3.3 Review of books of proceedings of HBM-related conferences

A complementary review was undertaken covering books of proceedings of HBM-related conferences. With this additional approach, we intended to identify non-published data and therefore complement the additional information collected with the questionnaire and the literature review.

The search was undertaken in the grey literature (i.e., Google). Search keywords formed two blocks and were combined pairwise. Block 1: *conference, congress, seminar, book of proceedings*. Block 2: *human biomonitoring, environmental monitoring, biological monitoring, environmental surveillance, environmental exposure, health surveys, risk assessment, health risks*. An additional manual search for other editions/years of each identified conference was undertaken in order to access the books of proceedings.

The books of proceedings considered eligible for analysis (in case of being related to the goal of the review and meeting the same criteria defined for the literature review (date from 01/01/2007 to 31/12/2016, including studies of the HBM4EU partners and within the countries of the consortium) were read and each abstract verified. The studies were selected for data extraction if they were done / being done in the countries of the institutions of the HBM4EU consortium.

Data were then extracted into a synoptic table that recorded the title of the conference, the date, the country, the presentation title, the author/s, the institution and the presented study/program/initiative.

This task was an additional activity not included in the description of task 7.1 in the AWP for year 1. Therefore, it was a responsibility of FMUL.

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4 Main results

4.1 Questionnaire on existing surveys

The questionnaire on existing HBM surveys aimed to identify concluded (within last 10 years), ongoing or planned (for starting up within the next five years) studies, projects and activities related to the nine prioritised substances to identify data gaps (including spatial and temporal gaps).

Data was collected between March 28 and June 8, 2017. A total of 124 questionnaires were filled in after NHCPs consultation. The distribution of countries answering to the questionnaire (considering the reported institution responsible for the study/project/activity implementation) is presented in the following table.

Table 1: Countries of the institution responsible for the study/project/activity implementation

	Frequency (n)	Percent (%)
Austria	8	4,2
Belgium	**23**	**12,0**
Croatia	5	2,6
Cyprus	4	2,1
Czech Republic	8	4,2
Czech Republic and Slovakia	1	,5
Denmark	12	6,3
Finland	1	0,5
France	7	3,7
Germany	8	4,2
Greece	6	3,1
Hungary	3	1,6
Iceland	2	1,0
Ireland	3	1,6
Israel	7	3,6
Italy	**17**	**8,9**
Latvia	1	0,5
Lithuania	3	1,6
Luxembourg	3	1,6
Netherlands	2	1,0
Norway	3	1,5
Poland	4	2,1
Portugal	9	4,7
Romania	4	2,1
Slovakia	10	5,2
Slovenia	10	5,2
Spain	**14**	**7,3**

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	Frequency (n)	Percent (%)
Sweden	7	3,6
Switzerland	2	1,0
United Kingdom	5	2,6
No answer	1	0,8
Total	**124**	**100,0**

Hereinafter, overall results (descriptive analysis) are presented considering some of the variables in the questionnaire. Moreover, data analyses stratified by European-defined region[11], target population and groups of substances will be presented. The variables included in the stratified analyses were chosen considering the opinions of task 7.1 partners on the most relevant ones of the overall questionnaire. Other results of the questionnaire, not presented here, can be consulted on the HBM4EU wiki which includes a detailed report with all the performed analysis.

Additional data analysis can be done by all HBM4EU partners as the data is provided in Excel, SPSS and part of it in an ACCESS version of the database which are accessible via the wiki. Appendix 3 includes the name of the variable that appears in the database, its description and the associated values, information that will support additional data analyses to be done.

The following results from the questionnaire on existing surveys are presented into two sections, one focusing on existing studies/projects/activities, and the other on the existing samples.

▪ **EXISTING STUDIES/PROJECTS/ACTIVITIES**

Data have been mainly collected in Belgium (15,3%), Italy (12,1%) and Spain (8,1%) (Table 2).

Table 2: Country/countries where data were/are/will be collected

	Frequency (n)	Percent (%)
Austria	8	6,5
Belgium	**19**	**15,3**
Croatia	2	1,6
Cyprus	2	1,6
Czech Republic	4	3,2
Denmark	9	7,3
Finland	1	0,8
France	6	4,8
Germany	4	3,2
Greece	5	4,0
Iceland	2	1,6
Israel	7	5,6
Italy	**15**	**12,1**

[11] North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

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	Frequency (n)	Percent (%)
Latvia	1	0,8
Lithuania	3	2,4
Netherlands	1	,8
Norway	3	2,4
Portugal	5	4,0
Slovakia	6	4,8
Slovenia	4	3,2
Spain	**10**	**8,1**
Sweden	4	3,2
Switzerland	1	0,8
United Kingdom	1	0,8
Total	**192**	**100,0**

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Following the distribution of countries in the previous table, it can also be seen in Figure 3 that Belgium, Italy and Spain were the most frequent countries of data collection reported.
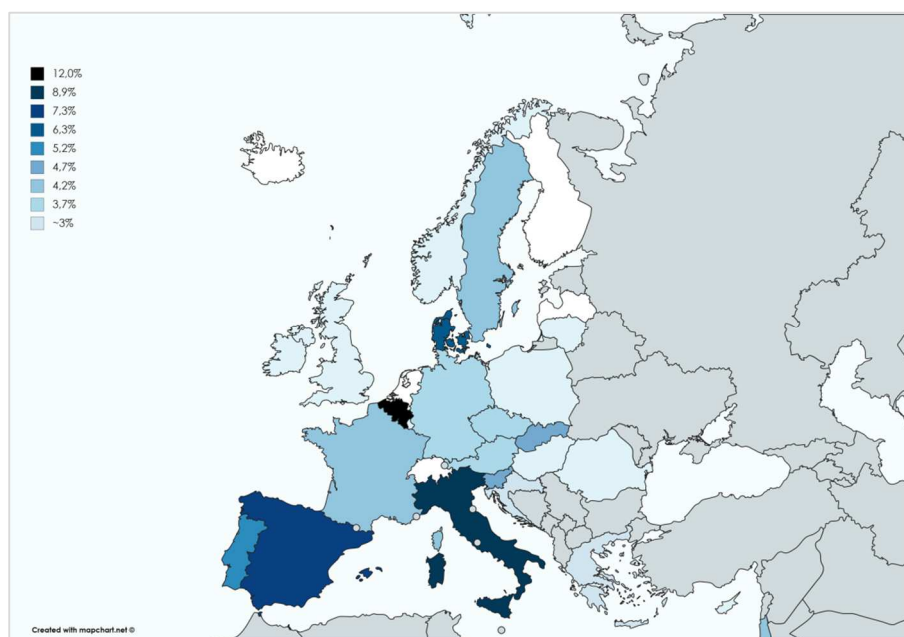
Figure 3: Country/countries where data were/are/will be collected

The studies captured with our survey had mainly a national or regional implementation level, although almost 11% of them were international, involving institutions from more than one country (Table 3).

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Table 3: Study/project/activity implementation level

	Frequency (n)	Percent (%)
International	15	10,5
National	**57**	**39,9**
Regional	**65**	**45,5**
Other	6	4,2
Total	**143**	**100,0**

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

More than 50% of the studies identified were concluded but it was possible to obtain information on 51 initiated/ongoing and nine planned studies, as can be seen in Table 4.

Table 4: Status of the studies/projects/activities

	Frequency (n)	Percent (%)
Concluded	**64**	**51,6**
Initiated/ongoing	51	41,1
Planned	9	7,3
Total	**124**	**100,0**

Narrowing the perspective and considering the status of the studies by European-defined region (Table 5), it can be concluded that the distribution is similar to the one reported above, with most of the studies being concluded or initiated/ongoing in all regions.

Table 5: Status of the studies/projects/activities by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Concluded	12 (42,9)	**28 (63,6)**	**25 (56,8)**	**8 (50,0)**	2 (28,6)
Initiated/Ongoing	**15 (53,6)**	14 (31,8)	14 (31,8)	**8 (50,0)**	**4 (57,1)**
Planned	1 (3,6)	2 (4,5)	5 (11,4)	0 (0,0)	1 (14,3)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Considering only the studies which reported to have a representative sample for the population or the geographical area under study (n=79), the pattern is maintained, although with a slight variation considering the division by type of concluded studies (Table 6).

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Table 6: Status of studies/projects/activities with representative samples by European-defined region

Representative sample (for the population or geographical area under study) (n=79*)	European-defined region**				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Planned	0 (0,0)	2 (8,0)	4 (12,1)	0 (0,0)	1 (50,0)
Initiated/Ongoing	**11 (73,3)**	**8 (32,0)**	12 (36,4)	**5 (55,6)**	1 (50,0)
Concluded					
≤ 10 years ago	3 (20,0)	7 (28,0)	**14 (42,4)**	3 (33,3)	0 (0,0)
> 10 years ago	0 (0,0)	2 (8,0)	0 (0,0)	0 (0,0)	0 (0,0)
Not indicating how long ago	1 (6,7)	6 (24,0)	3 (9,1)	1 (11,1)	0 (0,0)

* There are multinational projects so the n is not equal to the sum of the frequencies in the table

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Looking at the studies which reported a national level of implementation (n=57), the results are similar to the ones verified before (Table 7). In fact, for all European regions the studies are mainly either initiated/ongoing or concluded.

Table 7: Status of studies/projects/activities with nationally representative samples by European-defined region

Nationally representative sample (n=57)	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Planned	1 (7,1)	1 (4,8)	2 (11,1)	0 (0,0)	0 (0,0)
Initiated/Ongoing	**8 (57,1)**	**9 (42,9)**	5 (27,8)	**6 (54,5)**	**1 (50,0)**
Concluded					
≤ 10 years ago	3 (21,4)	5 (23,8)	**11 (61,1)**	5 (45,5)	**1 (50,0)**
> 10 years ago	1 (7,1)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)
Not indicating how long ago	1 (7,1)	6 (28,6)	0 (0,0)	0 (0,0)	0 (0,0)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

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Attending to the design of the studies, cross-sectional surveys or longitudinal studies were found across the European regions (Table 8).

Table 8: Study design by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Cross-sectional survey	10 (35,7)	**24 (54,5)**	**23 (52,3)**	**7 (43,8)**	**3 (42,9)**
Case-control	3 (10,7)	1 (2,3)	9 (20,5)	1 (6,3)	1 (14,3)
Longitudinal (cohort)	**12 (42,9)**	16 (36,4)	12 (27,3)	**7 (43,8)**	**3 (42,9)**
Cross-sectional and longitudinal	3 (10,7)	1 (2,3)	0 (0,0)	0 (0,0)	0 (0,0)
Pilot survey	0 (0,0)	1 (2,3)	0 (0,0)	0 (0,0)	0 (0,0)
Surveillance	0 (0,0)	1 (2,3)	0 (0,0)	1 (6,3)	0 (0,0)

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East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

The majority of the studies included a non-clinical population (Table 9).

Table 9: Type of target population by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
General population (non-clinical population)	**25 (89,3)**	**44 (100,0)**	**43 (97,7)**	**16 (100,0)**	**5 (71,4)**
Clinical population	3 (10,7)	0 (0,0)	1 (2,3)	0 (0,0)	2 (28,6)

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South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

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For each of the target groups and corresponding sample sizes, the mean, median and standard deviation are presented in Table 10.

Table 10: Target groups and sample size(s): Mean, median and standard deviation

	Mean	Median	Standard deviation
Children	1272	280	2935
Adolescents	559	150	1099
Mother-newborn pairs: Mother in the group	1590	296	3510
Mother-newborn pairs: Pairs in the group	1475	270	3392
Adults	2937	200	14096
Elderly	485	11	1340

An analysis by European-defined region shows that the identified studies included predominantly children and adults (Table 11), while the elderly are the most under-represented population sub-group.

Table 11: Target population by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Newborns	9 (32,1)	13 (29,5)	9 (20,5)	11 (68,8)	2 (28,6)
Children	16 (57,1)	**26 (59,1)**	**24 (54,5)**	**14 (87,5)**	4 (57,1)
Adolescents	7 (25,0)	13 (29,5)	6 (13,6)	4 (25,0)	0 (0,0)
Adults	**19 (67,9)**	18 (40,9)	**24 (54,5)**	9 (56,3)	**5 (71,4)**
Elderly	5 (17,9)	5 (11,4)	6 (13,6)	4 (25,0)	0 (0,0)

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Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Almost all studies/projects/activities (97,6%) were/will be approved by an ethics commission/entity (Table 12).

Table 12: Ethical approval

	Frequency (n)	Percent (%)
No	3	2,4
Yes	**121**	**97,6**
Total	**124**	**100,0**

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In case of face-to-face administered questionnaire or phone interview, nearly 70% of the studies/projects/activities collected / will collect data with qualified and trained personnel (Table 13).

Table 13: Information was/will be obtained by qualified and trained personnel (in case of face-to-face administered questionnaire or phone interview)

	Frequency (n)	Percent (%)
No	38	30,6
Yes	**86**	**69,4**
Total	**124**	**100,0**

- **EXISTING SAMPLES**

As depicted in Figure 4, cadmium was the most reported substance under study (of the nine prioritised substances), followed by phthalates, bisphenols and pre-/polyfluorinated compounds. To note that emerging chemicals and chromium VI were one of the least reported substances, and the anilin family was not included in any the studies.

Figure 4: Groups of substances under study

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In the North and East, the most studied substances were phthalates/DINCH, whereas in the West and South was cadmium Table 14.

Table 14: Groups of substances by European-defined region

|	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Phthalates/DINCH	**14 (56,0)**	19 (43,2)	7 (16,3)	**9 (56,3)**	**3 (60,0)**
Bisphenols	12 (48,0)	18 (40,9)	6 (14,0)	6 (37,5)	2 (40,0)
Per-/Polyfluorinated compounds	9 (36,0)	17 (38,6)	5 (11,6)	6 (37,5)	0 (0,0)
Flame Retardants	8 (32,0)	14 (31,8)	7 (16,3)	7 (43,8)	0 (0,0)
Cadmium	10 (40,0)	**23 (52,3)**	**24 (55,8)**	7 (43,8)	1 (20,0)
Chromium VI	0 (0,0)	2 (4,5)	2 (4,7)	0 (0,0)	1 (20,0)
PAHs	8 (32,0)	14 (31,8)	5 (11,6)	5 (31,3)	2 (40,0)
Anilin family: Anilines, MOCA	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)	0 (0,0)
Chemical mixtures	1 (4,0)	5 (11,4)	4 (9,3)	2 (12,5)	2 (40,0)
Emerging chemicals	2 (8,0)	2 (4,5)	0 (0,0)	2 (12,5)	0 (0,0)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
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South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: Sample base includes only studies with general population

Table 15 and Table 16 present the groups of substances by European region, age group and status (concluded or initiated/ongoing and planned, respectively) of the studies/projects/activities undertaken in the general population. The reported studies are mostly initiated/ongoing, the majority of them had children and adults as target population groups, phthalates and cadmium as the main substances under study, and they were mostly conducted in the Western region of Europe.

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Table 15: Groups of substances by European-defined region*, age groups and status of the study/project/activity

Age	Substance	Concluded North n	% Col.	% Total	West n	% Col.	% Total	South n	% Col.	% Total	East n	% Col.	% Total	Other n	% Col.	% Total	Initiated North n	% Col.	% Total	West n	% Col.	% Total	South n	% Col.	% Total	East n	% Col.	% Total	Other n	% Col.	% Total	Total n	%
Newborns	Phthalates/DINCH	1	2,6	0,2	2	2,0	0,4	-	-	-	-	-	-	-	-	-	4	4,5	0,8	5	5,6	0,9	1	2,9	0,2	5	6,9	0,9	1	25,0	0,2	19	3,6
	Bisphenols	1	2,6	0,2	3	3,0	0,6	1	1,9	0,2	2	4,9	0,4	-	-	-	4	4,5	0,8	4	4,5	0,8	2	5,7	0,4	3	4,2	0,6	-	-	-	20	3,8
	Per-/Polyfluorinated compounds	1	2,6	0,2	5	5,0	0,9	-	-	-	2	4,9	0,4	-	-	-	3	3,4	0,6	4	4,5	0,8	-	-	-	3	4,2	0,6	-	-	-	18	3,4
	Flame Retardants	-	-	-	2	2,0	0,4	1	1,9	0,2	3	7,3	0,6	-	-	-	3	3,4	0,6	4	4,5	0,8	1	2,9	0,2	4	5,6	0,8	-	-	-	18	3,4
	Cadmium	-	-	-	3	3,0	0,6	1	1,9	0,2	1	2,4	0,2	-	-	-	1	1,1	0,2	4	4,5	0,8	1	2,9	0,2	2	2,8	0,4	-	-	-	13	2,5
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2,2	0,4	-	-	-	-	-	-	-	-	-	2	0,4
	PAHs	-	-	-	1	1,0	0,2	-	-	-	-	-	-	-	-	-	2	2,3	0,4	2	2,2	0,4	1	2,9	0,2	4	5,6	0,8	-	-	-	10	1,9
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	1	1,9	0,2	-	-	-	-	-	-	1	1,1	0,2	1	1,1	0,2	1	2,9	0,2	2	2,8	0,4	-	-	-	6	1,1
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,1	0,2	1	1,1	0,2	-	-	-	2	2,8	0,4	-	-	-	4	0,8
Children	Phthalates/DINCH	5	12,8	0,9	7	7,0	1,3	3	5,7	0,6	3	7,3	0,6	-	-	-	6	6,8	1,1	6	6,7	1,1	2	5,7	0,4	5	6,9	0,9	1	25,0	0,2	**38**	**7,2**
	Bisphenols	3	7,7	0,6	7	7,0	1,3	2	3,8	0,4	3	7,3	0,6	-	-	-	6	6,8	1,1	5	5,6	0,9	3	8,6	0,6	3	4,2	0,6	-	-	-	**32**	**6,1**
	Per-/Polyfluorinated compounds	1	2,6	0,2	5	5,0	0,9	1	1,9	0,2	2	4,9	0,4	-	-	-	5	5,7	0,9	5	5,6	0,9	-	-	-	3	4,2	0,6	-	-	-	22	4,2
	Flame Retardants	1	2,6	0,2	3	3,0	0,6	1	1,9	0,2	3	7,3	0,6	-	-	-	5	5,7	0,9	4	4,5	0,8	2	5,7	0,4	4	5,6	0,8	-	-	-	23	4,4
	Cadmium	3	7,7	0,6	7	7,0	1,3	7	13,2	1,3	4	9,8	0,8	-	-	-	3	3,4	0,6	5	5,6	0,9	3	8,6	0,6	2	2,8	0,4	-	-	-	**34**	**6,5**
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2,2	0,4	1	2,9	0,2	-	-	-	-	-	-	3	0,6
	PAHs	1	2,6	0,2	3	3,0	0,6	1	1,9	0,2	1	2,4	0,2	-	-	-	3	3,4	0,6	4	4,5	0,8	1	2,9	0,2	4	5,6	0,8	-	-	-	18	3,4
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	3	5,7	0,6	-	-	-	-	-	-	1	1,1	0,2	2	2,2	0,4	1	2,9	0,2	2	2,8	0,4	1	25,0	0,2	10	1,9
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	2,3	0,4	1	1,1	0,2	-	-	-	2	2,8	0,4	-	-	-	5	0,9
Adole	Phthalates/DINCH	1	2,6	0,2	2	2,0	0,4	-	-	-	-	-	-	-	-	-	2	2,3	0,4	2	2,2	0,4	1	2,9	0,2	1	1,4	0,2	-	-	-	9	1,7
	Bisphenols	1	2,6	0,2	3	3,0	0,6	1	1,9	0,2	1	2,4	0,2	-	-	-	2	2,3	0,4	2	2,2	0,4	2	5,7	0,4	1	1,4	0,2	-	-	-	13	2,5

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Status of the study/project/activity

Age	Substance	Concluded North n	% Col.	% Total	West n	% Col.	% Total	South n	% Col.	% Total	East n	% Col.	% Total	Other n	% Col.	% Total	Init./Ong. North n	% Col.	% Total	West n	% Col.	% Total	South n	% Col.	% Total	East n	% Col.	% Total	Other n	% Col.	% Total	Total n	%
	Per-/Polyfluorinated compounds	1	2,6	0,2	1	1,0	0,2	-	-	-	-	-	-	-	-	-	2	2,3	0,4	2	2,2	0,4	-	-	-	1	1,4	0,2	-	-	-	7	1,3
	Flame Retardants	-	-	-	3	3,0	0,6	-	-	-	2	4,9	0,4	-	-	-	2	2,3	0,4	2	2,2	0,4	1	2,9	0,2	1	1,4	0,2	-	-	-	11	2,1
	Cadmium	-	-	-	5	5,0	0,9	1	1,9	0,2	-	-	-	-	-	-	-	-	-	2	2,2	0,4	1	2,9	0,2	-	-	-	-	-	-	9	1,7
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	2,9	0,2	-	-	-	1	0,2
	PAHs	-	-	-	5	5,0	0,9	-	-	-	-	-	-	-	-	-	1	1,1	0,2	3	3,4	0,6	-	-	-	1	1,4	0,2	-	-	-	10	1,9
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,1	0,2	1	1,1	0,2	1	2,9	0,2	1	1,4	0,2	-	-	-	4	0,8
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,1	0,2	-	-	-	-	-	-	1	1,4	0,2	-	-	-	2	0,4
Adults	Phthalates/DINCH	5	12,8	0,9	7	7,0	1,3	3	5,7	0,6	3	7,3	0,6	2	33,3	0,4	6	6,8	1,1	2	2,2	0,4	-	-	-	2	2,8	0,4	-	-	-	30	5,7
Adults	Bisphenols	3	7,7	0,6	5	5,0	0,9	2	3,8	0,4	2	4,9	0,4	2	33,3	0,4	5	5,7	0,9	1	1,1	0,2	1	2,9	0,2	1	1,4	0,2	-	-	-	22	4,2
Adults	Per-/Polyfluorinated compounds	1	2,6	0,2	4	4,0	0,8	2	3,8	0,4	-	-	-	-	-	-	6	6,8	1,1	2	2,2	0,4	1	2,9	0,2	2	2,8	0,4	-	-	-	18	3,4
Adults	Flame Retardants	3	7,7	0,6	2	2,0	0,4	3	5,7	0,6	2	4,9	0,4	-	-	-	3	3,4	0,6	2	2,2	0,4	-	-	-	2	2,8	0,4	-	-	-	17	3,2
Adults	Cadmium	3	7,7	0,6	7	7,0	1,3	9	17,0	1,7	3	7,3	0,6	-	-	-	4	4,5	0,8	1	1,1	0,2	2	5,7	0,4	1	1,4	0,2	-	-	-	30	5,7
Adults	Chromium VI	-	-	-	-	-	-	1	1,9	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0,2
Adults	PAHs	1	2,6	0,2	2	2,0	0,4	2	3,8	0,4	1	2,4	0,2	1	16,7	0,2	1	1,1	0,2	1	1,1	0,2	1	2,9	0,2	1	1,4	0,2	-	-	-	11	2,1
Adults	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Chemical mixtures	-	-	-	1	1,0	0,2	3	5,7	0,6	-	-	-	1	16,7	0,2	1	1,1	0,2	1	1,1	0,2	1	2,9	0,2	1	1,4	0,2	1	25,0	0,2	10	1,9
Adults	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,1	0,2	-	-	-	-	-	-	1	1,4	0,2	-	-	-	2	0,4
Elderly	Phthalates/DINCH	1	2,6	0,2	1	1,0	0,2	-	-	-	-	-	-	-	-	-	1	1,1	0,2	-	-	-	-	-	-	1	1,4	0,2	-	-	-	4	0,8
Elderly	Bisphenols	1	2,6	0,2	2	2,0	0,4	1	1,9	0,2	1	2,4	0,2	-	-	-	-	-	-	1	2,9	0,2	-	-	-	-	-	-	-	-	-	6	1,1
Elderly	Per-/Polyfluorinated compounds	1	2,6	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,1	0,2	-	-	-	1	1,4	0,2	-	-	-	3	0,6
Elderly	Flame Retardants	-	-	-	1	1,0	0,2	-	-	-	2	4,9	0,4	-	-	-	-	-	-	1	1,1	0,2	-	-	-	1	1,4	0,2	-	-	-	5	0,9
Elderly	Cadmium	-	-	-	1	1,0	0,2	1	1,9	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1,4	0,2	-	-	-	3	0,6
Elderly	Chromium VI	-	-	-	-	-	-	1	1,9	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0,2
Elderly	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	Status of the study/project/activity																														
	Concluded															**Initiated/Ongoing**															**Total**	
	North			West			South			East			Other			North			West			South			East			Other				
	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical mixtures	-	-	-	-	-	-	1	1,9	0,2	-	-	-	-	-	-	-	-	-	1	1,1	0,2	1	2,9	0,2	-	-	-	-	-	-	3	0,6
Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	39	100	7,4	100	100	19,0	53	100	10,1	41	100	7,8	6	100	1,1	88	100	16,7	89	100	16,9	35	100	6,6	72	100	13,7	4	100	0,8	527	100

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: Sample base includes only studies with general population

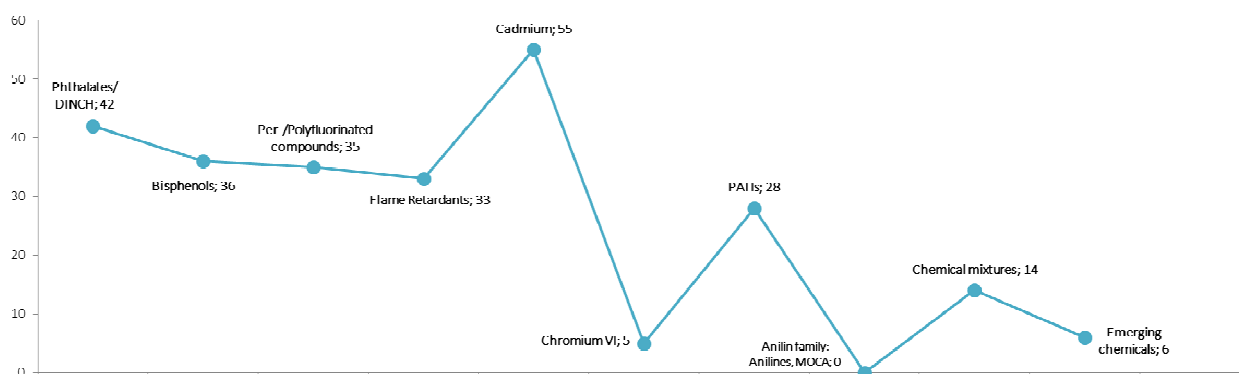| D 7.1 - Report on ongoing activities and existing data and data gaps for the 1st prioritised substances including a list of metadata that can be uploaded in IPCheM	Security: Public
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Table 16: Planned studies according to age groups, substances under study and European-defined region*

		Status of the study/project/activity																
		Planned															
		North			West			South			East			Other			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
Newborns	Phthalates/DINCH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Bisphenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Per-/Polyfluorinated compounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Flame Retardants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cadmium	-	-	-	-	-	-	1	20,0	0,2	-	-	-	-	-	-	1	5,3
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Children	Phthalates/DINCH	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Bisphenols	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Per-/Polyfluorinated compounds	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Flame Retardants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Cadmium	-	-	-	-	-	-	**3**	**60,0**	**0,6**	-	-	-	-	-	-	**3**	**15,8**
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Emerging chemicals	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
Adolescents	Phthalates/DINCH	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Bisphenols	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Per-/Polyfluorinated compounds	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Flame Retardants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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		Status of the study/project/activity																	
		Planned																	
		North			West			South			East			Other			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
	Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
	Emerging chemicals	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
Adults	Phthalates/DINCH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Bisphenols	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Per-/Polyfluorinated compounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Flame Retardants	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Cadmium	-	-	-	-	-	-	1	20,0	0,2	-	-	-	1	33,3	0,2	2	10,5
Adults	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	1	33,3	0,2	1	5,3
Adults	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	1	33,3	0,2	1	5,3
Adults	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Adults	Chemical mixtures	-	-	-	1	9,1	0,2	-	-	-	-	-	-	-	-	-	1	5,3
Adults	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
		0	0,0	0,0	11	100	2,1	5	100	0,9	0	0,0	0,0	3	100	0,6	19	100

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK

West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland

South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain

East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia

Other: Israel

Note 1: The data present in this table refer to multiple-choice questions. Therefore, the sum of reported studies may differ from the total of answers given to the questionnaire (n=124).

Note 2: Sample base includes only studies with general population

Note 3: No cases for Elderly

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The same information is presented in Table 17 but only with studies/projects/activities having a national representativeness level. The majority of the studies involved children and newborns. In studies with children, the most analysed substances were cadmium, flame retardants, bisphenols and phthalates. For those studies with newborns, the main substances under study were flame retardants. In both cases, these studies were mostly conducted in Western Europe.

Table 17: Groups of substances by European-defined region, age groups in national representative samples (n=32)

		European-defined region*															
		North			West			South			East			Other			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
Newborns	Phthalates/DINCH	2	8,7	1,2	**4**	**5,7**	**2,5**	1	2,5	0,6	1	3,6	0,6	-	-	-	8	4,9
	Bisphenols	2	8,7	1,2	3	4,3	1,8	2	5,0	1,2	1	3,6	0,6	-	-	-	8	4,9
	Per-/Polyfluorinated compounds	1	4,3	0,6	3	4,3	1,8	-	-	-	1	3,6	0,6	-	-	-	5	3,1
	Flame Retardants	1	4,3	0,6	**4**	**5,7**	**2,5**	2	5,0	1,2	4	14,3	2,5	-	-	-	**11**	**6,7**
	Cadmium	1	4,3	0,6	**4**	**5,7**	**2,5**	1	2,5	0,6	2	7,1	1,2	-	-	-	8	4,9
	Chromium VI	-	-	-	2	2,9	1,2	-	-	-	-	-	-	-	-	-	2	1,2
	PAHs	1	4,3	0,6	1	1,4	0,6	1	2,5	0,6	2	7,1	1,2	-	-	-	5	3,1
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	2	5,0	1,2	-	-	-	-	-	-	2	1,2
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Children	Phthalates/DINCH	3	13,0	1,8	**7**	**10,0**	**4,3**	1	2,5	0,6	1	3,6	0,6	-	-	-	**12**	**7,4**
	Bisphenols	3	13,0	1,8	**6**	**8,6**	**3,7**	2	5,0	1,2	1	3,6	0,6	-	-	-	**12**	**7,4**
	Per-/Polyfluorinated compounds	2	8,7	1,2	**5**	**7,1**	**3,1**	1	2,5	0,6	1	3,6	0,6	-	-	-	9	5,5
	Flame Retardants	2	8,7	1,2	**4**	**5,7**	**2,5**	2	5,0	1,2	4	14,3	2,5	-	-	-	**12**	**7,4**
	Cadmium	2	8,7	1,2	**6**	**8,6**	**3,7**	3	7,5	1,8	2	7,1	1,2	-	-	-	**13**	**8,0**
	Chromium VI	-	-	-	2	2,9	1,2	-	-	-	-	-	-	-	-	-	2	1,2
	PAHs	2	8,7	1,2	2	2,9	1,2	1	2,5	0,6	2	7,1	1,2	-	-	-	7	4,3
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	1	1,4	0,6	4	10,0	2,5	-	-	-	1	50,0	0,6	6	3,7
	Emerging chemicals	1	4,3	0,6	1	1,4	0,6	-	-	-	-	-	-	-	-	-	2	1,2
Adolescents	Phthalates/DINCH	-	-	-	2	2,9	1,2	-	-	-	-	-	-	-	-	-	2	1,2

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		European-defined region*															
		North			West			South			East			Other			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
	Bisphenols	-	-	-	2	2,9	1,2	1	2,5	0,6	-	-	-	-	-	-	3	1,8
	Per-/Polyfluorinated compounds	-	-	-	2	2,9	1,2	-	-	-	-	-	-	-	-	-	2	1,2
	Flame Retardants	-	-	-	-	-	-	-	-	-	2	7,1	1,2	-	-	-	2	1,2
	Cadmium	-	-	-	1	1,4	0,6	1	2,5	0,6	-	-	-	-	-	-	2	1,2
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	1	1,4	0,6	-	-	-	-	-	-	-	-	-	1	0,6
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	1	1,4	0,6	1	2,5	0,6	-	-	-	-	-	-	2	1,2
	Emerging chemicals	-	-	-	1	1,4	0,6	-	-	-	-	-	-	-	-	-	1	0,6
Adults	Phthalates/DINCH	-	-	-	1	1,4	0,6	-	-	-	-	-	-	-	-	-	1	0,6
	Bisphenols	-	-	-	1	1,4	0,6	1	2,5	0,6	-	-	-	-	-	-	2	1,2
	Per-/Polyfluorinated compounds	-	-	-	-	-	-	2	5,0	1,2	-	-	-	-	-	-	2	1,2
	Flame Retardants	-	-	-	-	-	-	2	5,0	1,2	2	7,1	1,2	-	-	-	4	2,5
	Cadmium	-	-	-	1	1,4	0,6	2	5,0	1,2	-	-	-	-	-	-	3	1,8
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chemical mixtures	-	-	-	-	-	-	4	10,0	2,5	-	-	-	1	50,0	0,6	5	3,1
	Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Elderly	Phthalates/DINCH	-	-	-	1	1,4	0,6	-	-	-	-	-	-	-	-	-	1	0,6
	Bisphenols	-	-	-	1	1,4	0,6	1	2,5	0,6	-	-	-	-	-	-	2	1,2
	Per-/Polyfluorinated compounds	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Flame Retardants	-	-	-	-	-	-	-	-	-	2	7,1	1,2	-	-	-	2	1,2
	Cadmium	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Chromium VI	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	PAHs	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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	European-defined region*																
	North			West			South			East			Other			Total	
	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
Anilin family: Anilines, MOCA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chemical mixtures	-	-	-	-	-	-	2	5,0	1,2	-	-	-	-	-	-	2	1,2
Emerging chemicals	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	23	100	14,1	70	100	42,9	40	100	24,5	28	100	17,2	2	100	1,2	163	100

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: Sample base includes only studies with general population

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As shown in Figure 5, blood was the most collected biological sample, followed by urine (spot sample – first morning) and serum. On the other hand, only one of the studies collected cell lines and fat/adipose tissue. Other collected samples included (among others): amniotic fluid, faeces, brain, kidney, liver, RNA and semen.
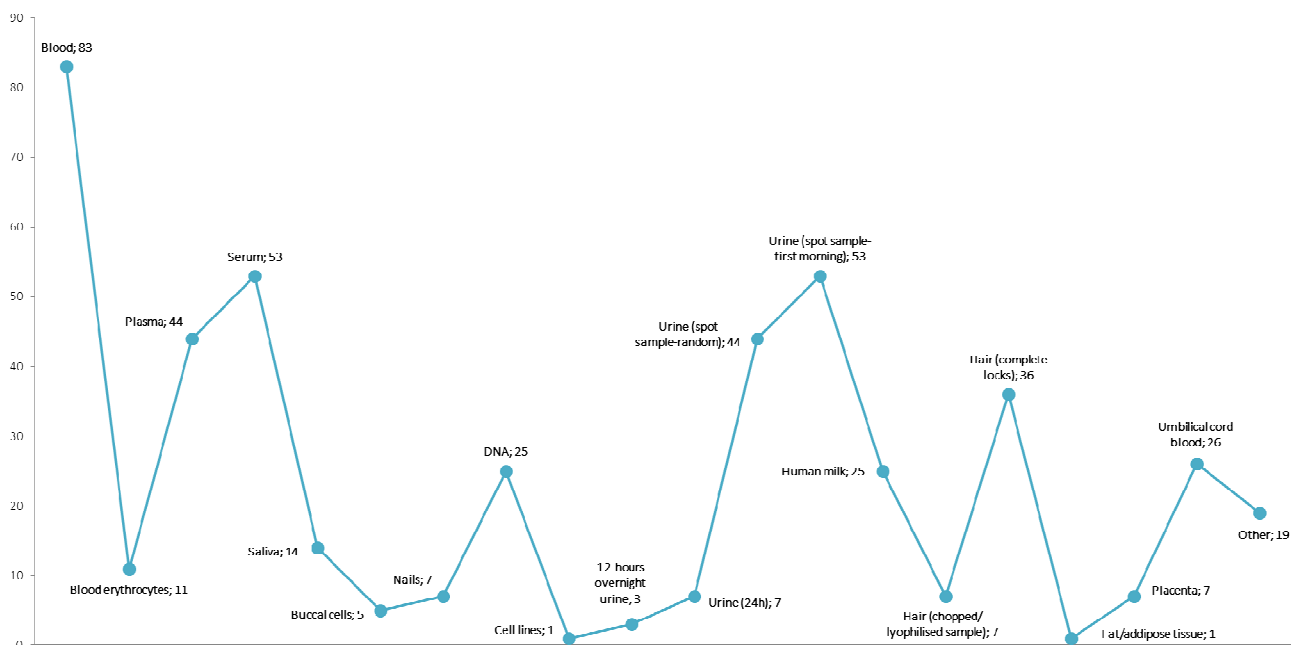

Figure 5: Biological samples collected

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The characterisation of the biological sample did not present geographical variability (Table 18).

Table 18: Biological samples collected by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
None	-	-	-	-	-
Blood	**18 (64,3)**	**29 (65,9)**	**29 (65,9)**	**10 (62,5)**	2 (28,6)
Blood erythrocytes	3 (10,7)	4 (9,1)	3 (6,8)	1 (6,3)	1 (14,3)
Plasma	14 (50,0)	15 (34,1)	10 (22,7)	5 (31,3)	2 (28,6)
Serum	14 (50,0)	17 (38,6)	16 (36,4)	7 (43,8)	2 (28,6)
Saliva	7 (25,0)	2 (4,5)	6 (13,6)	3 (18,8)	-
Buccal cells	-	3 (6,8)	1 (2,3)	1 (6,3)	-
Nails	1 (3,6)	2 (4,5)	4 (9,1)	-	-
DNA	11 (39,3)	7 (15,9)	4 (9,1)	4 (25,0)	-
Cells lines	-	1 (2,3)	-	-	-
12-hours overnight urine	3 (10,7)	-	-	-	-
Urine (24h)	3 (10,7)	1 (2,3)	3 (6,8)	-	-
Urine (spot sample-random)	11 (39,3)	16 (36,4)	9 (20,5)	4 (25,0)	7 (100,0)
Urine (spot sample-first morning)	15 (53,6)	20 (45,5)	21 (47,7)	11 (68,8)	-
Human milk	4 (14,3)	7 (15,9)	7 (15,9)	6 (37,5)	1 (14,3)
Hair (chopped/lyophilised sample)	1 (3,6)	4 (9,1)	3 (6,8)	2 (12,5)	-
Hair (complete locks)	8 (28,6)	13 (29,5)	21 (47,7)	4 (25,0)	-
Fat/adipose tissue	1 (3,6)	-	-	-	-
Placenta	1 (3,6)	3 (6,8)	1 (2,3)	2 (12,5)	-
Umbilical cord blood	5 (17,9)	12 (27,3)	6 (13,6)	6 (37,5)	1 (14,3)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

The same pattern is presented for the distribution of the biological samples by groups of substances (Table 19).

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Table 19: Biological samples by groups of substances

	Phthalates/ DINCH n (%)	Bisphenols n (%)	Per-/Polyfluorin ated compounds n (%)	Flame Retardants n (%)	Cadmium n (%)	Chromium VI n (%)	PAHs n (%)	Chemical mixtures n (%)	Emerging chemicals n (%)
Blood	**32 (76,2)**	**27 (95,0)**	**28 (80,0)**	**26 (78,8)**	**47 (85,5)**	**5 (100,0)**	**21 (75,0)**	**9 (64,3)**	**5 (83,3)**
Blood erythrocytes	4 (9,5)	4 (11,1)	4 (11,4)	3 (9,1)	8 (14,5)	3 (60,0)	2 (7,1)	1 (7,1)	-
Plasma	19 (45,2)	18 (50,0)	16 (45,7)	16 (48,5)	24 (43,6)	4 (80,0)	15 (53,6)	4 (28,6)	4 (66,7)
Serum	23 (54,8)	22 (61,1)	23 (65,7)	19 (57,6)	26 (47,3)	3 (60,0)	13 (46,4)	5 (35,7)	3 (50,0)
Saliva	5 (11,9)	4 (11,1)	3 (8,6)	5 (15,2)	6 (10,9)	-	4 (14,3)	3 (21,4)	2 (33,3)
Buccal cells	2 (4,8)	2 (5,6)	2 (5,7)	2 (6,1)	2 (3,6)	-	2 (7,1)	1 (7,1)	2 (33,3)
Nails	-	-	1 (2,9)	1 (3,0)	6 (10,9)	-	2 (7,1)	-	-
DNA	14 (33,3)	12 (33,3)	13 (37,1)	8 (24,2)	10 (18,2)	2 (40,0)	6 (21,4)	3 (21,4)	2 (33,3)
Cells lines	1 (2,4)	1 (2,8)	1 (2,9)	-	-	-	-	-	-
12-hours overnight urine	1 (2,4)	1 (2,8)	1 (2,9)	-	1 (1,8)	-	-	-	-
Urine (24h)	3 (7,1)	4 (11,1)	2 (5,7)	2 (6,1)	2 (3,6)	-	1 (3,6)	1 (7,1)	-
Urine (spot sample-random)	23 (54,8)	16 (44,4)	11 (31,4)	10 (30,3)	20 (36,4)	4 (80,0)	12 (42,9)	6 (42,9)	2 (33,3)
Urine (spot sample-first morning)	22 (52,4)	19 (52,8)	18 (51,4)	17 (51,5)	33 (60,0)	2 (40,0)	18 (64,3)	5 (35,7)	4 (66,7)
Human milk	10 (23,8)	8 (22,2)	11 (31,4)	12 (36,4)	9 (16,4)	2 (40,0)	2 (7,1)	2 (14,3)	1 (16,7)
Hair (chopped/ lyophilised sample)	4 (9,5)	3 (8,3)	3 (8,6)	4 (12,1)	6 (10,9)	2 (40,0)	1 (3,6)	-	-
Hair (complete locks)	14 (33,3)	12 (33,3)	10 (28,6)	11 (33,3)	26 (47,3)	1 (20,0)	7 (25,0)	1 (7,1)	-

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	Phthalates/ DINCH n (%)	Bisphenols n (%)	Per- /Polyfluorin ated compounds n (%)	Flame Retardants n (%)	Cadmium n (%)	Chromium VI n (%)	PAHs n (%)	Chemical mixtures n (%)	Emerging chemicals n (%)
Fat/adipose tissue	-	-	-	-	1 (1,8)	-	-	-	-
Placenta	4 (9,5)	2 (5,6)	4 (11,4)	3 (9,1)	3 (5,5)	-	1 (3,6)	1 (7,1)	-
Umbilical cord blood	14 (33,3)	11 (30,6)	15 (42,9)	11 (33,3)	12 (21,8)	2 (40,0)	5 (17,9)	3 (21,4)	1 (16,7)

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: No cases for 'None' biological samples neither for substances from Anilin family

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More than half of the studies have biobanked samples (Table 20). The distribution of biobanked samples by European-defined region is presented in Table 21 and by groups of substances in Table 22.

Table 20: Existence of biobanked samples

	Frequency (n)	Percent (%)
No	46	37,1
Yes	**78**	**62,9**
Total	**124**	**100,0**

Table 21: Biobanked samples by European-defined region

	European-defined regions*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Biobanked samples	20 (71,4)	30 (68,2)	23 (52,3)	11 (68,8)	5 (71,4)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Table 22: Biobanked samples by groups of substances

	Phthalates /DINCH n (%)	Bisphenols n (%)	Per- /Polyfluorinated compounds n (%)	Flame Retardants n (%)	Cadmium n (%)	Cr VI n (%)	PAHs n (%)	Chemical mixtures n (%)	Emerging chemicals n (%)
Biobanked samples	32 (76,2)	23 (63,9)	25 (71,4)	22 (66,7)	40 (72,7)	4 (80,0)	22 (78,6)	8 (57,1)	5 (83,3)

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: No cases for substances from Anilin family

A more detailed analysis of two of the most represented biobanked samples is presented below. Table 23 depicts the number of studies/projects/activities (general population) with urine samples (12-hours overnight urine, urine 24h, spot sample-random and spot sample-first morning) by group of substances, region and age group. Table 24 shows the same information for blood samples (blood, blood erythrocytes, plasma and serum). In both cases, the largest number of studies were from Western and Northern regions. Concerning the target population and substances under study, the focus is put on children and phthalates, respectively.

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Table 23: Urine samples by groups of substances, European-defined region* and age groups

Region	Age	Phthalates/DINCH			Bisphenols			Per-/Polyfluorinated compounds			Flame Retardants			Cadmium			Chromium VI			PAHs			Chemical mixtures			Emerging chemicals			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
North	Newborns	5	5,0	1,0	5	5,6	1,0	4	7,3	0,8	3	5,4	0,6	1	1,2	0,2	-	-	-	2	4,0	0,4	1	3,0	0,2	1	7,7	0,2	22	4,5
	Children	11	11,0	2,3	9	10,1	1,8	6	10,9	1,2	6	10,7	1,2	6	7,1	1,2	-	-	-	4	8,0	0,8	1	3,0	0,2	2	15,4	0,4	45	9,2
	Adolescents	3	3,0	0,6	3	3,4	0,6	3	5,5	0,6	2	3,6	0,4	-	-	-	-	-	-	1	2,0	0,2	1	3,0	0,2	1	7,7	0,2	14	2,9
	Adults	11	11,0	2,3	8	9,0	1,6	7	12,7	1,4	4	7,1	0,8	7	8,2	1,4	-	-	-	2	4,0	0,4	1	3,0	0,2	1	7,7	0,2	41	8,4
	Elderly	1	1,0	0,2	1	1,1	0,2	1	1,8	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0,6
West	Newborns	6	6,0	1,2	5	5,6	1,0	5	9,1	1,0	4	7,1	0,8	5	5,9	1,0	2	28,6	0,4	3	6,0	0,6	1	3,0	0,2	-	-	-	31	6,4
	Children	13	13,0	2,7	11	12,4	2,3	7	12,7	1,4	5	8,9	1,0	10	11,8	2,0	2	28,6	0,4	7	14,0	1,4	3	9,1	0,6	1	7,7	0,2	59	12,1
	Adolescents	5	5,0	1,0	6	6,7	1,2	4	7,3	0,8	5	8,9	1,0	7	8,2	1,4	-	-	-	8	16,0	1,6	2	6,1	0,4	1	7,7	0,2	38	7,8
	Adults	9	9,0	1,8	6	6,7	1,2	5	9,1	1,0	3	5,4	0,6	8	9,4	1,6	-	-	-	3	6,0	0,6	2	6,1	0,4	-	-	-	36	7,4
	Elderly	2	2,0	0,4	2	2,2	0,4	1	1,8	0,2	2	3,6	0,4	1	1,2	0,2	-	-	-	-	-	-	1	3,0	0,2	-	-	-	9	1,8
South	Newborns	1	1,0	0,2	3	3,4	0,6	-	-	-	2	3,6	0,4	2	2,4	0,4	-	-	-	1	2,0	0,2	2	6,1	0,4	-	-	-	11	2,3
	Children	5	5,0	1,0	5	5,6	1,0	-	-	-	3	5,4	0,6	12	14,1	2,5	1	14,3	0,2	2	4,0	0,4	3	9,1	0,6	-	-	-	31	6,4
	Adolescents	1	1,0	0,2	3	3,4	0,6	-	-	-	1	1,8	0,2	1	1,2	0,2	1	14,3	0,2	-	-	-	1	3,0	0,2	-	-	-	8	1,6
	Adults	3	3,0	0,6	3	3,4	0,6	-	-	-	2	3,6	0,4	10	11,8	2,0	-	-	-	3	6,0	0,6	3	9,1	0,6	-	-	-	24	4,9
	Elderly	-	-	-	2	2,2	0,4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	6,1	0,4	-	-	-	4	0,8
East	Newborns	5	5,0	1,0	4	4,5	0,8	4	7,3	0,8	5	8,9	1,0	3	3,5	0,6	-	-	-	4	8,0	0,8	2	6,1	0,4	2	15,4	0,4	29	5,9
	Children	8	8,0	1,6	5	5,6	1,0	4	7,3	0,8	5	8,9	1,0	6	7,1	1,2	-	-	-	5	10,0	1,0	2	6,1	0,4	2	15,4	0,4	37	7,6
	Adolescents	1	1,0	0,2	2	2,2	0,4	1	1,8	0,2	1	1,8	0,2	-	-	-	-	-	-	1	2,0	0,2	1	3,0	0,2	1	7,7	0,2	8	1,6
	Adults	5	5,0	1,0	3	3,4	0,6	2	3,6	0,4	2	3,6	0,4	4	4,7	0,8	-	-	-	2	4,0	0,4	1	3,0	0,2	1	7,7	0,2	20	4,1
	Elderly	1	1,0	0,2	1	1,1	0,2	1	1,8	0,2	1	1,8	0,2	1	1,2	0,2	-	-	-	-	-	-	-	-	-	-	-	-	5	1,0
Other	Newborns	1	1,0	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	0,2
	Children	1	1,0	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	3,0	0,2	-	-	-	2	0,4
	Adults	2	2,0	0,4	2	2,2	0,4	-	-	-	-	-	-	1	1,2	0,2	1	14,3	0,2	2	4,0	0,4	2	6,1	0,4	-	-	-	10	2,0
		100	100	20,5	89	100	18,2	55	100	11,3	56	100	11,5	85	100	17,4	7	100	1,4	50	100	10,2	33	100	6,8	13	100	2,7	488	100

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* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: Sample base includes only studies with general population
Note 3: No cases for Adolescents and Elderly from Other European-defined region neither for substances from Anilin family

Table 24: Blood samples by groups of substances, European-defined region* and age groups

		Phthalates/DINCH			Bisphenols			Per-/Polyfluorinated compounds			Flame Retardants			Cadmium			Chromium VI			PAHs			Chemical mixtures			Emerging chemicals			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
North	Newborns	5	6,9	1,1	5	6,2	1,1	4	6,3	0,9	3	4,7	0,7	1	1,5	0,2	-	-	-	2	5,4	0,5	1	3,6	0,2	1	6,7	0,2	22	5,1
	Children	8	11,1	1,8	8	9,9	1,8	6	9,4	1,4	6	9,4	1,4	3	4,6	0,7	-	-	-	3	8,1	0,7	1	3,6	0,2	2	13,3	0,5	37	8,5
	Adolescents	3	4,2	0,7	3	3,7	0,7	3	4,7	0,7	2	3,1	0,5	-	-	-	-	-	-	1	2,7	0,2	1	3,6	0,2	1	6,7	0,2	14	3,2
	Adults	8	11,1	1,8	7	8,6	1,6	7	10,9	1,6	5	7,8	1,1	4	6,2	0,9	-	-	-	1	2,7	0,2	1	3,6	0,2	1	6,7	0,2	34	7,8
	Elderly	1	1,4	0,2	1	1,2	0,2	1	1,6	0,2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	0,7
West	Newborns	7	9,7	1,6	7	8,6	1,6	7	10,9	1,6	5	7,8	1,1	6	9,2	1,4	2	22,2	0,5	3	8,1	0,7	1	3,6	0,2	1	6,7	0,2	39	9,0
	Children	**11**	**15,3**	**2,5**	**11**	**13,6**	**2,5**	9	14,1	2,1	6	9,4	1,4	8	12,3	1,8	2	22,2	0,5	4	10,8	0,9	2	7,1	0,5	2	13,3	0,5	**55**	**12,6**
	Adolescents	5	6,9	1,1	5	6,2	1,1	4	6,3	0,9	5	7,8	1,1	7	10,8	1,6	-	-	-	7	18,9	1,6	2	7,1	0,5	1	6,7	0,2	36	8,3
	Adults	6	8,3	1,4	4	4,9	0,9	4	6,3	0,9	3	4,7	0,7	5	7,7	1,1	-	-	-	1	2,7	0,2	2	7,1	0,5	-	-	-	25	5,7
	Elderly	2	2,8	0,5	1	1,2	0,2	1	1,6	0,2	1	1,6	0,2	1	1,5	0,2	-	-	-	-	-	-	1	3,6	0,2	-	-	-	7	1,6
South	Newborns	1	1,4	0,2	3	3,7	0,7	-	-	-	2	3,1	0,5	2	3,1	0,5	-	-	-	1	2,7	0,2	2	7,1	0,5	-	-	-	11	2,5
	Children	2	2,8	0,5	4	4,9	0,9	1	1,6	0,2	3	4,7	0,7	7	10,8	1,6	1	11,1	0,2	1	2,7	0,2	3	10,7	0,7	-	-	-	22	5,1
	Adolescents	1	1,4	0,2	3	3,7	0,7	-	-	-	1	1,6	0,2	2	3,1	0,5	1	11,1	0,2	-	-	-	1	3,6	0,2	-	-	-	9	2,1
	Adults	-	-	-	2	2,5	0,5	3	4,7	0,7	3	4,7	0,7	9	13,8	2,1	1	11,1	0,2	2	5,4	0,5	3	10,7	0,7	-	-	-	23	5,3
	Elderly	-	-	-	2	2,5	0,5	-	-	-	-	-	-	1	1,5	0,2	1	11,1	0,2	-	-	-	1	3,6	0,2	-	-	-	5	1,1
East	Newborns	4	5,6	0,9	5	6,2	1,1	5	7,8	1,1	6	9,4	1,4	3	4,6	0,7	-	-	-	4	10,8	0,9	2	7,1	0,5	2	13,3	0,5	31	7,1

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		Phthalates/DINCH			Bisphenols			Per-/Polyfluorinated compounds			Flame Retardants			Cadmium			Chromium VI			PAHs			Chemical mixtures			Emerging chemicals			Total	
		n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	% Col.	% Total	n	%
	Children	4	5,6	0,9	5	6,2	1,1	5	7,8	1,1	6	9,4	1,4	3	4,6	0,7	-	-	-	4	10,8	0,9	2	7,1	0,5	2	13,3	0,5	31	7,1
	Adolescents	1	1,4	0,2	2	2,5	0,5	1	1,6	0,2	2	3,1	0,5	-	-	-	-	-	-	1	2,7	0,2	1	3,6	0,2	1	6,7	0,2	9	2,1
	Adults	2	2,8	0,5	2	2,5	0,5	2	3,1	0,5	3	4,7	0,7	1	1,5	0,2	-	-	-	1	2,7	0,2	1	3,6	0,2	1	6,7	0,2	13	3,0
	Elderly	1	1,4	0,2	1	1,2	0,2	1	1,6	0,2	2	3,1	0,5	1	1,5	0,2	-	-	-	-	-	-	-	-	-	-	-	-	6	1,4
Other	Adults	-	-	-	-	-	-	-	-	-	-	-	-	1	1,5	0,2	1	11,1	0,2	1	2,7	0,2	-	-	-	-	-	-	3	0,7
		72	100	16,6	81	100	18,6	64	100	14,7	64	100	14,7	65	100	14,9	9	100	2,1	37	100	8,5	28	100	6,4	15	100	3,4	435	100

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note 1: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).
Note 2: Sample base includes only studies with general population
Note 3: No cases for Newborns, Children, Adolescents and Elderly from Other European-defined region neither for substances from Anilin family

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Nearly 50% of the studies allow access of the samples they have stored, with 26,6% for consultation and 21,0% for access and use of other researchers/organizations (Table 25).

Table 25: Access and use of biobanked samples

	Frequency (n)	Percent (%)
No access at all	19	15,3
Access (only for consultation) for other researchers/organisations	**33**	**26,6**
Access and use for other researchers/ organisations	**26**	**21,0**
Not applicable	46	37,1
Total	**124**	**100,0**

Several indicators and parameters were collected by the reported studies. Table 26 to Table 28 summarise the results of the data collected for clinical parameters, anthropometric data, other biomarkers or physiological indicators, outdoor pollution and occupational exposure by European-defined region.

Table 26: Clinical parameters, anthropometric data and other biomarkers or physiological indicators by European-defined-region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Respiratory/lung parameters	6 (21,4)	17 (38,6)	6 (13,6)	4 (25,0)	0 (0,0)
Reproductive and/or development system parameters	9 (32,1)	18 (40,9)	6 (13,6)	5 (31,3)	3 (42,9)
Neurological parameters	3 (10,7)	14 (31,8)	10 (22,7)	2 (12,5)	0 (0,0)
Anthropometric data (objectively measured)	17 (60,7)	37 (84,1)	25 (56,8)	13 (81,3)	6 (85,7)
Other biomarkers or physiological indicators	20 (71,4)	21 (47,7)	9 (20,5)	6 (37,5)	3 (42,9)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

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Table 27: Collected data about outdoor pollution by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Data about outdoor pollution	7 (25,0)	23 (52,3)	18 (40,9)	5 (31,3)	1 (14,3)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

Table 28: Collected data about occupational exposure by European-defined region

	European-defined region*				
	North n (%)	West n (%)	South n (%)	East n (%)	Other n (%)
Data about occupational exposure	7 (25,0)	20 (45,5)	17 (38,6)	7 (43,8)	2 (28,6)

* North: Denmark, Estonia. Finland, Iceland, Ireland, Latvia, Lithuania, Norway, Sweden, UK
West: Austria, Belgium, France, Germany, Luxembourg, The Netherlands, Switzerland
South: Croatia, Cyprus, Greece, Italy, Malta, Portugal, Slovenia, Spain
East: Bulgaria, Czech Republic, Hungary, Poland, Romania, Slovakia
Other: Israel

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

For the vast majority of the studies, non-biological data is partially accessible to the HBM4EU use (Table 29).

Table 29: Data access to non-biological data

	Frequency (n)	Percent (%)
No access is possible	30	24,2
Partial access to database	**80**	**64,5**
Access to total database	14	11,3
Total	**124**	**100,0**

Almost 50% of the studies declare free availability to the questionnaire used for data collection, for HBM4EU partners and approximately 35% provide free access to any researcher (Table 30).

Table 30: Possibility of sharing the questionnaire used for data collection

	Frequency (n)	Percent (%)
No	21	16,9
Yes, it is available to any researcher	43	34,7
Yes, only to HBM4EU partners	**60**	**48,4**
Total	**124**	**100,0**

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4.1.1 Questionnaire on occupational exposure

Concerning the occupational exposure questionnaire, some of the main results are presented below. The answers were collected in the same period as the main questionnaire (March 28 and June 8, 2017), and 33 questionnaires were filled in.

It should be noted that descriptive analysis of these data were performed by FMUL but a deeper analysis will be performed by DPH, UKF and FIOH, the institutions responsible for the development of the questionnaire. The complete database will also be available on the wiki as well as the statistical analysis performed by FMUL.

Around 43% of the institutions answering the occupational exposure questionnaire were from Finland, followed by 12,1% from Belgium and 6,1% from Latvia and Portugal (Table 31).

Table 31: Nationality of the respondent Institution/Organisation

	Frequency (n)	Percent (%)
Belgium	**4**	**12,1**
Croatia	1	3,0
Dutch	1	3,0
Finnish	**14**	**42,4**
Italian	1	3,0
Latvia	**2**	**6,1**
Lithuanian	1	3,0
Portuguese	**2**	**6,1**
Slovak	1	3,0
Spanish	1	3,0
Switzerland	1	3,0
Total	**33**	**100,0**

Most of the institutions undertaking studies on occupational exposure are public or universities (Table 32).

Table 32 - Type of the Institution/Organisation

	Frequency (n)	Percent (%)
Public	**19**	**57,6**
Private	2	6,1
University	9	27,3
Public & University	1	3,0
Other	1	3,0
No answer	1	3,0
Total	**33**	**100,0**

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In terms of study design, most of the studies on occupational exposure were cross-sectional (Table 33).

Table 33: Study design

	Frequency (n)	Percent (%)
Cross-sectional study	28	84,8
Longitudinal / Cohort study	5	15,2
Total	**33**	**100,0**

Nearly 30% of the studies covered only one year, but almost other 30% covered two, three and nine years (Table 34).

Table 34: Number of years covered

	Frequency (n)	Percent (%)
1	**9**	**27,3**
2	**3**	**9,1**
3	**3**	**9,1**
4	1	3,0
5	1	3,0
7	1	3,0
9	**3**	**9,1**
14	2	6,1
16	1	3,0
17	1	3,0
18	1	3,0
19	1	3,0
23	1	3,0
No answer	5	15,2
Total	**33**	**100,0**

It was sought to understand how the collected data from the reported studies could be used for the purpose of the HBM4EU initiative. From Table 35 it can be seen that most of the data are available (78,8%).

Table 35: Data use for the purpose of the HBM4EU initiative

	Frequency (n)	Percent (%)
No	0	0,0
Yes	**26**	**78,8**
No answer	7	21,2
Total	**33**	**100,0**

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The collected samples in occupational exposure studies are mainly from urine and blood (Table 36).

Table 36: Collected samples

	Frequency (n)	Percent (%)
Urine	13	39,4
Blood	1	3,0
Urine and blood	4	12,1
Urine and air	3	9,1
Blood and air	2	6,1
Urine, blood and air	2	6,1
Urine, blood, air and other	3	9,1
Other	1	3,0
No answer	4	12,1
Total	**33**	**87,9**

The following table describes the information each study has gathered with regard to HBM data, namely concerning the type of biological sample (Table 37).

Table 37: Type of biological sample

	Frequency (n)	Percent (%)
Blood	3	9,1
Blood serum	1	3,0
Hair	1	3,0
Urine	17	51,5
Urine and blood	9	27,3
Urine, blood and Hair	1	3,0
No answer	1	3,0
Total	**33**	**100,0**

The time elapsed at the time of sampling since the last supposed exposure was also questioned, being the most frequent one the situation of <6h (Table 38).

Table 38: Time elapsed at the time of sampling since the last supposed exposure (end of the shift)

	Frequency (n)	Percent (%)
<6h	17	51,5
12-18h	2	6,1
>48h	1	3,0
6-12h & 18-24h	1	3,0
<6h & 12-18h	1	3,0
No answer	11	33,3
Total	**33**	**100,0**

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4.1.2 Level of potential evidence of the studies/projects/activities

One of the goals of this task was to define quality criteria for the studies/projects/activities, allowing data comparability. Following the recommendations of some of the partners, it was decided to change this concept and to propose instead criteria that index a level of evidence for each study/project/activity. As a matter of fact, it is not the quality of each study/project/activity that is in question (there is a pre-assumption that all projects have internal validity and, therefore, quality). What is relevant, for building up overall pictures about collected data and information, is how potentially strong is the collected (or to be collected) evidence. Level of evidence is a concept that is adopted by several institutions, to summarise collected knowledge (e.g., Cochrane Foundation).

In this context, taking into consideration partners' consultation about evidence criteria, and attending only to an overarching appreciation of the potentially produced (or to be produced) evidence by each study/project/activity, the selected variables for building up an index of potential level of evidence (and corresponding options of answer, i.e., level of evidence) were:

1. Implementation level of the study (options: 1 = international/national; 0 = regional/other);
2. Ethical approval (options: 1 = yes; 0 = no);
3. Study design (options: 1 = longitudinal/cohort; 0 = pilot-study, cross-sectional survey, case-control);
4. Sample size (options: 1 = 100 or more individuals; 0 = 0 – 99 individuals);
5. Qualified/trained interviewers (options: 1 = yes; 0 = no).

For an overall index of potential evidence, a linear sum of these parameters was done. Therefore, studies/projects/activities range from 0 to 5 points in terms potential level of evidence. As can be seen in next table, 48,2% of the studies/projects/activities have characteristics that can be high or very high level of evidence.

Table 39: Potential level of evidence[*]

	Frequency (n)	Percent (%)
1 = Very low evidence	4	3,7
2 = Low evidence	23	21.3
3 = Rather low evidence	29	26,9
4 = High evidence	42	38,9
5 = Very high evidence	10	9,3
Total	**108**	**100,0**

[*]Only projects with data for all the parameters were included.

4.1.3 Metadata available to be uploaded into IPCheM

The developed questionnaire also intended to identify which biomarkers and other parameters/indicators were available, what level of access was reported as allowed and what was the aggregation level.

With regard to the information collected for section 3 (Fieldwork and data collection) and 4 (Other data) of the questionnaire, a list of available biomarkers and other parameters can be drawn (Table 40).

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Table 40: Percentage of studies/projects/activities that collect/ed information, by specific health-related parameters and indicators

	Frequency (n)	Percent (%)
Genetic-related data	31	25,0
Molecular information	32	25,8
Skin parameters	10	8,1
Respiratory/lung parameters	30	24,2
Skeletal parameters	6	4,8
Renal function parameters	34	27,4
Reproductive and/or development system parameters	41	33,1
Immunity	11	8,9
Neurological parameters	26	21,0
Essential trace elements	34	27,4
Anthropometric data (objectively measured)	89	71,8
Other parameters and indicators	57	46,0
Outdoor pollution	50	40,3
Environmental noise exposure	11	8,9
Climate	20	16,1
Residence	105	84,7
Indoor parameters	71	57,3
Food intake / food habits	109	87,9
Frequency of consumption of food produced locally	46	37,1
Traffic exposure or mobility	59	47,6
Participants' personal hygiene	42	33,9
Smoking habits	98	79,0
Dental status	56	45,2
Clothing / body adornments	56	45,2
Contact with toxic substances	46	37,1
Hobbies and holidays	64	51,6
Other lifestyle aspects	48	38,7
Health care utilization	26	21,0
Family health-related history	50	40,3
Medical history of the participant	79	63,7
Specific stages of life	48	38,7
Pregnancy or delivery	65	52,4
New born / infant biometry/health	49	39,5
Unspecified health complaints	23	18,5
Accidents	9	7,3
Exposure during pregnancy and/or breastfeeding	39	31,5

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	Frequency (n)	Percent (%)
Occupational exposure	46	37,1
Other types of exposure	37	29,8
Medication during pregnancy, delivery or breastfeeding	37	29,8
Medication during delivery	17	13,7
Medication during breastfeeding	20	16,1
Medication administered to or taken by children or adolescents	35	28,2
Permanent or acute medication for respiratory or allergic diseases	52	41,9
Socio-demographic and/or socio-economic factors	105	84,7

Considering the access and use by IPCheM, the results are as follows (Table 41 and Table 42).

Table 41: Access and use of biomarkers and other parameters

	Frequency (n)	Percent (%)
No access at all	47	37,9
Access for IPCheM* (only for consultation)	**18**	**14,5**
Access (only for consultation) for other researchers/organisations	**14**	**11,3**
Access and use for IPCheM	**23**	**18,5**
Access and use for other researchers/ organisations	**22**	**17,7**
Total	**124**	**100,0**

Table 42: Aggregation level of data of biomarkers and other parameters

	Frequency (n)	Percent (%)
Metadata	26	19,5
Aggregated data (by gender, age groups, population type, …)	46	34,6
Filtered/generalised single measurement data with key parameters	23	17,3
Single measurement data with additional relevant parameters	38	28,6
Total	**133**	**100,0**

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

In addition to the results presented in the above pages, for European representative studies, more analysis on the data gaps will be done by VITO in WP 10 and Task 7.2. This additional work is of utmost importance in order to obtain a more complete perspective on the existing data gaps. For that, it is necessary i) to have a thorough look into the data with access to individual data and ii) to have defined which data shall be available to report about European representativeness.

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4.2 Literature review

The literature search aimed to review the available biomonitoring and exposure data regarding the prioritised substances.

A unique file was produced with the information gathered from the reviewed papers for each of the substances indicated in the following table. An example of the synoptic table produced for one of the substances, in this case for cadmium, for the five first entries is presented below. The full excel documents for each substance will be made available on the wiki.

ID	Reference (author/s, title, year of publication, journal)	HBM Study/Project/Activity name (including acronym, if any)	Coordination research unit (Name, acronym and country of the research unit responsible for the study)	Country/countries (where the data were collected)	HBM implementation level (international, national, regional, local, …)	Main objectives (including specific HBM objectives)
1	Hoet P, Haufroid V, Deumer G, Dumont X, Lison D, Hantson P. Acute kidney injury			Belgium		To test the hypothesis t
2	Hambach R, Lison D, D'Haese P, Weyler J, François G, De Schryver A, et al. Adverse			Belgium	Local	To assess indicators for
3	Unkiewicz-Winiarczyk A, Gromysz-Kałkowska K, Szubartowska E. Aluminium, cadm			Poland	Local	To estimate the mean co
4	Sánchez-Rodríguez JE, Bartolomé M, Cañas AI, Huetos O, Navarro C, Rodríguez AC			Spain	Local	To analyze the impact
5	Durand C, Sauthier N, Schwoebel V. Assessment of exposure to soils contaminated			France	Local	To measure and explain

Study design (cross-sectional, longitudinal/cohort, case-control, …)	Population & Sampling					
	Target population (- general population or clinical; - children, adolescents, adults, …)	Number of participants	Inclusion/exclusion criteria (age range, gender, …)	Sampling method (Random, convenience / intentional, stratified, …)	Recruitment (recruitment place: school, hospital, registration office) (recruitment via: GP, census data, health archives, mail address, door to door, … other relevant information on recruitment)	Time schedule (frequency) of data collection (every year, once a year, …)
Cross-sectional	age > 18 years	60	Inclusion criteria: (1)	Convenience	University hospital	
Cross-sectional	men workers performing	71	'exposure group':	Intentional/convenie	refrigeration companies located in	
Cross-sectional	students and workers of	109	students and workers	Intentional	Maria Curie-Sklodowska University	
Longitudinal	workers from the	83	workers from the	Intentional	annual medical check-up, Instituto	Each year
Cross-sectional	over 2 years old	Screening for kic	Screening: volunteer	Intentional	Census data	

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Data collection				Main findings / Conclusions	Limitations of the study
Period of data collection (beginning and ending date)	Mode of data collection	Group/s of substances studied	Collected data (Please specify, if possible, non-biological data, biological samples and biomarkers and other parameters collected)		
	Medical histories;	Cd, Pb and Zn; Al, As,	- Non-biological data: medic	ALF patients excreted markedly more Cd than the h	
between March	questionnaire;	Cadmium, creatinine,	- Non-biological data: renal a	relatively low Cd-B and Cd	the relatively small size o
	The sampled hair	Cadmium, aluminium,	- Biological samples: hair	1. The levels of Al, Cd	
2007 to 2011	self-administered	Cadmium, cotinine,	- Non-biological data: lifesty	The stricter anti-	One of these is that the
September–Octob	face-to-face	Cadmium, lead, arsenic;	- Non-biological data: socioc	No case of lead poisoning	The selection of the

Table 43: Number of papers identified by the literature review for each prioritised substance

	Frequency
Phthalates/DINCH	18
Bisphenols	30
Per-/polyfluorinated compounds	70
Flame retardants	-*
Cadmium	46
Chromium IV	4
PAHs	-**
Anilin family: MOCA	8
Total	**176**

* For flame retardants, and in order to include the work that was already done for this substance, the literature search has some differences when compared with the ones performed for the other substances. Therefore, a list of ongoing projects was received, although not only covering population studies.

** The collection of data for these substances was provided by the CGL (AUTH) and is therefore not included in the analysis for this report. The literature review for this task will complement the work done by the CGLs.

For the purpose of this report, we present below the main results of the literature review considering the variables included as criteria for potential level of evidence for the studies/projects/activities in the survey. Since scientific papers do not provide a detailed description of the studies as much as the questionnaire, it was decided to search for this specific information. Only the clearly identified studies are included (n=22; not all of the papers selected for the literature review concerned a specific study and in that case were not included in the following analysis. The entire compilation of studies can be consulted on the HBM4EU wiki).

The studies were the data collection took place more often were Denmark (21,6%) and Norway (18,9%).

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Table 44: Countries where data were collected

	Frequency (n)	Percent (%)
Belgium	2	5,4
Croatia	1	2,7
Denmark	**8**	**21,6**
Finland	1	2,7
Germany	1	2,7
Greece	1	2,7
Hungary	1	2,7
Italy	1	2,7
Netherlands	2	5,4
Norway	**7**	**18,9**
Poland	1	2,7
Slovakia	1	2,7
Spain	3	8,1
Sweden	4	10,8
Switzerland	1	2,7
Ukraine	1	2,7
United Kingdom	1	2,7
Total	**37**	**100,0**

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

For the implementation level, the majority of the studies (54,5%) identified with the literature review were regional (Table 45).

Table 45: Study/project/activity implementation level

	Frequency (n)	Percent (%)
International	3	13,6
National	4	18,2
Regional (province, county, etc.)	**12**	**54,5**
Other	0	0,0
No answer	3	13,6
Total	**22**	**100,0**

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Most of the studies identified in the literature review were concluded (Table 46). To note that no planned studies were identified with this approach.

Table 46: Status of the studies/projects/activities

	Frequency (n)	Percent (%)
Concluded	**12**	**54,6**
Initiated/ongoing	5	22,7
Planned	0	0,0
Unclear	2	9,1
No answer	3	13,6
Total	**22**	**100,0**

In terms of study design, 54,6% of the studies were longitudinal and only 18,2% were cross-sectional (Table 47).

Table 47: Study design

	Frequency (n)	Percent (%)
Cross-sectional	4	18,2
Case-control	0	0,0
Longitudinal (cohort)	**12**	**54,6**
Cross-sectional and longitudinal	0	0,0
Pilot study	0	0,0
Surveillance	0	0,0
Unclear	1	4,6
No answer	5	22,7
Total	**22**	**100,0**

For each of the target groups and corresponding sample sizes, the mean, median and standard deviation are presented in Table 48.

Table 48: Target groups and sample size(s): Mean, median and standard deviation

	Mean	Median	Standard deviation
Children	1716	1385	1580
Adolescents	-	-	-
Mother-newborn pairs: Mother in the group	34961	3916	56346
Mother-newborn pairs: Pairs in the group	19504	850	41095
Adults	1367	951	1206
Elderly	1680	1680	0

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Only 6 of the 22 studies mapped with the literature review reported having qualified or trained personnel (Table 49).

Table 49: Qualified or trained personnel

	Frequency (n)	Percent (%)
No	0	0,0
Yes	**6**	**27,3**
No answer	16	72,7
Total	**22**	**100,0**

Almost 78% of the identified studies obtained ethical approval (Table 50).

Table 50: Ethical approval

	Frequency (n)	Percent (%)
No	0	0,0
Yes	**17**	**77,3**
No answer	5	22,7
Total	**22**	**100,0**

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4.3 Review of books of proceedings of HBM-related conferences

For the search in the books of proceedings, which aimed to identify non-published data in peer-reviewed journals not captured by the online questionnaire, a total of available eight documents were reviewed. The complete information summarised for this search can be consulted on the HBM4EU wiki. Below is presented the analysis related to the index of potential level of evidence, selected from the questionnaire on existing surveys. A total of 58 studies was included.

Table 51: Books of proceedings reviewed and identified studies/projects

	Date	Country	Number of identified presentations
ISES Interdisciplinary Approaches for Health and the Environment	October 9-13 2016	Utrecht, The Netherlands	53
ISEH 2016: The 3rd International Symposium on Environment and Health ISEG 2016: The 10th International Symposium on Environmental Geochemistry Geoinformatics 2016: The 24th International Conference on Geoinformatics	August 14-20 2016	Galway, Ireland	2
2nd International Conference on Human Biomonitoring	April 17-19 2016	Berlin, Germany	77
6th International Conference on Medical Geology	July 26-August 1 2015	Aveiro, Portugal	7
7th International Workshop on Biomonitoring of Atmospheric Pollution	June 14-19 2015	Lisboa, Portugal	12
8th International Symposium on Air Monitoring and Biomonitoring, France 2014	June 15-19 2014	Marseille, France	46
9th International Symposium on Biological Monitoring in Occupational and Environmental Health 2013	September 9–11 2013	Manchester, UK	53
European Conference on Human Biomonitoring	November 4-5 2008	Paris, France	15

The distribution of countries where the data were collected / the studies were performed is presented in Table 52. Germany is the country with more studies identified through books of proceedings (n=23).

Table 52: Countries where data were collected

	Frequency (n)	Percent (%)
Austria	3	1,2
Belgium	10	3,9
Bulgaria	1	0,4
Canada	3	1,2
Croatia	2	0,8
Cyprus	3	1,2

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	Frequency (n)	Percent (%)
Czech Republic	10	3,9
Denmark	9	3,5
Estonia	2	0,8
Finland	14	5,4
France	**21**	**8,2**
Germany	**23**	**9,0**
Greece	10	3,9
Hungary	3	1,2
Iceland	3	1,2
Ireland	2	0,8
Israel	3	1,2
Italy	17	6,6
Latvia	1	0,4
Lithuania	4	1,6
Luxembourg	1	0,4
Netherlands	14	5,4
Norway	10	3,9
Pakistan	1	0,4
Poland	7	2,7
Portugal	8	3,1
Russia	2	0,8
Scotland	1	0,4
Servia	2	0,8
Slovakia	7	2,7
Slovenia	2	0,8
Spain	17	6,6
Sweden	15	5,7
Switzerland	5	1,8
United Kingdom	**18**	**7,0**
USA	3	1,2
Total	**257**	**100,0**

Note: Data presented in this table refer to a multiple-choice question. The sum of reported studies does not correspond to the total of answers given to the questionnaire (n=124).

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Unlike what was observed for the results of the survey and the literature review, the majority of the studies (46,6%) identified with the review of the books of proceedings had an international implementation level (Table 53).

Table 53: Study/project/activity implementation level

	Frequency (n)	Percent (%)
International	27	46,6
National	16	27,6
Regional (province, county, etc.)	12	20,7
Other	1	1,7
No answer	2	3,4
Total	**58**	**100,0**

Most of the studies identified through books of proceedings were concluded (Table 54).

Table 54: Status of the studies/projects/activities

	Frequency (n)	Percent (%)
Concluded	43	74,1
Initiated/ongoing	9	15,5
Planned	1	1,7
Unclear	5	8,6
No answer	0	0,0
Total	**58**	**100,0**

In terms of study design, 31,0% of the studies were cross-sectional (Table 55).

Table 55: Study design

	Frequency (n)	Percent (%)
Cross-sectional	18	31,0
Case-control	1	1,7
Longitudinal (cohort)	11	19,0
Cross-sectional and longitudinal	1	1,7
Pilot study	0	0,0
Surveillance	0	0,0
Unclear	4	6,9
No answer	23	39,7
Total	**58**	**100,0**

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For each of the target groups and corresponding sample sizes, the mean, median and standard deviation are presented in Table 56.

Table 56: Target groups and sample size(s): Mean, median and standard deviation

	Mean	Median	Standard deviation
Children	2115	812	4247
Adolescents	-	-	-
Mother-newborn pairs: Mother in the group	3910	497	7068
Mother-newborn pairs: Pairs in the group	2160	2160	0
Adults	1997	1399	2102
Elderly	-	-	-

Only 8 of the 58 studies mapped with the review of the books of proceedings reported having qualified or trained personnel (Table 57).

Table 57: Qualified or trained personnel

	Frequency (n)	Percent (%)
No	0	0,0
Yes	**8**	**13,8**
No answer	50	86,2
Total	**58**	**100,0**

Only 36,2% of the identified studies obtained ethical approval (Table 58).

Table 58: Ethical approval

	Frequency (n)	Percent (%)
No	0	0,0
Yes	**21**	**36,2**
No answer	37	63,8
Total	**58**	**100,0**

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5 Main conclusions

In the last decades there has been a growth in scientific production in the HBM area. This was due, among other reasons, to the increasing use of new biomarker techniques – with focus on environmental exposure, susceptibility and effect – and to the effort of national authorities which started to apply HBM in population surveys designed to monitor exposure levels to environmental chemicals in the general population[1]. However, in a sea of information, where different studies focus on particular aspects and on specific substances, there is still a need to develop suitable methods for systematic mapping of available evidence and identification of research gaps.

The use of a triangulation of methods for Task 7.1 – including an online survey, a review of the available literature via publication in peer-reviewed journals and a literature search within HBM-related books of proceedings – enabled the creation of an inventory of concluded, ongoing or planned HBM studies and biobanked samples.

As shown in the figure below, different methods provided distinct complementary information on the existing HBM surveys. In fact, only 18 projects were identified by all three approaches. On the contrary, a large number of studies were identified by one of the methods: 92 unique studies identified solely with the online questionnaire, 22 with the literature review and 58 with the review of the books of proceedings. In total, 206 different studies were identified through the three approaches.
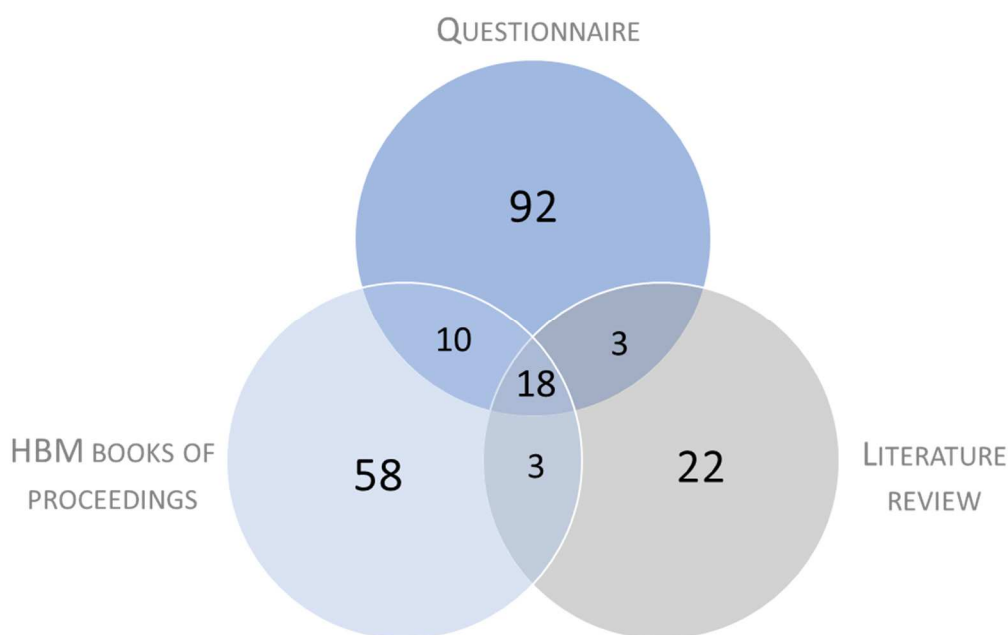
Figure 6: Number of identified studies by type of approach

Still, there was a difference between the number of answer/registers to the questionnaire or articles/abstracts identified through literature review/conference books and the number of identified studies with each of the three approaches (Figure 7). For the reviews of the books of proceedings, this considerable difference is related to the fact that not all of the selected and analysed papers make explicit the included studies, but only vaguely comment on them.

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Figure 7: Number of answer/registers and of identified studies by type of approach

5.1 Identification of existing data and data gaps

Overall, it was possible to draw several conclusions with regard to the existing data and data gaps (geographical and temporal) with the work developed for task 7.1:

▸ There is an asymmetry in terms of countries/regions where the identified studies on HBM have been developed with Belgium (15,3%), Italy (12,1%) and Spain (8,1%) being the countries where the data collection occurred more frequently if only the data collected with the questionnaire directed to the NHCPs is considered. This does not necessarily mean that there is an unevenness of scientific production but might reflect an under-representation in the studies carried by specific countries, a trend that was verified throughout the three approaches used. Although maintaining the asymmetry, the results change when considering the studies identified using the other two approaches: for the studies of the literature review, data was mainly collected in Denmark (21,6%) and Norway (18,9%), while for the review of the books of proceedings data was predominantly collected in Germany (9,0%), France (8,2%) and United Kingdom (7,0%). Taking all three approaches together, Belgium and Italy appear as the countries with more cases (n=36).

▸ Most of the reported studies identified with the questionnaire had a regional (45,5%) or national (39,9%) scope while studies from the literature review had mainly a regional implementation level (54,5%). In the case of the studies from the review of the books of proceedings, they had mainly an international level of implementation (46,6%). Taking all three approaches together, studies with regional and national implementation level are the most frequent, with 90 and 76 cases, respectively.

▸ Although the majority of the studies identified with the three approaches were already concluded or initiated/ongoing, a pattern consistent by European region, it was possible to map nine projects with the questionnaire and one with the review of the books of proceedings in their planning stage.

▸ The majority of the work that has been developed in the HBM area relates to cross-sectional (46,8%) and longitudinal (37,9%) studies as shown in the results of the questionnaire. The other two approaches also point into this direction: 54,6% of the studies of the literature review had a

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longitudinal design and 31% of the studies of the review of the books of proceedings was cross-sectional.

▸ Children and adults are the main target population of the studies/projects/activities identified through questionnaire, literature review and books of proceedings.

▸ The analyses of the nine groups of substances under study revealed differences in terms of the number of projects dedicated to each substance (the most studied substance is cadmium, in 55 projects, followed by phthalates in 42 of the cases and bisphenols in 36), being most marked the absence of studies on the anilin family reported through the questionnaire as well as very few studies, 5 and 6, on Cr VI and emerging chemicals, respectively. The undertaken literature reviews and study of the books of proceedings did not provide an additional understanding of this difference.

▸ An analysis of data collected with the questionnaire by European-defined region reveals that in the North (56,0%) and East (56,3%), the most studied substances were phthalates/DINCH, whereas in the West (52,3%) and South (55,8%) was cadmium.

▸ Considering the groups of substances distributed by European-defined region, age groups and status of the studies/projects/activities undertaken in the community (general population), the following was found: the reported studies were mostly concluded, the majority of them had adults and children as target population, cadmium as the main substance under study, and they were mostly conducted in Southern and Western regions of Europe.

▸ For the studies/projects/activities reported as having a national representativeness level, the majority involved children and newborns. In studies with children, the most analysed substances were cadmium, flame retardants, bisphenols and phthalates. For those studies with newborns, the main substances under study were flame retardants. In both cases, these studies were mostly conducted in Western Europe.

▸ Considering e.g. the results of the questionnaire, it was possible to verify that there is a variety of biological samples collected (mainly blood in 83 of the cases, serum in 53 and urine spot sample-first morning also in 53 of the studies), with many projects having several of those samples stored (15,1% of the stored samples are blood, 12,3% are serum and 11,1% are plasma and urine spot sample – first morning) and some of them available for access and/or use of other researchers/organisations. The literature review and the study of the books of proceedings did not provide such detailed information.

▸ Analyses of the studies/projects/activities (general population) with urine samples and blood by group of substances, region and age groups, the largest number of studies are from Western and Northern regions. Concerning the target population and substances under study, the focus is on children and phthalates, respectively.

▸ Information about several biomarkers, HBM samples, clinical parameters, anthropometric data, physiological indicators, outdoor pollution and occupational exposure has been collected with the questionnaire.

▸ As for biobanked samples, a majority of the projects allow (partial) access to the database of non-biological data and have available for the HBM4EU partners the questionnaire used for data collection.

▸ The concept of "quality criteria" to classify the studies/projects/activities was altered to "criteria that index a level of evidence" given the fact that there is a pre-assumption that all projects have internal validity and, therefore, quality. For building up overall pictures about collected data and information it is more important to know how potentially strong is the collected (or to be

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collected) evidence. An overarching appreciation of the potentially produced (or to be produced) evidence by each study/project/activity found through the questionnaire revealed that almost half of them have characteristics that can make them of high or very high level which reveals the robustness of the results.

▸ A list of metadata available to be uploaded into IPCheM is presented with this report and in a separate SPSS and Excel database, being nearly 20% of the reported data accessible for use. For European representative studies, a deeper data analysis of spatial and temporal data gaps will be done by VITO in WP 10 and Task 7.2 to obtain a deeper look into the data with access to individual data and to define which data shall be available to report about European representativeness.

▸ The categorisation of the single compounds into the categories A-C is not addressed in this report and will be done by the CGLs under task 4.4 scoping documents.

5.2 Strengths and limitations

Biomonitoring data can provide much-needed information on exposure to a variety of environmental chemicals. However, the interpretation of existing biomonitoring data requires rigorous, scientific approaches to data collection, analysis, interpretation, and application. In this context, the use of a multi-methods approach was determinant for comprehensive gathering of research data and conclusions, enabling the identification of non-published studies, projects and activities that would be otherwise missed.

With the consultation of the NHCPs from the countries included in the consortium through an online survey, in articulation with literature reviews, it was possible to identify, in a more complete manner, otherwise unreachable geographical and temporal data gaps in this area. To note that, for the majority of the analised data, the general patterns obsereved were consistent when the analyses were stratified by European-defined region, target population and groups of substances. Considering the large geographical coverage and the comprehensiveness of the collected data, we think that the potential of this work to inform the work to be developed by other work packages is wide.

Nonetheless, we should envisage some of the limitations of such work as the one included in Task 7.1. With regard to the questionnaire, the period for data collection was limited in time. After that, we kept receiving requests from different institutions to fill in the survey. This highlights the need to continuously update the information about HBM to ensure the sustainability of initiatives such as HBM4EU. The adaptation of the questionnaire into a repository continuously open might represent an alternative to keep an updated inventory of the work developed in the HBM realm.

Moreover, a very diverse information was collected with the survey. Given the need to include more questions for other tasks/WPs, although comprehensive, the questionnaire was also very extensive. For this reason, it was not possible to check the obtained data from the NHCPs for plausibility or correctness.

Other limitations relate to the fact that altough with a systematic map of the literature review process, this was done by different partners from several institutions on a given substance. As such, the interpretation of the data should be done with caution. Furthermore, numerous conferences have taken place in the last ten years but only a small part were captured in the review, notwithstanding the efforts to identify the several editions of a given conference. As a matter of fact, not all of the conferences have their books of proceedings available for consultation to the general public.

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For the review of the books of proceedings, it was difficult to identify the project presented in a given abstract since the information was scarce or incomplete (most abstracts in the proceedings were only 250-300 words long). The same limitation is encountered within the literature review, where several papers were identified but only a small number made reference to a specific study/project/activity.

Finnaly, we found some difficulties when compiling in a complete inventory the data collected through the three different approaches since some crucial information was missing for several studies/projects/activities. Further, an additional search for information in the grey literature was insufficient to complement the missing data: several project websites were disabled or outdated, others had few information not easily accessible and in cases where the information was spread among different website there were conflicting data available. Even so, an important basis to inform further research needs in this realm and to contribute to more targeted policy measures was laid, thus contributing to the overarching goal of the HBM4EU of generating knowledge to inform the safe management of chemicals and so protect human health.

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Appendixes

Appendix 1 – Main questionnaire on existing surveys

Appendix 2 – Questionnaire on occupational exposure

Appendix 3 – Statistical analysis plan for the data gathered with the main questionnaire

Appendix 4 – Protocol for the literature review, including orientation guidelines for key-words to include, eligibility criteria for the search, inclusion criteria for the identified studies and data extraction

Appendix 5 – Synoptic table for the literature review

Appendix 1

Main questionnaire on existing surveys

Section A: 1. GENERAL INFORMATION

Next, you will be asked regarding studies, projects or activities that were concluded (within last 10 years), ongoing or planned (for starting up within the next 5 years), targeting any of the nine prioritised substances. Please provide information for one study/project/activity at a time. If you have been involved in more than one, please access a new questionnaire for each study/project/activity.

You will not have to answer the entire questionnaire. It is done in a way that you will only have to answer the parts that specifically apply to the study/project/activity you are describing.

Please note that the questionnaire allows you to save the form at and resume it afterwards, at any moment, for completing the missing information. Like that, you can fill it in in different moments, at your convenience, and not be obliged to complete it at once.

A1.   Identification of HBM study/project/activity name

Please indicate the name and acronym (if any) of the HBM activity. If the name of the study/project/activity is not defined in English, please provide an English translation of it.

Please indicate the name and acronym of the institution whenever possible.

Name ☐☐☐☐☐☐☐☐☐☐

Acronym ☐☐☐☐☐☐☐☐☐☐

A2.   Human Biomonitoring (HBM) type

Research project ☐

Surveillance/monitoring project ☐

Policy / Legislation ☐

Development of tools / guidelines / training materials ☐

Quality Control / Quality Assurance ☐

Improving Health Services delivery infrastructure ☐

Health promotion ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

A3.   Study/project/activity implementation level

If you want to answer "Other (Please specify)", please write your answer in the blank space (this will automatically select the option).

International ☐

National ☐

Regional (province, county, etc.) ☐

Other (Please specify) ▼

Other (Please specify)

A4. **Country/countries where data were/are/will be collected**

Austria ☐

Belgium ☐

Bulgaria ☐

Croatia ☐

Cyprus ☐

Czech Republic ☐

Denmark ☐

Estonia ☐

Finland ☐

France ☐

Germany ☐

Greece ☐

Hungary ☐

Ireland ☐

Italy ☐

Latvia ☐

Lithuania ☐

Luxembourg ☐

Malta ☐

Netherlands ☐

Poland ☐

Portugal ☐

Romania ☐

Slovakia ☐

Slovenia ☐

|||||| | || | ||| ||| || | |||||

	Spain	☐
	Sweden	☐
	United Kingdom	☐
	Other (Please specify)	▼

Other (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

A5. Language of data collection

	Dutch	☐
	English	☐
	French	☐
	German	☐
	Italian	☐
	Portuguese	☐
	Spanish	☐
	Other (Please specify)	▼

Other (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

A6. Institution responsible for the study/project/activity implementation

Please indicate name, acronym (if any) and country of the institution

Name of the institute | | | | | | | | | | | | |

Acronym | | | | | | | | | | | | |

Country | | | | | | | | | | | | |

A7. Type of the Institution

Please indicate the type of institution responsible for the study/project/activity implementation

	Public	☐
	Private	☐
	Other (Please specify)	▼

Other (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

A8.	**What type of public institution?**

University ☐

Other public institution ☐

A9.	**Name of the Principal Investigator**

A10.	**Contact person 1**

Please indicate information regarding the contact person(s) for this study/project/activity

Name

Affiliation

Address

Phone

Email

A11.	**Do you wish to add another contact person?**

Yes ☐

No ☐

A12.	**Contact person 2**

Name

Affiliation

Address

Phone

Email

A13.	**Do you wish to add another contact person?**

Yes ☐

No ☐

A14.	**Contact person 3**

Name

Affiliation

Address

Phone

Email

A15. **Other institution(s) involved**

Please indicate name, acronym (if any) and country of the institution(s)

Name

Acronym

Country

A16. **Do you wish to add another institution?**

Yes ☐

No ☐

A17. **Other institution(s) involved 2**

Please indicate name, acronym (if any) and country of the institution(s)

Name

Acronym

Country

A18. **Do you wish to add another institution?**

Yes ☐

No ☐

A19. **Other institution(s) involved 3**

Please indicate name, acronym (if any) and country of the institution(s)

Name

Acronym

Country

A20. **Do you wish to add another institution?**

Yes ☐

No ☐

A21. **Other institution(s) involved 4**

Please indicate name, acronym (if any) and country of the institution(s)

Name

Acronym

Country

A22. **Do you wish to add another institution?**

Yes ☐

No ☐

A23. **Other institution(s) involved 5**

Please indicate name, acronym (if any) and country of the institution(s)

Name ☐☐☐☐☐☐☐☐☐☐☐☐

Acronym ☐☐☐☐☐☐☐☐☐☐☐☐

Country ☐☐☐☐☐☐☐☐☐☐☐☐

A24. **General objectives of the study/project/activity**

A25. **HBM specific related-objectives of the study/project/activity**

A26. **Status**

Concluded (within the last 10 years) ☐

Initiated/ongoing ☐

Planned (for starting within the next 5 years) ☐

A27. **Beginning (or previewed) starting) date of the study/project/activity**
Please indicate the date of the starting up of the study/project/activity (including planning and organization steps – not considering only the fieldwork schedule)

☐☐☐☐☐☐☐☐

A28. **(Previewed) Ending date of the study/project/activity**

(if applicable)

☐☐☐☐☐☐☐☐

A29. **Budget of the project/study/activity**

Please indicate the total budget, to the nearest thousand Euros

A30. **Name (and acronym, if any) of the entity/entities who funded the study/project/activity**

Entity 1

Entity 2

Entity 3

Entity 4

Entity 5

A31. **Ethical approval**

Please indicate if the study/project/activity was/will be approved by an ethics commission/entity and, if so, by whom

Yes ☐

No ☐

A32. **By whom?**

Institutional policy

Ethics committee

Deontology committee

Other (Please specify)

A33. **Please insert information of the contact person for ethic documents**

Name

Affiliation

Address

Phone

Email

A34. Internet link with information about data collection tools

Please insert an internet link or links (separated by semicolon) with information about the tools used for datta collection

Section B: 2. DESCRIPTION OF THE TARGET POPULATION AND METHOD OF SELECTION OF PARTICIPANTS

Please indicate (checking <u>all</u> that apply) the target population and the sampling details of this HBM study/project/activity.

Target groups and respective sample size(s)

Please consider the following target groups: children, adolescents, mother-newborn pairs, adults, elderly, other specific population (smokers, workers, disabled, ...). Next, for each group (if applicable), you will be asked about age limits and size of the sample.

Inclusion criteria

Please check <u>all</u> that apply in the following options

Exclusion criteria

Please check <u>all</u> that apply in the following options

Inclusion criteria of control group
Exclusion criteria of control group

Consent procedures

Please check <u>all</u> that apply

B1. Study design

Cross-sectional survey ☐

Case-control ☐

Longitudinal (cohort) ☐

Other (Please specify) ▼

Other (Please specify)

B2. **Type of target population**

General population (non-clinical population) ☐

Clinical population ☐

Other (Please specify) ▼

Other (Please specify)

B3. **Children**

Lower limit of age

Upper limit of age

Sample size (number of participants)

B4. **Adolescents**

Lower limit of age

Upper limit of age

Sample size (number of participants)

B5. **Mother-newborn pairs**

Lower limit of mother's age

Upper limit of age mother's age

Lower limit of newborn's age

Upper limit of newborn's age

Number of mothers in the group

Number of pairs in the group

B6. **Adults**

Lower limit of age

Upper limit of age

Sample size (number of participants)

B7. **Elderly**

Lower limit of age

Upper limit of age

Sample size (number of participants)

B8. **Other specific population? (smokers, workers, disabled, …)**

Yes ☐

No ☐

B9. **Specify**

| | | | | | | | | | | | | | | | | | | | | | | | | |

B10. **Other specific population specified above**

Lower limit of age | | | | | | | | | | |

Upper limit of age | | | | | | | | | | |

Sample size (number of participants) | | | | | | | | | | |

B11. **Sex of the participants**

Women ☐

Men ☐

Both ☐

B12. **Gender**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

B13. **Age**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

B14. **Geographical Unit (e.g., NUTS II)**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

| | | | | | | | | | | | | | | | | | | | | | | | | |

B15. **Health condition**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B16. **Specific exposure**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

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B17. **Other inclusion criteria**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

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B18. **Gender**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B19. **Age**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B20. **Geographical Unit (e.g., NUTS II)**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B21. **Health condition**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B22. **Specific exposure**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B23. **Other exclusion criteria**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B24. **Control group**

Please indicate presence of control group (if applicable)

Yes ☐

No ☐

B25. **Size of the control group**

☐☐☐☐☐☐☐☐☐☐

B26. **Gender**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B27. **Age**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B28. **Geographical Unit (e.g., NUTS II)**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B29. **Health condition**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B30. **Specific exposure**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B31. **Other inclusion criteria**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B32. **Gender**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B33. **Age**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B34. **Geographical Unit (e.g., NUTS II)**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B35. **Health condition**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B36. **Specific exposure**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B37. **Other exclusion criteria**

No ☐

Yes (Please specify) ▼

Yes (Please specify)

B38. **Sampling method**

Random selection ☐

Convenience / intentional ☐

Stratified (e.g., by sex, age groups, educational level, regions, etc.) ☐

Other (Please specify) ▼

Other (Please specify)

B39. **Please, provide a short description of your sampling scheme (sampling units, stratification procedure, etc.)**

B40. **Recruitment/sampling frame (origin of participant addresses)**

Census data ☐

Electoral register ☐

School (class) lists ☐

Health centre list ☐

Hospital patients list ☐

Health or other type of professionals' list ☐

Other type of population register ☐

Health archives ☐

Participants from another study (e.g. a health examination study) ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

B41. **Recruitment contact**

Through general practitioner (GP) doctors (inviting patients) ☐

Through paediatricians (inviting patients) ☐

Through gynaecologists (inviting patients) ☐

Through other medical doctors (inviting patients) ☐

Through midwives (inviting patients) ☐

Through nurses (inviting patients) ☐

Mass Media Call/Invitation (press, radio, social media) ☐

Mail address (letter) ☐

Telephone contact ☐

E-mail invitation ☐

Internet (social networks, …) ☐

Door to door ☐

Street contact ☐

Direct contact (e.g., waiting room, hair dressers, …) ☐

Other (Please specify) ▼

Other (Please specify)

B42. **Is it a representativeness sample (regarding any kind of universe/population?)**

Yes ☐

No ☐

B43. **At what level (which universe/population – e.g., at national level, at regional level, …)?**

B44. **Time schedule (frequency) of this study/project/activity**

Only once ☐

Once a year ☐

Every 2 years ☐

Every 3 years ☐

Every 4 years ☐

Every 5 years ☐

Until the number of participants/samples are recruited/collected ☐

Other (Please specify ▼

Other (Please specify

B45. **Type of consent form**

Participants' written informed consent ☐

Parents' written informed consent ☐

Oral informed consent ☐

Other (Please specify) ▼

Other (Please specify)

B46. **Scope of the informed consent**

Participants gave informed content for usage of data only within the context of this study/project/activity ☐

Participants gave broader consent (data can be used for other studies, projects, activities) ☐

Other details (Please specify) ▼

Other details (Please specify)

B47. **Incentives for participants**

No encouragement ☐

Reminder letter ☐

Small gifts/presents ☐

Financial compensation ☐

Greetings cards ☐

Birthday cards ☐

Expensive presents (lottery) ☐

Main collective results ☐

Main individual results (participation feedback) ☐

Newsletter to participants ☐

Educational package on Environment and/or Health ☐

Medical examination ☐

Additional health monitoring ☐

Medical advice and help ☐

Other (Please specify) ▼

Other (Please specify)

B48. If you slected "financial compensation" above, please specify the type of incentive (e.g., reimbursement of travel expenses, before or after participation, amount, …)

Section C: 3. FIELDWORK AND DATA COLLECTION

Please indicate (checking <u>all</u> that apply) the fieldwork details and the methods used to obtain data.

Period of data collection

C1. **Beginning date**

C2. **Ending date**

C3. **Mode of data collection**

Face-to-face interviews (including biological sample collection, anthropometric measurements, …) ☐

Face-to-face interviews (neither with biological sample collection nor anthropometric measurements, …) ☐

Telephone interview ☐

Computer-Assisted Telephone Interview (CATI) ☐

Computer-Assisted Personal Interview (CAPI) ☐

Self-administered questionnaire (paper) ☐

Self-administered questionnaire (online) ☐

Other (Please specify) ▼

Other (Please specify)

C4. In case of face-to-face administered questionnaire or phone interview, the information was/will be obtained by qualified and trained personnel?

Yes ☐

No ☐

C5. **In case of face-to-face data collection, which is/was/will be the place where the interview is/was conducted?**

At participants' home ☐

At an examination centre ☐

At a mobile lab ☐

In a hospital/maternity ☐

In a clinic ☐

In a primary health centre ☐

In a nursing home ☐

At kindergarten ☐

At (vocational) school ☐

In a lactarium ☐

At workplace ☐

Other (Please specify) ▼

Other (Please specify)

C6. **In case of using a questionnaire for data collection, is it possible to share this questionnaire?**

No ☐

Yes, it is available to any researcher ☐

Yes, only to HBM4EU partners ☐

C7. **Biological samples collected**

None ☐

Blood ☐

Blood erythrocytes ☐

Plasma ☐

Serum ☐

Saliva ☐

Buccal cells ☐

Nails ☐

DNA ☐

Cells lines ☐

12-hours overnight urine ☐

Urine (24h) ☐

Urine (spot sample - random) ☐

Urine (spot sample - first morning) ☐

Human milk ☐

Hair (chopped/lyophilised sample) ☐

Hair (complete locks) ☐

Fat/adipose tissue ☐

Placenta ☐

Umbilical cord blood ☐

Other (Please specify) ▼

Other (Please specify)

C8.   Group/s of substances under study

Please indicate (checking underline all that apply) the group/s of substances studied.

Phthalates /DINCH (Please specify, including if possible the CAS-number) ☐

Bisphenols (Please specify, including if possible the CAS-number) ☐

Per-/Polyfluorinated compounds (Please specify, including if possible the CAS-number) ☐

Flame Retardants (Please specify, including if possible the CAS-number) ☐

Cadmium ☐

Chromium VI ☐

PAHs (Please specify, including if possible the CAS-number) ☐

Anilin family: Anilines, MOCA (Please specify, including if possible the CAS-number) ☐

Chemicals mixtures (Please specify, including if possible the CAS-number) ☐

Emerging chemicals (Please specify, including if possible the CAS-number) ☐

Other (Please specify, including if possible the CAS-number) ☐

C9.   Regarding phthalates /DINCH

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C10. Regarding bisphenols

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C11. Regarding per-/Polyfluorinated compounds

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C12. Regarding flame retardants

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C13.   Regarding cadmium

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C14.   Regarding chromium VI

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C15.   Regarding PAHs

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C16. Regarding Anilin family: Anilines, MOCA

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C17. Regarding chemicals mixtures

Matrix: ☐

Unit of measurement: ☐

LOD: ☐

LOQ: ☐

Number of analysed samples: ☐

Number of samples below LOD: ☐

Number of samples below LOQ: ☐

Exposure range: ☐

Analytical method: ☐

C18. Regarding emerging chemicals

Matrix: ☐

Unit of measurement: ☐

LOD:	☐
LOQ:	☐
Number of analysed samples:	☐
Number of samples below LOD:	☐
Number of samples below LOQ:	☐
Exposure range:	☐
Analytical method:	☐

C19. Regarding other substance (specified above)

Matrix:	☐
Unit of measurement:	☐
LOD:	☐
LOQ:	☐
Number of analysed samples:	☐
Number of samples below LOD:	☐
Number of samples below LOQ:	☐
Exposure range:	☐
Analytical method:	☐

C20. Does the study/project/activity collect genetic-related data?

Yes	☐
No	☐

C21. Specific polymorphism

GSTM1	☐
GSTM3	☐
GSTT1	☐
GSTP1	☐
NAT2	☐
EPHX	☐
XRCC1	☐
XRCC3	☐
XPD	☐

XPA ☐

TDG ☐

ALAD ☐

Other (Please specify) ▼

Other (Please specify)

C22. DNA Damage

Single strand breaks ☐

Double strand breaks ☐

DNA strand cross links ☐

DNA adducts ☐

DNA base changes ☐

Other (Please specify) ▼

Other (Please specify)

C23. DNA repair

Apoptosis ☐

Excision repair ☐

Double-strand break repair ☐

Other (Please specify) ▼

Other (Please specify)

C24. Gene mutations

HPRT ☐

Glycophorin A ☐

Other (Please specify) ▼

Other (Please specify)

C25. Chromosomal alterations

Chromosomal aberrations ☐

Micronuclei ☐

Numerical chromosome changes ☐

Sister chromatid exchange ☐

Reciprocal translocations ☐

Other (Please specify) ▼

Other (Please specify)

C26. **Does the study/project/activity collect data regarding molecular information?**

Yes ☐

No ☐

C27. **Wich data was collected regarding molecular information?**

Genetic ☐

Epigenetic ☐

Proteins ☐

Metabolites ☐

Other (Please specify) ▼

Other (Please specify)

C28. **Does the study/project/activity collect data about skin parameters?**

Yes ☐

No ☐

C29. **Wich data was collected regarding skin parameters**

Skin examination ☐

RAST ☐

SPT ☐

Epicutane test ☐

Other (Please specify) ▼

Other (Please specify)

C30. **Does the study/project/activity collect data about respiratory/lung parameters?**

Yes ☐

No ☐

C31. **Wich data was collected regarding respiratory/lung parameters?**

Diary of lung symptoms ☐

Complement C3c in serum ☐

Spirometry ☐

Lung function test ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C32. **Specify regarding lung function test**

VFC ☐

FEV1 ☐

PEF ☐

MEF50 ☐

Bronchial hyperactivity ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C33. **Does the study/project/activity collect data about skeletal parameters?**

Yes ☐

No ☐

C34. **Wich data was collected regarding skeletal parameters?**

Osteocalcin ☐

Bone density ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C35. **Does the study/project/activity collect data regarding renal function parameters?**

Yes ☐

No ☐

C36. **Wich data was collected regarding renal function parameters?**

Urinary total protein ☐

Albumin ☐

Alpha-1-microglobuline ☐

Urinary β2-microglobulin ☐

HMW- and LMW-proteins ☐

Creatinine value ☐

Retinol binding protein ☐

NAG in urine ☐

8-ALA ☐

Other (Please specify) ▼

Other (Please specify)

C37. **Does the study/project/activity collect data regarding reproductive and/or development system parameters?**

Yes ☐

No ☐

C38. **Sexual maturation and function**

Testicular volume in boys ☐

Age at menarche in girls ☐

Puberty stage (Marshall-Tanner) ☐

Sex hormones ☐

Thyroid hormones ☐

Libido ☐

Semen analysis ☐

Other (Please specify) ▼

Other (Please specify)

C39. **Pregnancy & lactation**

Milk Quantity/Quality ☐

Thyroid markers ☐

Other (Please specify) ▼

Other (Please specify)

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C40. **Newborn**

Birth weight ☐

APGAR score ☐

Digit ratio ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C41. **Development**

Griffith's testing ☐

Neuropathological parameters ☐

Neuropsychological parameters ☐

Neurophysiological parameters ☐

Growth retardation ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C42. **Does the study/project/activity collect data regarding immunity?**

Yes ☐

No ☐

C43. **Wich data was collected regarding immunity?**

Immune system effects ☐

Innate Immunity activity ☐

Acquired Immunity activity - Humoral ☐

Acquired Immunity activity - Cell mediated ☐

Acquired Immunity activity - Clinical expressions ☐

C44. **Wich data was collected regarding humoral immunity?**

IgM ☐

Antigen specific ☐

Cytokine release/activity ☐

Co-receptors ☐

Other (Please specify) ▼

Other (Please specify)

C45. **Wich data was collected regarding cell-mediated immunity?**

T cell response ☐

Other (Please specify) ▼

Other (Please specify)

C46. **Wich data was collected regarding clinical expressions immunity?**

Sensitivity ☐

Allergic reaction ☐

Other (Please specify) ▼

Other (Please specify)

C47. **Does the study/project/activity collect data regarding neurological parameters?**

Yes ☐

No ☐

C48. **Morphological**

Neuropathological ☐

Gross anatomical ☐

Immunocytochemical ☐

Other (Please specify) ▼

Other (Please specify)

C49. **Physiological and biochemical**

BrainStem Response Audiometry ☐

EEG ☐

Brain mapping ☐

Neurotransmitters ☐

Cell integrity ☐

Enzyme/Protein activity ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C50. **Behavioural and other neurological assessments**

Neurological Evaluation Scale (NES) tests ☐

Neuropsychological evaluation ☐

Neuro-cognitive development ☐

Motor development ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

C51. **Does the study/project/activity collect data regarding essential trace elements?**

Yes ☐

No ☐

C52. **Wich data was collected regarding essential trace elements?**

K ☐

Na ☐

Ca ☐

Mg ☐

Cu ☐

Zn ☐

Fe ☐

Mn ☐

Other (Please specify) ▼

Other (Please specify)

C53. **Does the study/project/activity collect anthropometric data? (Not subjective data but objectively measured, instead)**

Yes ☐

No ☐

C54. **Wich data was collected regarding anthropometric data?**

Height ☐

Weight ☐

Waist ☐

Hip ☐

Skin fold ☐

Other (Please specify) ▼

Other (Please specify)

C55. **Does the study/project/activity collect data regarding other biomarkers or physiological indicators?**

Yes ☐

No ☐

C56. **Wich data was collected regarding biomarkers or physiological indicators?**

Oxidative damage ☐

Blood pressure ☐

Heart rate ☐

Status of the thyroid gland ☐

Glucose tolerance ☐

Fasting glycaemia ☐

Glycated haemoglobin ☐

Immunophenotyping ☐

HDL cholesterol ☐

LDL cholesterol ☐

Total cholesterol	☐
Serum triglycerides	☐
Bone density	☐
Iron status	☐
Vitamin levels	☐
Haematocrit	☐
Specific metabolising genes	☐
Haemoglobin	☐
Growth factors	☐
Hearing assessment	☐
Visual accuracy	☐
Other (Please specify)	▼

Other (Please specify)

C57. Individual recruitment procedure

Please describe the individual recruitment procedure (e.g.: Invitation letter, reminder letter, confirmation letter, sending of sample vessels, personal visit for interview)

Section D: 4. OTHER DATA

Please indicate (checking <u>all</u> that apply) items such as outdoor pollution, climate, etc., addressed within this HBM study/project/activity.**ENVIRONMENTAL DATA**
LIFESTYLE
 HEALTH/DISEASES RELATED DATA
PARENTAL EXPOSURE
MEDICATION
SOCIO-ECONOMIC FACTORS

D1.   Does the study/project/activity collect data about outdoor pollution?

Yes	☐
No	☐

D2.   Air pollutants

Amount of reactive oxygen species	☐

Transition metal content ☐

LPS content ☐

Biological pollutants ☐

PM 2,5 ☐

PM 10 ☐

Black smoke ☐

NO2 ☐

NOx ☐

SO2 ☐

Carbon monoxide (CO) ☐

Ozone (O3) ☐

Benzene ☐

Toluene ☐

Xylenes ☐

Pesticides ☐

Biocides ☐

Other (Please specify) ▼

Other (Please specify)

D3. **Which data was collected regarding biological pollutants?**

Mould spores ☐

Pollen ☐

Other (Please specify) ▼

Other (Please specify)

D4. **Airborne nanoparticle identification**

Trace elements / minerals ☐

Other (Please specify) ▼

Other (Please specify)

D5. **Which data was collected regarding trace elements?**

Arsenic ☐

Boron ☐

Bronze ☐

Cadmium ☐

Chromium ☐

Copper ☐

Iron ☐

Lead ☐

Magnesium ☐

Phosphorus ☐

Selenium ☐

Zinc ☐

Other (Please specify) ▼

Other (Please specify)

D6. **Soil pollution**

Metals (Please specify): ☐

Biocides (Please specify): ☐

Pesticides (Please specify): ☐

Other (Please specify) ☐

D7. **Environmental noise exposure**

Yes ☐

No ☐

D8. **Ratio of heavy metals assessment in:**

Plants ☐

Water ☐

Wild life ☐

Other (Please specify) ▼

Other (Please specify)

D9. **Does the study/project/activity collect data about climate?**

Yes ☐

No ☐

D10. **Which data was collected regarding outdoor climate?**

Temperature (maximum, minimum, …) ☐

Humidity ☐

Pressure ☐

Precipitation ☐

Cloudiness ☐

Sun exposure ☐

Snow fall (depth of snow on the ground) ☐

Frost ☐

Wind chill ☐

Other (Please specify) ▼

Other (Please specify)

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D11. **Does the study/project/activity collect general information on residence?**

Yes ☐

No ☐

D12. **Which data was collected regarding general information on residence?**

Address ☐

Place of residence ☐

Number of years living in this residence ☐

Number of hours in the residence (working days) ☐

Number of persons living in the household ☐

Number of siblings ☐

Year of construction of the building ☐

Urban/rural ☐

Pollution sources near residence ☐

Other (Please specify) ▼

Other (Please specify)

D13. **Does the study/project/activity collect data about indoor parameters?**

Yes ☐

No ☐

D14. **Housing characteristics**

Type of dwelling (e.g., apartment, house, …) ☐

Accommodation crowding (e.g., number of persons per bedroom) ☐

Heating appliances ☐

Cooking appliances ☐

Ventilation ☐

Ceiling covering ☐

Wall covering ☐

Floor covering ☐

Indoor smoking ☐

Home dampness ☐

Pet ownership ☐

Garden belonging to the house ☐

Use of pesticides ☐

Use of biocides ☐

Other (Please specify) ▼

Other (Please specify)

D15. **Household drinking water parameters**

Aluminium ☐

Arsenic ☐

Barium ☐

Boron ☐

Cadmium ☐

Calcium ☐

Chloride ☐

Copper ☐

Iron ☐

Lead ☐

Magnesium ☐

Manganese ☐

Nickel ☐

Nitrate ☐

Phosphorus ☐

Potassium ☐

Selenium ☐

Sodium ☐

Strontium ☐

Sulphate ☐

Zinc ☐

Other (Please specify) ▼

Other (Please specify)

D16. **Household air quality**

Relative humidity ☐

Temperature ☐

PM 2.5 ☐

PM 10 ☐

NO ☐

NO2 ☐

NOx ☐

CO ☐

SO2 ☐

Carbonyl ☐

Fungal contamination ☐

Mould burden ☐

VOC ☐

MVOC ☐

PCBs ☐

Coarse particles ☐

Environmental tobacco smoke ☐

Other (Please specify) ▼

Other (Please specify)

D17. **House dust**

Mite levels ☐

Mould spores ☐

Fungal contamination ☐

Pentachlorphenol ☐

Pyrethroides ☐

Dust from vacuum cleaner ☐

Deposited dust in the household ☐

Other (Please specify) ▼

Other (Please specify)

D18. **Which data was collected regarding dust from vacuum cleaner**

Biocides / pesticides ☐

Plasticisers ☐

Metals ☐

Other (Please specify) ▼

Other (Please specify)

D19. **Which data was collected regarding deposited dust in the household?**

Biocides / pesticides ☐

Plasticisers ☐

Metals ☐

Other (Please specify) ▼

Other (Please specify)

D20. **Does the study/project/activity collect data about food intake / food habits?**

Yes ☐

No ☐

D21. **Type of food habits' assessment method**

24h recall ☐

Total diet register ☐

Observation ☐

Food Frequency Questionnaire (FFQ) ☐

Other method of assessment (Please specify) ▼

Other method of assessment (Please specify)

D22. **Frequency of consumption of food produced locally**

Yes ☐

No ☐

D23. **Does the study/project/activity collect data about traffic exposure or mobility?**

Yes ☐

No ☐

D24. **Which data was collected regarding about traffic exposure or mobility?**

Time spent in traffic ☐

Near road exposure ☐

Other (Please specify) ▼

Other (Please specify)

D25. **Does the study/project/activity collect data about participants' personal hygiene?**

Yes ☐

No ☐

D26. **Which data was collected regarding the participants' personal hygiene?**

Oral hygiene ☐

Frequency of washing hands ☐

Frequency of shower ☐

Use of cosmetics ☐

Use of tanning beds ☐

Other (Please specify) ▼

Other (Please specify)

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D27. **Does the study/project/activity collect data about smoking habits?**

Yes ☐

No ☐

D28. **Smoker**

Active smoker ☐

Former smoker ☐

Starting age ☐

Amount ☐

Frequency ☐

Smoking during pregnancy ☐

Measurement of nicotine metabolites (e.g., cotinine) ☐

Other (Please specify) ▼

Other (Please specify)

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D29. **Non-smoker**

Yes ☐

No ☐

D30. **Passive smoking**

Active smokers in the family ☐

Active smokers at working place ☐

Daily Average duration of exposure ☐

Other (Please specify) ▼

Other (Please specify)

D31. **Does the study/project/activity collect data about dental status?**

Yes ☐

No ☐

D32. **Teeth decay's prevention or treatment**

Teeth sealants use ☐

Teeth sealants use ☐

Amalgam fillings ☐

Amalgam fillings ☐

Crowns ☐

Crowns ☐

Use of braces ☐

Use of braces ☐

Other (Please specify) ▼

Other (Please specify)

D33. **Does the study/project/activity collect data about clothing / body adornments?**

Yes ☐

No ☐

D34. **Clothing / body adornments**

Leather clothing ☐

Piercing ☐

Tattoos ☐

Jewellery ☐

Other (Please specify) ▼

Other (Please specify)

D35. **Does the study/project/activity collect data about contact with toxic substances?**

Yes ☐

No ☐

D36. **Contact with toxic substances**

Where ☐

Type ☐

Frequency ☐

Duration ☐

Amount ☐

Other (Please specify) ▼

Other (Please specify)

D37. **Does the study/project/activity collect data about hobbies and holidays?**

Yes ☐

No ☐

D38. **Hobbies and holidays**

Time spent away from the place of residence ☐

History of holidays away from the city ☐

Time spent outdoors/indoors ☐

Hobbies ☐

Physical activity ☐

Other (Please specify) ▼

Other (Please specify)

D39. **Does the study/project/activity collect data about other lifestyle aspects?**

Yes ☐

No ☐

D40. **Which data was collected regarding other lifestyle aspects?**

D41. **Does the study/project/activity collect data about health care utilization?**

Yes ☐

No ☐

D42. **Health care utilization**

Doctors' visits ☐

Previous hospital admissions ☐

Other (Please specify) ▼

Other (Please specify)

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D43. **Does the study/project/activity collect data about family health-related history?**

Yes ☐

No ☐

D44. **Family members**

Grandparents ☐

Parents ☐

Siblings ☐

D45. **Other family members?**

Other than grandparents, parents or siblings

Please specify ☐

D46. **Regarding grandparents' health-related history wich information was collected**

Cystic fibrosis ☐

Phenylketonuria ☐

Tay-Sachs ☐

Albinism ☐

Thalassemia ☐

Malignancy ☐

Respiratory disease ☐

Allergies ☐

Cardiovascular diseases ☐

Diabetes ☐

Infectious diseases ☐

Neurodegenerative diseases ☐

Other (Please specify) ▼

Other (Please specify)

D47. **Regarding parents' health-related history, wich information was collected?**

Cystic fibrosis ☐

Phenylketonuria ☐

Tay-Sachs ☐

Albinism ☐

Thalassemia ☐

Malignancy ☐

Respiratory disease ☐

Allergies ☐

Cardiovascular diseases ☐

Diabetes ☐

Infectious diseases ☐

Neurodegenerative diseases ☐

Other (Please specify) ▼

Other (Please specify)

D48. **Regarding siblings' health-related history, wich information was collected?**

Cystic fibrosis ☐

Phenylketonuria ☐

Tay-Sachs ☐

Albinism ☐

Thalassemia ☐

Malignancy ☐

Respiratory disease ☐

Allergies ☐

Cardiovascular diseases ☐

Diabetes ☐

Infectious diseases ☐

Neurodegenerative diseases ☐

Other (Please specify) ▼

Other (Please specify)

D49. **Regarding other family members health-related history, wich information was collected?**

Cystic fibrosis ☐

Phenylketonuria ☐

Tay-Sachs ☐

Albinism ☐

Thalassemia ☐

Malignancy ☐

Respiratory disease ☐

Allergies ☐

Cardiovascular diseases ☐

Diabetes ☐

Infectious diseases ☐

Neurodegenerative diseases ☐

Other (Please specify) ▼

Other (Please specify)

D50. **Does the study/project/activity collect data about medical history of the participant?**

Yes ☐

No ☐

D51. **Regarding participants' health-related history, wich information was collected?**

Genetic disease ☐

Infectious disease ☐

Cardiovascular disease ☐

Respiratory disease ☐

Malignant disease ☐

Menstrual disorders ☐

Mental/psychiatric disorder ☐

Neurodegenerative disease ☐

Airway diseases ☐

Allergies ☐

Ear diseases ☐

Hearing problems ☐

Urinary infections ☐

Other renal disorders ☐

Auto-immune disorders ☐

Acute infections ☐

Cancer ☐

Reproductive/reproduction diseases/disorders ☐

Other

D52. Genetic disease

Cystic fibrosis ☐

Phenylketonuria ☐

Tay-Sachs ☐

Albinism ☐

Thalassemia ☐

Other (Please specify) ▼

Other (Please specify)

D53. Neurodegenerative disease

Alzheimer's disease ☐

Parkinson's disease ☐

Huntington's disease ☐

Amyotrophic lateral sclerosis ☐

Other (Please specify) ▼

Other (Please specify)

D54. Airway diseases

Bronchitis ☐

Asthma ☐

COPD ☐

Other (Please specify) ▼

Other (Please specify)

D55. Allergies

Allergic rhinitis ☐

Atopic dermatitis ☐

Eczema	☐
Hay fever	☐
Other (Please specify)	▼

Other (Please specify)

D56. **Does the study/project/activity collect data about specific stages of life?**

Yes	☐
No	☐

D57. **Which data was collected regarding specific stages of life?**

Newborn disorders	☐
Perinatal problems	☐
Low birth weight	☐
APGAR score	☐
Congenital malformations	☐
Infant or childhood development disorders	☐
Gestational age	☐
Conception difficulties	☐
Miscarriage	☐
Induced abortion	☐
Foetal death	☐
Labour complications	☐
Premature rupture of membranes	☐
Other pregnancy complications (Please specify)	☐
Premenopause-related data	☐
Menopause-related data	☐
Postmenopause related data	☐

D58. **Does the study/project/activity collect data about pregnancy or delivery?**

Yes	☐
No	☐

D59. **Which data was collected regarding pregnancy or delivery?**

Health before and during pregnancy ☐

Health before and during birth ☐

Maternal smoking ☐

Medication ☐

Duration of pregnancy ☐

Parity ☐

Previous voluntary abortions ☐

Previous miscarriages ☐

Twins ☐

Foetal ultrasound ☐

Follow-up after delivery ☐

Other (Please specify) ▼

Other (Please specify)

D60. **Which data was collected regarding foetal ultrasound?**

Body proportions ☐

Placental function ☐

Organ development (brain, heart, kidney, …) ☐

Other (Please specify) ▼

Other (Please specify)

D61. **Does the study/project/activity collect data about new born / infant biometry/health?**

Yes ☐

No ☐

D62. **Which data was collected regarding new born / infant biometry/health?**

Sex ☐

Weight ☐

Length ☐

Health status ☐

APGAR score ☐

Perinatal complications ☐

Neonatal respiratory problems ☐

Birth defects ☐

Hospital admissions ☐

Medication ☐

Other (Please specify) ▼

Other (Please specify)

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D63. Please specify the moment of measurement of the APGAR score

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D64. Which data was collected regarding birth defects?

Urogenital ☐

Heart ☐

Kidneys ☐

Other (Please specify) ▼

Other (Please specify)

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D65. Does the study/project/activity collect data about unspecified health complaints?

Yes ☐

No ☐

D66. Which data was collected regarding unspecified health complaints?

Headache ☐

Wheezing ☐

Deficiency of concentration ☐

Absence of appetite ☐

Menstrual disorders ☐

Other (Please specify) ▼

Other (Please specify)

D67. **Does the study/project/activity collect data about accidents?**

Yes ☐

No ☐

D68. **Which data was collected regarding accidents?**

Leisure ☐

Domestic ☐

Occupational ☐

Other (Please specify) ▼

Other (Please specify)

D69. **Does the study/project/activity collect data about exposure during pregnancy and/or breastfeeding?**

Yes ☐

No ☐

D70. **Which data was collected regarding the periconceptional period?**

Parental medication ☐

Other (Please specify) ▼

Other (Please specify)

D71. **Which data was collected regarding pregnancy and delivery?**

Alcohol use during pregnancy ☐

Smoking during pregnancy ☐

Medication during pregnancy ☐

Medication during delivery ☐

Other (Please specify) ▼

Other (Please specify)

D72. **Which data was collected regarding breastfeeding?**

Duration of breastfeeding ☐

Alcohol use during breastfeeding ☐

Smoking during breastfeeding ☐

Medication during breastfeeding ☐

Other (Please specify) ▼

Other (Please specify)

D73. **Does the study/project/activity collect data about occupational exposure?**

Yes ☐

No ☐

D74. **Which data was collected regarding occupational exposure?**

Mother ☐

Father ☐

Other family member ☐

Occupational exposure to Phthalates / DINCH ☐

Occupational exposure to Bisphenols ☐

Occupational exposure to Per-/Polyfluorinated compounds ☐

Occupational exposure to Flame Retardants ☐

Occupational exposure to Cadmium ☐

Occupational exposure to Chromium VI ☐

Occupational exposure to PAHs ☐

Occupational exposure to Anilin family: Anilines, MOCA ☐

Occupational exposure to Chemicals mixtures ☐

Occupational exposure to Emerging chemicals ☐

Other (Please specify) ▼

Other (Please specify)

D75. **Does the study/project/activity collect data about other types of exposure?**

Yes ☐

No ☐

D76. **Parental smoking**

Number of cigarettes, cigars or pipes smoked in the house

Parental smoking (Number of cigarettes, cigars or pipes smoked in the house) ☐

X-ray exposure ☐

Other (Please specify) ▼

Other (Please specify)

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D77. **Does the study/project/activity collect data about medication during pregnancy, delivery or breastfeeding?**

Yes ☐

No ☐

D78. **Medication during pregnancy**

Vitamins ☐

Minerals ☐

Preparations for immunity ☐

Other (Please specify) ▼

Other (Please specify)

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D79. **Medication during delivery**

Yes ☐

No ☐

D80. **Medication during breastfeeding**

Yes ☐

No ☐

D81. **Other** *(Please specify)*

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D82. **Does the study/project/activity collect data about medication administered to or taken by children or adolescents?**

Yes ☐

No ☐

D83. **Which data was collected regarding medication administered to or taken by children or adolescents?**

History of medication of child ☐

Antibiotics by the infant ☐

Antibiotics by the child ☐

Drug use of the adolescent ☐

Other (Please specify) ▼

Other (Please specify)

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D84. **Does the study/project/activity collect data about permanent or acute medication for respiratory or allergic diseases?**

Yes ☐

No ☐

D85. **Which data was collected regarding permanent or acute medication for respiratory or allergic diseases?**

Asthma ☐

Allergic rhinitis ☐

Atopic dermatitis ☐

Other (Please specify) ▼

Other (Please specify)

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D86. **Does the study/project/activity collect data about socio-demographic and/or socio-economic factors?**

Yes ☐

No ☐

D87. **General socio-demographics**

Age ☐

Sex ☐

Country of birth ☐

Ethnic origin	☐
Area of residence	☐
Workplace area/address	☐
Other (Please specify)	▼

Other (Please specify)

D88. Family structure

Civil status	☐
Number of children	☐
Presence of extended family in the house	☐
Other (Please specify)	▼

Other (Please specify)

D89. Employment status and income

Profession	☐
Employment status	☐
Family income	☐
Other (Please specify)	▼

Other (Please specify)

D90. Education

Educational level of parents	☐
Educational level of children	☐
School achievements of child attending school	☐
Other (Please specify)	▼

Other (Please specify)

D91. Other socio-demographic and/or socio-economic

Social support	☐
Social network	☐

Leisure activities ☐

Other (Please specify) ▼

Other (Please specify)

D92. **OTHER DATA**

Please specify any additional data not covered in the above questions

Section E: 5. QUALITY CONTROL PROCEDURES

Please indicate (checking <u>all</u> that apply) the relevant procedures adopted for all the aspects of quality control addressed within this HBM study/project/activity.

Internal QA/QC
External QA/QC

National external Quality Assessment Schemes

E1. **Pre-analytical Quality Assurance/Quality Control (QA/QC)**

Standard Operating Procedures ☐

Trained fieldworkers ☐

Control of background contamination in the sampling material ☐

Control of the transport conditions ☐

Control of background contamination in the conservation material ☐

Identification/traceability of the samples ☐

Criteria for acceptation/rejection of the samples ☐

Use of field blanks ☐

Setting the conditions for sample storage ☐

Other (Please specify) ▼

Other (Please specify)

E2. **Identification of critical phases**

Quality control samples ☐

Blank matrix for calibration ☐

Pre-treatment of samples ☐

Analytical technique ☐

Reference materials ☐

Process control ☐

Instrument calibration ☐

Internal proficiency testing (blind samples) ☐

Reporting of analytical data ☐

Other (Please specify) ▼

Other (Please specify)

E3. **Quality control procedures - Internal quality control procedures**

Routine checking of equipment ☐

Routine calibration of equipment ☐

Routine checking of culture media ☐

Routine checking of water ☐

Routine checking of analytical reagents ☐

Blinded quality controls ☐

Other (Please specify) ▼

Other (Please specify)

E4. **Quality control procedures - Standard operating procedures**

Sample preparation ☐

Analytical methods ☐

Storage and retention of records and materials ☐

Other (Please specify) ▼

Other (Please specify)

E5. Wich data was collected regarding analytical methods?

Replication measures ☐

Methods validation ☐

Laboratory/Reagent blanks ☐

Use of reference materials ☐

Training according to detailed manual ☐

Use of standard laboratory / uniform methods ☐

Waste disposal ☐

Use of commercial standards of precision and accuracy ☐

Other (Please specify) ▼

Other (Please specify)

E6. Quality control procedures - Intra-laboratory tests

Sampling instruments ☐

Sample measurements ☐

E7. Quality control procedures - Other data collected

E8. Other inter / intra laboratory testing

Calibration according to manufacturer's instructions ☐

Inter-laboratory assessment for dioxin-activity ☐

Field duplicates ☐

Field blanks ☐

Field visits of supervisors ☐

Inter-laboratory quality control available for contracting analytical laboratories ☐

Other (Please specify) ▼

Other (Please specify)

E9. Round-robin test

PCB ☐

ttMA ☐

VOC ☐

Heavy metals ☐

Mould fungi ☐

Other (Please specify) ▼

Other (Please specify)

E10. Quality control programs

International institutions ☐

National institutions ☐

Proficiency tests ☐

Certified reference materials ☐

Duplicate analysis, through different methods ☐

Inter-laboratory comparison exercises ☐

External Quality Assurance Scheme ☐

Other (Please specify) ▼

Other (Please specify)

E11. Accreditation

Inspection of non-accredited laboratories ☐

Accredited laboratory ☐

Accredited for certain analysis ☐

E12. Type of accreditation

National ☐

ISO 17025 ☐

Other (Please specify) ▼

Other (Please specify)

E13. For wish analysis is the laboratory accredited?

Lead ☐

Cadmium ☐

Other (Please specify) ▼

Other (Please specify)

E14. **Certification**

Phthalates/DINCH ☐

Bisphenols ☐

Per-/Polyfluorinated compounds ☐

Flame Retardants. ☐

Cd, Cr ☐

PAHs ☐

Anilin family: Anilines, MOCA ☐

Chemicals mixtures ☐

Emerging chemicals ☐

Other (Please specify) ▼

Other (Please specify)

E15. **Specify other national external quality assessment schemes**

Section F: 6. DATA ANALYSIS

Please indicate (checking <u>all</u> that apply) the relevant procedures adopted for all the aspects of data analysis within this HBM study/project/activity.

F1. **Descriptive analysis**

Mean ☐

Median ☐

Percentiles ☐

Measures of dispersion ☐

Incidence and prevalence rates ☐

Other (Please specify) ▼

Other (Please specify)

F2. **Bivariate analysis**

Measures of association (coefficient of correlation, odds ratio, relative risk, …) ☐

Effect size estimation ☐

Other (Please specify) ▼

Other (Please specify)

F3. **Stratification procedures**

Comparison across areas ☐

Gender or age-groups stratification ☐

Socio-economic stratification ☐

Other (Please specify) ▼

Other (Please specify)

F4. **Geo-temporal analysis**

Yes ☐

No ☐

F5. **Survival analysis or repeated measures analysis**

Yes ☐

No ☐

F6. **Multivariate analysis**

Linear regression analysis ☐

Multiple logistic regression analysis ☐

Other (Please specify) ▼

Other (Please specify)

F7. **Other type of analyses (Please specify)**

Section G: 7. DATA PROTECTION, AVAILABILITY AND CONDITIONS OF ACCESS AND USE

Please indicate (checking <u>all</u> that apply) the conditions for data protection and availability of data and samples for this HBM study/project/activity.**DATA PROTECTION**
Methods to protect personal data
NON-BIOLOGICAL DATA - CONDITIONS OF ACCESS AND USE
BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE (for exposure research and/or effect biomarker identification)
BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE

G1.   **Nature of personal data**

Anonymous ☐

Pseudonymised ☐

Fully identifiable ☐

Other (Please specify) ▼

Other (Please specify)

G2.   **At data collection**

Coded questionnaires/forms ☐

Samples anonymised/pseudonymised ☐

Other (Please specify) ▼

Other (Please specify)

G3.   **At data storage**

Databases protection ☐

Deleted/destroyed at the end of the study ☐

G4.   **At data storage - databases protection**

1995 EC Data Protection ☐

National legislation ☐

Other (Please specify) ▼

Other (Please specify)

G5. **At data storage - Deleted/destroyed at the end of the study**

When? (Please specify)

G6. **Intellectual property rights**

Patents ☐

Data property ☐

Data available to other members of consortium ☐

Data available by request ☐

Other (Please specify) ▼

Other (Please specify)

G7. **Data access**

No access is possible ☐

Partial access to database ☐

Access to total database ☐

G8. **Please indicate the type of access**

Direct online access - Please indicate website ☐

By request - Please indicate how to apply the request ☐

G9. **Does the study/project/activity has biobanked samples?**

Yes ☐

No ☐

G10. **Type of biological samples / matrix**

Blood ☐

Blood erythrocytes ☐

Blood cells isolates (PMBC) ☐

Plasma ☐

Serum ☐

Saliva ☐

Buccal cell ☐

Nails ☐

DNA ☐

Cells lines	☐
12-hours overnight urine	☐
Urine (24h)	☐
Urine (spot sample - random)	☐
Urine (spot sample – first morning)	☐
Human milk	☐
Hair (chopped/lyophilised sample)	☐
Hair (complete locks)	☐
Fat/adipose tissue	☐
Placenta	☐
Umbilical cord blood	☐
Other	☐

G11. **Please specify the other biological sample mentioned above**

G12. **Please <u>download</u>, <u>fill out</u> and <u>upload</u> the excel sheet bellow and continue with the following questions.**

Click to download the excel sheet

Please fill out the excel with information regarding: sample type/matrix, number of available samples, type of supplement, type of sample container, volume of sample container, material of sample container, cleaning of sample tubes before use, sample labeling, storage duration and storage conditions.

You should provide information on those topics for <u>one substance per line</u>. For example, if you select blood on the first column of the first line, with should provide the rest of the information regarding that sample in the columns of the first line.

G13. **Access and use of biobanked samples**

No access at all	☐
Access (only for consultation) for other researchers/organizations	☐
Access and use for other researchers/organizations	☐

G14. **Access to analytical standards to detect biomarkers**

No access at all	☐
Access for other researchers/organizations	☐

G15.   Access and use of biomarkers and other parameters

*IPCheM : the Information Platform for Chemical Monitoring is a single access point at EU level for discovering chemical monitoring data
collections with one module containing HBM data*

No access at all ☐

Access for IPCheM* (only for consultation) ☐

Access (only for consultation) for other researchers/organizations ☐

Access and use for IPCheM ☐

Access and use for other researchers/organizations ☐

G16.   Aggregation level of data

Metadata ☐

Aggregated data (Please specify: by gender, age groups, population type, …) ☐

Filtered/generalized single measurement data with key parameters ☐

Single measurement data with additional relevant parameters ☐

G17.   Licence of use (Please specify)

*Please provide a description or a reference to the Licence (i.e. type of limitations, if any, to use the resource) adopted by data owner/provider to
use and re-use the data available*

G18.   Access conditions

Please summarise the restriction (if any) in data access (e.g. access restricted only to EY Commission and EU agencies, …)

G19.   Text for acknowledgement /disclaimer

Please specify a text for acknowledgement/disclaimer which should be reported when using the data

Section H: 8. COMMUNICATION

Please indicate (checking <u>all</u> that apply) communication elements of this HBM study/project/activity.

Reporting results to Public Authority, to general public, to scientific community
Public debate

H1. **Reporting results to Public Authority**

Yes ☐

No ☐

H2. **Please indicate the Public Autority(s) to whom the results where reported**

EU authorities - Please indicate frequency ☐

National authorities - Please indicate frequency ☐

Federal authorities - Please indicate frequency ☐

Local authorities - Please indicate frequency ☐

Other - Please specify and indicate frequency ☐

H3. **Reporting results to study participants**

Yes ☐

No ☐

H4. **Please indicate how results were reported to the study's participants**

Personalized Reports ☐

Individual results compared with health guideline values ☐

Participant referred to appropriate help if problem was identified ☐

Study findings presented to participants at targeted workshops ☐

Hotline ☐

Other (Please specify) ▼

Other (Please specify)

☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐☐

H5. **Reporting results to Health Institutions**

Yes ☐

No ☐

H6. **Please indicate the Health Institutions to whom the results where reported**

Health care centre ☐

Lactariums ☐

Maternity hospitals ☐

Involved hospitals ☐

Involved policlinics ☐

Other (Please specify) ▼

Other (Please specify)

H7. **Reporting results to scientific community**

Yes ☐

No ☐

H8. **Please indicate how the results were reported to the scientific community**

Published through report form ☐

Results published in book of proceedings ☐

Results presented in scientific posters ☐

Newsletters ☐

Scientific journals ☐

Seminars ☐

Scientific meetings ☐

Short scientific presentations ☐

Website ☐

Other (Please specify) ▼

Other (Please specify)

H9. **Please indicate the report form where the results were reported**

H10. Relevant publications (Pubmed and/or other scientific databases engines)

Please indicate a "www.pubmed.com" (or other scientific databases engine) link to some of the study/project/activity most relevant publications (if such exist) that covers health and HBM outcomes in a broadest sense

H11. Reporting results to general public

Yes ☐

No ☐

H12. Please indicate how the results were reported to the general public

H13. Occasional symposia part 1

Local symposia ☐

Technical meetings ☐

Focus group discussions ☐

Meeting in local inhabitants ☐

Public debate at the end of project ☐

Other (Please specify) ▼

Other (Please specify)

H14. Occasional symposia part 2 - Debates between different stakeholders

Kindergarten ☐

City representatives ☐

Scientific society ☐

Other (Please specify) ▼

Other (Please specify)

H15. **Occasional symposia part 3 - Media**

Summary report ☐

Institutional report ☐

Special report ☐

Press conferences ☐

Other (Please specify) ▼

Other (Please specify)

H16. **Consequences of external communication**

Public awareness ☐

Separation between research and policy ☐

Screening tests for segments of population ☐

Increase in visits to specialized MD ☐

Increase in visits to laboratories ☐

Legislation improved ☐

Statement from public authority ☐

Greater incentive to participate ☐

Clean-up of contaminated areas ☐

Other (Please specify) ▼

Other (Please specify)

H17. **Would you be willing to provide some examples of material used to communicate with the study participants?**

Yes ☐

No ☐

Section I: 9. OBSTACLES, SHORTCOMINGS AND DIFFICULTIES

Please indicate (checking all that apply) obstacles, shortcomings and difficulties faced in this HBM study/project/activity.

Difficulties in samples' collection

I1. **General constraints and difficulties**

Financial (Please specify) ☐

Human resources (Please specify) ☐

Legislation (Please specify) ☐

Laboratory (Please specify) ☐

Other (Please specify) ☐

I2. Collection of blood samples (Please specify)

Fear of pain (from participant) ☐

Concern about consequences (from participants' perspective) ☐

Time-demand (for participants) ☐

Non-interest (from participants) ☐

Other difficulty (Please specify) ▼

Other difficulty (Please specify)

I3. Collection of fat samples (Please specify)

Fear of pain (from participant) ☐

Concern about consequences (from participants' perspective) ☐

Time-demand (for participants) ☐

Non-interest (from participants) ☐

Other difficulty (Please specify) ▼

Other difficulty (Please specify)

I4. Physical examinations (Please specify)

Fear of pain (from participant) ☐

Concern about consequences (from participants' perspective) ☐

Time-demand (for participants) ☐

Non-interest (from participants) ☐

Other difficulty (Please specify) ▼

Other difficulty (Please specify)

I5. Other type of samples' collection (Please specify)

Fear of pain (from participant) ☐

Concern about consequences (from participants' perspective) ☐

Time-demand (for participants) ☐

Non-interest (from participants) ☐

Other difficulty (Please specify) ▼

Other difficulty (Please specify)

I6. Difficulties in recruitment of participants

Time-consuming ☐

High drop-out rate ☐

Low participation level ☐

Low response rate ☐

I7. Regarding low participation level please specify

For migrants ☐

For lower social classes ☐

For single working mothers ☐

For other group of participants (Please specify) ▼

For other group of participants (Please specify)

I8. Regarding low response rate please specify

Immigrants ☐

Lower social classes ☐

Single working mothers ☐

Other (Please specify) ▼

Other (Please specify)

I9. Which of the following strategies you consider to be relevant for increasing response rate

Focusing the sampling on groups with expected higher participation rate ☐

Use of new and more direct/personal means of approaching people ☐

Financial or other incentives ☐

Cooperation with other studies, with governmental bodies ☐

Participatory research ("citizen science") ☐

Recruitment bias (Please specify) ▼

Recruitment bias (Please specify)

I10. **Other identified problems**

Logistics ☐

Team leadership ☐

Burden of data collection ☐

Lack of international guidelines ☐

Lack of international standardisation ☐

Nomenclature problems ☐

High volume of collected information ☐

No access to data ☐

Other (Please specify) ▼

Other (Please specify)

I11. **Please specify the problems with logistics**

I12. **Please specify the problems with team leadership**

Section J: 10. ADDITIONAL INFORMATION

J1. **Please add any relevant information collected that was not covered by the questionnaire.**

Appendix 2

Questionnaire on occupational exposure

QUESTIONNAIRE ON OCCUPATIONAL EXPOSURE

Within the scope of the European Human Biomonitoring Initiative (HBM4EU) and the work that has been developed for **Work package 7 – Survey design and fieldwork preparation**, the **Universitá Degli Studi Di Napoli**, the **Constantine The Philosopher University In Nitra**, and the **Finnish Study of Occupational Health**, in collaboration with the **Faculty of Medicine of the University of Lisbon (FMUL)**, are creating an inventory of studies targeting occupational exposure for the following nine prioritised groups of substances:

1. Phthalates / DINCH
2. Bisphenols
3. Per- and Polyfluorinated compounds
4. Flame Retardants
5. Cadmium and Chromium VI
6. PAHs
7. Anilines (anilines and MOCA, or substitute anilines or amines)
8. Chemical mixtures
9. Emerging chemicals

Because you are, or have been, **actively involved in the fields (or related fields) of "Human biomonitoring" and "Occupational exposure" in your country/institution and in studies building the background of the HBM4EU project**, we would appreciate if you could provide us information on the existence and availability of data pertaining to work-related exposure.

We need to collect and analyse these data up till the end of April. Therefore, may we kindly invite you to complete the following form **no later than by April 10, 2017**.

We also ask you to **forward this form** (using the following link http://hbm4eu.info/) to all persons/institutions that are active in the field of "Human biomonitoring" and "Occupational exposure" in Europe.

Thank you for your collaboration!

1

Section 1   Proponent Institution/Organisation of the study

1.1 Name of the Institution/Organisation:

1.2 Nationality:

1.3 Type of the Institution/Organisation:

☐ Public   ☐ Private   ☐ University   ☐ Other

1.3.1 If other please specify

1.4 Brief description of the Institution/Organisation:

Section 2   Characteristics of data

2.1 Type of study (i.e. existing database, single study, other)

2.2 Time frame or years covered

2.3 Country and geographical area

2.4 Can this data be utilized for the purpose HBM4EU?

☐ Yes   ☐ No

2.5 What are the conditions for data use?

Next, if applicable, please give substance- specific answers from Section 3 to Section 6 or modify the Sections accordingly.

Section 3   Study population

Please give substance-specific answers when necessary.

3.1 Occupationally exposed subjects (please provide information on age, gender, …)

<div style="border:1px solid #000; height:110px;"></div>

3.2 Presence of control group

☐ Yes   ☐ No

3.3 Size of the sample (persons involved)

☐ 1-100   ☐ 301-400

☐ 101-200   ☐ 401-500

☐ 201-300   ☐ >500

3.3.1 Selection of participants

☐ The whole unit

☐ Random sample of the unit

☐ Volunteers of the unit

☐ Whole enterprise

☐ Random sample of the enterprise

☐ Volunteers of the enterprise

☐ Others

3.4 Presence of informed consent

☐ Yes   ☐ No

3.5 Additional comments

Section 4   Characteristics of the study population

Please give substance-specific answers when necessary.

4.1 The characteristics of the study population were obtained by means of:

☐ Face to face interview   ☐ Phone interview   ☐ Administered questionnaire

☐ Self-administered questionnaire   ☐ Other

4.1.1 If other please specify

4.2 In the case of face to face or phone interview and administered questionnaire the information were obtained by qualified and trained personnel?

☐ Yes   ☐ No

4.3 Collected samples

☐ Urine

☐ Blood

☐ Air

☐ Other

4.3.1 If other please specify

4.4 Availability of data related to:

Please give substance-specific answers when necessary.

4.4.1	Age	☐ Yes	☐ No
4.4.2	Sex	☐ Yes	☐ No
4.4.3	Socioeconomic status	☐ Yes	☐ No

4.4.4	Home location and related characteristics	☐ Yes	☐ No
	4.4.4.1 Urban or rural	☐ Yes	☐ No
	4.4.4.2 Industrial plants, incinerators or landfill sites in the surroundings of house	☐ Yes	☐ No
	4.4.4.3 Vehicular Traffic Density	☐ Yes	☐ No
4.4.5	Presence of prosthesis or dental alloys	☐ Yes	☐ No
4.4.6	Smoking status	☐ Yes	☐ No
4.4.7	Alcohol consumption	☐ Yes	☐ No
4.4.8	Coffee consumption	☐ Yes	☐ No
4.4.9	Dietary habits (mixed, vegetarian, vegan)	☐ Yes	☐ No
4.4.10	Physical exercise	☐ Yes	☐ No
4.4.11	Use of pharmaceuticals	☐ Yes	☐ No
4.4.12	Recreational activities or hobbies	☐ Yes	☐ No
4.4.13	Health information from physicians	☐ Yes	☐ No

4.5 Additional comments

Section 5   Occupational exposures

Please give substance-specific answers when necessary.

5.1 Type of industry (i.e. chemical, construction, pharmaceutical, cosmetics, health care, other)

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5.2 NACE Classifications

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5.3 Brief description of working cycle and chemicals/substances produced, used or handled:

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5.4 Availability of data related to:

5.4.1 Working tasks/activities performed by subjects enrolled in the study	☐ Yes	☐ No
5.4.2 Length of work shift	☐ Yes	☐ No
5.4.3 Type of work shifts (i.e. fixed or rotational)	☐ Yes	☐ No
5.4.4 Occupational history	☐ Yes	☐ No
5.4.5 Use of personal protective equipment	☐ Yes	☐ No
5.4.6 Environmental monitoring (air samples from workplace)	☐ Yes	☐ No
5.4.7 Working time (years) in current position	☐ Yes	☐ No

5.5 Additional comments

Section 6   HBM data

Please give substance-specific answers when necessary.

6.1 Type of biological sample

6.2 Investigated chemicals

6.3 Investigated metabolites

6.4 Analytical method:

6.5 Time of sampling (i.e. pre-shift, end-shift, end-shift end week, other)

6.6 At the time of sampling how much time has elapsed since the last supposed exposure (end of the shift)?

☐ < 6h   ☐ 6-12h   ☐ 12-18h   ☐ 18-24h   ☐ 24-48h   ☐ > 48h

6.7 Date of sampling (dd-mm-yyyy)

6.8 Additional comments

7.1 Institute

7.2 Chemical

7.3 Metabolite

7.4 Analysis method

7.5 Do you have access to the data (can it be utilized for the purpose HBM4EU)?

☐ Yes   ☐ No

7.6 Does the data set include contextual data?

☐ Yes   ☐ No

7.7 Additional comments

Thank you for your collaboration!

Appendix 3

Statistical analysis plan for the data gathered with the main questionnaire

STATISTICAL ANALYSIS PLAN

~ Questionnaire on existing HBM surveys ~

This document summarizes the plan for the statistical analysis of the data collected with the questionnaire on existing HBM surveys developed for Work package 7 – Survey design and fieldwork preparation. This questionnaire aimed to map concluded (within last 10 years), ongoing or planned (for starting up within the next five years) studies, projects and activities related to the nine prioritised substances. The main goal is to identify data gaps (including spatial and temporal gaps).

In the following table, the strategy for reporting univariate statistics is discussed for each variable. Besides the aggregated report, variables that will allow the characterization of the surveys will be available in Access format. Like that, it will be possible to consult all necessary descriptive details per study, project or activity, with an easy-to-navigate form of variables selection.

The table is structured in five columns:

· Variable name: The name of the variable in the database

· Label: The description of the variable (correspondes to the label of each variable on the databases

· Question: The original question that appeared in the questionnaire

· Values and codes: The options each variable can assume in the databases

· Analysis: The planned statistical analysis to follow for each variable

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
id	Response ID			
submitdate	Date of submission			
1. GENERAL INFORMATION				
q1.1.name	Name of the study/project/activity	**Identification of HBM study/project/activity name**		
q1.1.acronym	Acronym of the study/project/activity			
q1.2.1	Study/project/activity type: Research project	**Human biomonitoring (HBM) type**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q1.2.2	Study/project/activity type: Surveillance/monitoring project			
q1.2.3	Study/project/activity type: Policy / Legislation			
q1.2.4	Study/project/activity type: Development of tools / guidelines / training materials			
q1.2.5	Study/project/activity type: Quality Control / Quality Assurance			
q1.2.6	Study/project/activity type: Improving Health Services delivery infrastructure			
q1.2.7	Study/project/activity type: Health promotion			
q1.2.other	Study/project/activity type: Other			
q1.3.1	Implementation level of the study/project/activity: International	**Study/project/activity implementation level**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q1.3.2	Implementation level of the study/project/activity: National			
q1.3.3	Implementation level of the study/project/activity: Regional (province, county, etc.)			

Variable name	Label	Question	Values and codes	Analysis
q1.3.other	Implementation level of the study/project/activity: Other			
q1.4.1	Country/countries of data collection: Austria	**Country/countries where data were/are/will be collected**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. The variable representing the open category "other" will be recoded into extra values and analysed apart (descriptive analysis – frequency table)
q1.4.2	Country/countries of data collection: Belgium			
q1.4.3	Country/countries of data collection: Bulgaria			
q1.4.4	Country/countries of data collection: Croatia			
q1.4.5	Country/countries of data collection: Cyprus			
q1.4.6	Country/countries of data collection: Czech Republic			
q1.4.7	Country/countries of data collection: Denmark			
q1.4.8	Country/countries of data collection: Estonia			
q1.4.9	Country/countries of data collection: Finland			
q1.4.10	Country/countries of data collection: France			
q1.4.11	Country/countries of data collection: Germany			
q1.4.12	Country/countries of data collection: Greece			
q1.4.13	Country/countries of data collection: Hungary			
q1.4.14	Country/countries of data collection: Ireland			
q1.4.15	Country/countries of data collection: Italy			
q1.4.16	Country/countries of data collection: Latvia			
q1.4.17	Country/countries of data collection: Lithuania			
q1.4.18	Country/countries of data collection: Luxembourg			

Variable name	Label	Question	Values and codes	Analysis
q1.4.19	Country/countries of data collection: Malta			
q1.4.20	Country/countries of data collection: Netherlands			
q1.4.21	Country/countries of data collection: Poland			
q1.4.22	Country/countries of data collection: Portugal			
q1.4.23	Country/countries of data collection: Romania			
q1.4.24	Country/countries of data collection: Slovakia			
q1.4.25	Country/countries of data collection: Slovenia			
q1.4.26	Country/countries of data collection: Spain			
q1.4.27	Country/countries of data collection: Sweden			
q1.4.28	Country/countries of data collection: United Kingdom			
q1.4.other	Country/countries of data collection: Other			
q1.5.1	Language of data collection	Language of data collection	1 – Dutch 2 – English 3 – French 4 – German 5 – Italian 6 – Portuguese 7 – Spanish 8 – Other	For this single-answer format question, a frequency table will be produced. Open category will be recoded into extra values
q1.5.other	Language of data collection: Other			
q1.6.name	Name of the institution responsible for the study/project/activity implementation	Institution responsible for the study/project/activity implementation		
q1.6.acronym	Acronym of the institution responsible for the study/project/activity implementation			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q1.6.country	Country of the institution responsible for the study/project/activity implementation			
q1.7.1	Type of the institution responsible for the study/project/activity implementation	**Type of the Institution**	1 – Public 2 – Private 3 – Other	For this single-answer format question, a frequency table will be produced
q1.7.other	Type of the institution responsible for the study/project/activity implementation: Other			Open category will be recoded into extra values.
q1.8	Type of public institution	**What type of public institution?**	1 – University 2 – Other type of public institution	For this single-answer format question, a frequency table will be produced
q1.9	Name of the Principal Investigator	**Name of the Principal Investigator**		
q1.10.1.name	Name of the contact person 1	**Contact person 1**		
q1.10.1.affiliation	Affiliation of the contact person 1			
q1.10.1.address	Address of the contact person 1			
q1.10.1.phone	Phone of the contact person 1			
q1.10.1.email	Email of the contact person 1			
q1.10.2	Do you wish to add another contact person?	**Do you wish to add another contact person?**	No – 0 Yes – 1	
q1.10.3.name	Name of the contact person 2	**Contact person 2**		
q1.10.3.affiliation	Affiliation of the contact person 2			
q1.10-3.address	Address of the contact person 2			
q1.10.3.phone	Phone of the contact person 2			
q1.10.3.email	Email of the contact person 2			
q1.10.4	Do you wish to add another contact person?	**Do you wish to add another contact person?**	No – 0 Yes – 1	

Variable name	Label	Question	Values and codes	Analysis
q1.10.5.name	Name of the contact person 3	**Contact person 3**		
q1.10.5.affiliation	Affiliation of the contact person 3			
q1.10.5.address	Address of the contact person 3			
q1.10.5.phone	Phone of the contact person 3			
q1.10.5.email	Email of the contact person 3			
q1.11.1.name	Name of other institution(s) involved 1	**Other institution(s) involved 1**		
q1.11.1.acronym	Acronym of other institution(s) involved 1			
q1.11.1.country	Country of other institution(s) involved 1			
q1.11.2	Do you wish to add another institution?	**Do you wish to add another institution?**	No – 0 Yes – 1	
q1.11.3.name	Name of other institution(s) involved 2	**Other institution(s) involved 2**		
q1.11.3.acronym	Acronym of other institution(s) involved 2			
q1.11.3.country	Country of other institution(s) involved 2			
q1.11.4	Do you wish to add another institution?	**Do you wish to add another institution?**	No – 0 Yes – 1	
q1.11.5.name	Name of other institution(s) involved 3	**Other institution(s) involved 3**		
q1.11.5.acronym	Acronym of other institution(s) involved 3			
q1.11.5.country	Country of other institution(s) involved 3			
q1.11.6	Do you wish to add another institution?	**Do you wish to add another institution?**	No – 0 Yes – 1	
q1.11.7.name	Name of other institution(s) involved 4	**Other institution(s) involved 4**		
q1.11.7.acronym	Acronym of other institution(s) involved 4			
q1.11.7.country	Country of other institution(s) involved 4			

Variable name	Label	Question	Values and codes	Analysis
q1.11.8	Do you wish to add another institution?	Do you wish to add another institution?	No – 0 Yes – 1	
q1.11.9.name	Name of other institution(s) involved 5	Other institution(s) involved 5		
q1.11.9.acronym	Acronym of other institution(s) involved 5			
q1.11.9.country	Country of other institution(s) involved 5			
q1.12.1	General objectives of the study/project/activity	General objectives of the study/project/activity		
q1.12.2	HBM specific related-objectives of the study/project/activity	HBM specific related-objectives of the study/project/activity		
q1.13	Status of the study/project/activity	Status	1 – Concluded (within the last 10 years) 2 – Initiated/ongoing 3 – Planned (for starting within the next 5 years)	For this single-answer format question, a frequency table will be produced
q1.14	Beginning (or previewed starting) date of the study/project/activity	Beginning (or previewed starting) date of the study/project/activity		
q1.15	(Previewed) Ending date of the study/project/activity	(Previewed) Ending date of the study/project/activity		
q1.16	Budget of the project/study/activity (to the nearest thousand Euros)	Budget of the project/study/activity		Budget values will be recoded into intervals and reported in a frequency table. Also, descriptives will be reported (mean, median, standard deviation)
q1.17.1.nameacronym	Name (and acronym) of the entity which funded the study/project/activity 1	Name (and acronym, if any) of the entity/entities who funded the study/project/activity		
q1.17.2.nameacronym	Name (and acronym) of the entity which funded the study/project/activity 2			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q1.17.3.nameacronym	Name (and acronym) of the entity which funded the study/project/activity 3			
q1.17.4.nameacronym	Name (and acronym) of the entity which funded the study/project/activity 4			
q1.17.5.nameacronym	Name (and acronym) of the entity which funded the study/project/activity 5			
q1.18	Ethical approval of the study/project/activity	**Ethical approval**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q1.18.1	Ethical approval by whom: Institutional policy			
q1.18.2	Ethical approval by whom: Ethics committee	**By whom?**		
q1.18.3	Ethical approval by whom: Deontology committee			
q1.18.other	Ethical approval by whom: Other			
q1.18.name	Name of the contact person for ethic documents			
q1.18.affiliation	Affiliation of the contact person for ethic documents	**Please insert information of the contact person for ethic documents**		
q1.18.address	Address of the contact person for ethic documents			
q1.18.phone	Phone of the contact person for ethic documents			
q1.18.email	Email of the contact person for ethic documents			
q1.19.link	Internet link with information about data collection tools	**Internet link with information about data collection tools**		
2. DESCRIPTION OF THE TARGET POPULATION AND METHOD OF SELECTION OF PARTICIPANTS				

Variable name	Label	Question	Values and codes	Analysis
q2.1.1	Study design	**Study design**	1 – Cross-sectional survey 2 – Case-control 3 – Longitudinal (cohort) 4 – Other	For this question, a frequency table will be produced. Open category will be recoded into extra values
q2.1.other	Study design: Other			
q2.2.1	Type of target population	**Type of target population**	1 – General population (non-clinical population) 2 – Clinical population 3 – Other	For this question, a frequency table will be produced. Open category will be recoded into extra values
q2.2.other	Type of target population: Other			
q2.3.1.1	Target groups and sample size(s): Children - Lower limit of age	**Children**		Age values will be recoded into age intervals and a frequency table will be produced. Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.3.1.2	Target groups and sample size(s): Children - Upper limit of age			
q2.3.1.3	Target groups and sample size(s): Children - Sample size/number of participants			
q2.3.2.1	Target groups and sample size(s): Adolescents - Lower limit of age	**Adolescents**		Age values will be recoded into age intervals and a frequency table will be produced. Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.3.2.2	Target groups and sample size(s): Adolescents - Upper limit of age			
q2.3.2.3	Target groups and sample size(s): Adolescents - Sample size/number of participants			
q2.3.3.1	Target groups and sample size(s): Mother-newborn pairs - Lower limit of mother's age	**Mother-newborn pairs**		Age values will be recoded into age intervals and a frequency table will be produced.
q2.3.3.2	Target groups and sample size(s): Mother-			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	newborn pairs - Upper limit of mother's age			Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.3.3.3	Target groups and sample size(s): Mother-newborn pairs - Lower limit of newborn's age			
q2.3.3.4	Target groups and sample size(s): Mother-newborn pairs - Upper limit of newborn's age			
q2.3.3.5	Target groups and sample size(s): Mother-newborn pairs - Number of mothers in the group			
q2.3.3.6	Target groups and sample size(s): Mother-newborn pairs - Number of pairs in the group			
q2.3.4.1	Target groups and sample size(s): Adults - Lower limit of age	**Adults**		Age values will be recoded into age intervals and a frequency table will be produced. Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.3.4.2	Target groups and sample size(s): Adults - Upper limit of age			
q2.3.4.3	Target groups and sample size(s): Adults - Sample size/number of participants			
q2.3.5.1	Target groups and sample size(s): Elderly - Lower limit of age	**Elderly**		Age values will be recoded into age intervals and a frequency table will be produced. Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.3.5.2	Target groups and sample size(s): Elderly - Upper limit of age			
q2.3.5.3	Target groups and sample size(s): Elderly - Sample size/number of participants			
q2.3.6.1	Target groups and sample size(s): Other specific population?	**Other specific population? (smokers, workers,**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

Variable name	Label	Question	Values and codes	Analysis
q2.3.6.2.other	Target groups and sample size(s): Which other specific population?	disabled, …)		Open anwers concerning "other specific population" will be recoded (content analysis) and reported in a frequency table.
q2.3.6.3	Target groups and sample size(s): Other specific population - Lower limit of age			
q2.3.6.4	Target groups and sample size(s): Other specific population - Upper limit of age			Age values will be recoded into age intervals and a frequency table will be produced.
q2.3.6.5	Target groups and sample size(s): Other specific population - Sample size/number of participants			Regarding sample size, descriptives will be reported (mean, median and standard deviation), as well as frequency of recorded sample intervals
q2.4	Gender of the participants	**Gender of the participants**	1 – Women 2 – Men 3 – Both	For this single-answer format question, a frequency table will be produced
q2.5.1.1	Inclusion criteria: Gender	**Gender**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.5.1.description	Inclusion criteria: Gender - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.5.2.1	Inclusion criteria: Age	**Age**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.5.2.description	Inclusion criteria: Age - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q2.5.3.1	Inclusion criteria: Geographical Unit	Geographical Unit (e.g., NUTS II)	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.5.3.description	Inclusion criteria: Geographical Unit - Description			
q2.5.4.1	Inclusion criteria: Health condition	Health condition	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.5.4.description	Inclusion criteria: Health condition - Description			
q2.5.5.1	Inclusion criteria: Specific exposure	Specific exposure	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.5.5.description	Inclusion criteria: Specific exposure - Description			
q2.5.6.1	Other inclusion criteria	Other inclusion criteria	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.5.6.description	Other inclusion criteria - Description			
q2.6.1.1	Exclusion criteria: Gender	Gender	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.6.1.description	Exclusion criteria: Gender - Description			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
				The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.6.2.1	Exclusion criteria: Age	**Age**	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.6.2.description	Exclusion criteria: Age - Description			
q2.6.3.1	Exclusion criteria: Geographical Unit	**Geographical Unit (e.g., NUTS II)**	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.6.3.description	Exclusion criteria: Geographical Unit – Description			
q2.6.4.1	Exclusion criteria: Health condition	**Health condition**	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.6.4.description	Exclusion criteria: Health condition - Description			
q2.6.5.1	Exclusion criteria: Specific exposure	**Specific exposure**	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and
q2.6.5.description	Exclusion criteria: Specific exposure - Description			

Variable name	Label	Question	Values and codes	Analysis
				frequencies will also be reported.
q2.6.6.1	Other exclusion criteria	Other exclusion criteria	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.6.6.description	Other exclusion criteria - Description			
q2.7	Presence of control group	Control group	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q2.8	Control group: Size	Size of the control group		For this question, sanple size values will be recoded into intervals and reported in a frequency table. Also, descriptives will be reported (mean, median and standard deviation)
q2.9.1.1	Control group: Inclusion criteria - Gender	Gender	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.9.1.description	Control group: Inclusion criteria - Gender - Description			
q2.9.2.1	Control group: Inclusion criteria - Age	Age	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.9.2.description	Control group: Inclusion criteria - Age - Description			
q2.9.3.1	Control group: Inclusion criteria - Geographical	Geographical Unit (e.g.,	No – 0	For this question, a frequency table will

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Unit	**NUTS II)**	Yes – 1	be produced.
q2.9.3.description	Control group: Inclusion criteria - Geographical Unit - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.9.4.1	Control group: Inclusion criteria - Health condition	**Health condition**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.9.4.description	Control group: Inclusion criteria - Health condition - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.9.5.1	Control group: Inclusion criteria - Specific exposure	**Specific exposure**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.9.5.description	Control group: Inclusion criteria - Specific exposure - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.9.6.1	Control group: Other inclusion criteria	**Other inclusion criteria**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.9.6.description	Control group: Other inclusion criteria - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.1.1	Control group: Exclusion criteria - Gender	**Gender**	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.10.1.description	Control group: Exclusion criteria - Gender - Description			The specification (open-answer

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
				component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.2.1	Control group: Exclusion criteria - Age	Age	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.10.2.description	Control group: Exclusion criteria - Age - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.3.1	Control group: Exclusion criteria - Geographical Unit	Geographical Unit (e.g., NUTS II)	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.10.3.description	Control group: Exclusion criteria - Geographical Unit - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.4.1	Control group: Exclusion criteria - Health condition	Health condition	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.10.4.description	Control group: Exclusion criteria - Health condition - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.5.1	Control group: Exclusion criteria - Specific exposure	Specific exposure	No – 0 Yes – 1	For this question, a frequency table will be produced.
q2.10.5.description	Control group: Exclusion criteria - Specific exposure - Description			The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q2.10.6.1	Control group: Other exclusion criteria	**Other exclusion criteria**	No – 0 Yes – 1	For this question, a frequency table will be produced. The specification (open-answer component of the question) will be analysed (content analysis) and frequencies will also be reported.
q2.10.6.description	Control group: Other exclusion criteria - Description			
q2.11.1	Sampling method: Random selection	**Sampling method**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q2.11.2	Sampling method: Convenience/intentional			
q2.11.3	Sampling method: Stratified			
q2.11.other	Sampling method: Other			
q2.12.description	Short description of sampling scheme	**Please provide a short description of the sampling scheme**		
q2.13.1	Recruitment/sampling frame (origin of participant addresses): Census data	**Recruitment/sampling frame (origin of participant addresses)**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q2.13.2	Recruitment/sampling frame (origin of participant addresses): Electoral register			
q2.13.3	Recruitment/sampling frame (origin of participant addresses): School (class) lists			
q2.13.4	Recruitment/sampling frame (origin of participant addresses): Health centre list			
q2.13.5	Recruitment/sampling frame (origin of participant addresses): Hospital patients list			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q2.13.6	Recruitment/sampling frame (origin of participant addresses): Health or other type of professionals' list			
q2.13.7	Recruitment/sampling frame (origin of participant addresses): Other type of population register			
q2.13.8	Recruitment/sampling frame (origin of participant addresses): Health archives			
q2.13.9	Recruitment/sampling frame (origin of participant addresses): Participants from another study			
q2.13.other	Recruitment/sampling frame (origin of participant addresses): Other			
q2.14.1	Recruitment contact: Through general practitioner (GP) doctors	**Recruitment contact**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q2.14.2	Recruitment contact: Through paediatricians			
q2.14.3	Recruitment contact: Through gynaecologists			
q2.14.4	Recruitment contact: Through other medical doctors			
q2.14.5	Recruitment contact: Through midwives			
q2.14.6	Recruitment contact: Through nurses			
q2.14.7	Recruitment contact: Mass Media Call/Invitation			
q2.14.8	Recruitment contact: Mail address (letter)			
q2.14.9	Recruitment contact: Telephone contact			

Variable name	Label	Question	Values and codes	Analysis
q2.14.10	Recruitment contact: E-mail invitation			
q2.14.11	Recruitment contact: Internet			
q2.14.12	Recruitment contact: Door to door			
q2.14.13	Recruitment contact: Street contact			
q2.14.14	Recruitment contact: Direct contact			
q2.14.other	Recruitment contact: Other			
q2.15	Is it a representative sample?	**Is it a representativeness sample (regarding any kind of universe/population?)**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q2.15.1.description	Representative sample: Level	**At what level (which universe/population – e.g., at national level, at regional level, …)?**		
q2.16.1	Time schedule (frequency) of the study/project/activity: Only once			
q2.16.2	Time schedule (frequency) of the study/project/activity: Once a year			
q2.16.3	Time schedule (frequency) of the study/project/activity: Every 2 years	**Time schedule (frequency) of this study/project/activity**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q2.16.4	Time schedule (frequency) of the study/project/activity: Every 3 years			
q2.16.5	Time schedule (frequency) of the study/project/activity: Every 4 years			
q2.16.6	Time schedule (frequency) of the study/project/activity: Every 5 years			
q2.16.7	Time schedule (frequency) of the			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	study/project/activity: Until the number of participants/samples are recruited/collected			
q2.16.other	Time schedule (frequency) of the study/project/activity: Other			
q2.17.1	Type of consent form: Participants' written informed consent	Type of consent form	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q2.17.2	Type of consent form: Parents' written informed consent			
q2.17.3	Type of consent form: Oral informed consent			
q2.17.other	Type of consent form: Other			
q2.18.1	Scope of the informed consent: Participants gave informed content for usage of data only within the context of this study/project/activity	Scope of the informed consent	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q2.18.2 | Scope of the informed consent: Participants gave broader consent (data can be used for other studies/projects/activities) | | | |
| q2.18.other | Scope of the informed consent: Other | | | |
| q2.19.1 | Incentives for participants: No encouragement | Incentives for participants | No – 0 Yes – 1 | This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q2.19.2	Incentives for participants: Reminder letter			
q2.19.3	Incentives for participants: Small gifts/presents			
q2.19.4	Incentives for participants: Financial compensation			
q2.19.5	Incentives for participants: Greetings cards			
q2.19.6	Incentives for participants: Birthday cards			

Variable name	Label	Question	Values and codes	Analysis
q2.19.7	Incentives for participants: Expensive presents (lottery)			
q2.19.8	Incentives for participants: Main collective results			
q2.19.9	Incentives for participants: Main individual results (participation feedback)			
q2.19.10	Incentives for participants: Newsletter to participants			
q2.19.11	Incentives for participants: Educational package on Environment and/or Health			
q2.19.12	Incentives for participants: Medical examination			
q2.19.13	Incentives for participants: Additional health monitoring			
q2.19.14	Incentives for participants: Medical advice and help			
q2.19.other	Incentives for participants: Other			
q2.19.4.1.description	Incentives for participants: Type of financial compensation	**If you have selected "financial compensation" above, please specify the type of incentive (e.g., reimbursement of travel expenses, before or after participation, amount, ...)**		The open-answer will be analysed (content analysis) and frequencies will also be reported
3. Fieldwork and data collection				
q3.1	Beginning date of data collection	**Beginning date**		
q3.2	Ending date of data collection	**Ending date**		

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.3.1	Mode of data collection: Face-to-face interviews (including biological sample collection, anthropometric measurements, …)	**Mode of data collection**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q3.3.2	Mode of data collection: Face-to-face interviews (neither with biological sample collection nor anthropometric measurements, …)			
q3.3.3	Mode of data collection: Telephone interview			
q3.3.4	Mode of data collection: Computer-Assisted Telephone Interview (CATI)			
q3.3.5	Mode of data collection: Computer-Assisted Personal Interview (CAPI)			
q3.3.6	Mode of data collection: Self-administered questionnaire (paper)			
q3.3.7	Mode of data collection: Self-administered questionnaire (online)			
q3.3.other	Mode of data collection: Other			
q3.4	For face-to-face administered questionnaire or phone interview, information obtained by qualified and trained personnel	**In case of face-to-face administered questionnaire or phone interview, the information was/will be obtained by qualified and trained personnel?**	0 – No 1 – Yes 2 – No answer	For this single-answer format question, a frequency table will be produced
q3.5.1	In case of face-to-face data collection, place where the interview is/was conducted: At participants' home	**In case of face-to-face data collection, which is/was/will be the place where the interview is/was conducted?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for |
| q3.5.2 | In case of face-to-face data collection, place where the interview is/was conducted: At an | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	examination centre			descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.5.3	In case of face-to-face data collection, place where the interview is/was conducted: At a mobile lab			
q3.5.4	In case of face-to-face data collection, place where the interview is/was conducted: In a hospital/maternity			
q3.5.5	In case of face-to-face data collection, place where the interview is/was conducted: In a clinic			
q3.5.6	In case of face-to-face data collection, place where the interview is/was conducted: In a primary health centre			
q3.5.7	In case of face-to-face data collection, place where the interview is/was conducted: In a nursing home			
q3.5.8	In case of face-to-face data collection, place where the interview is/was conducted: At kindergarten			
q3.5.9	In case of face-to-face data collection, place where the interview is/was conducted: At (vocational) school			
q3.5.10	In case of face-to-face data collection, place where the interview is/was conducted: In a lactarium			
q3.5.11	In case of face-to-face data collection, place where the interview is/was conducted: At workplace			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.5.other	In case of face-to-face data collection, place where the interview is/was conducted: Other			
q3.6	In case of using a questionnaire for data collection, is it possible to share this questionnaire?	**In case of using a questionnaire for data collection, is it possible to share this questionnaire?**	1 – No 2 – Yes, it is available to any researcher 3 – Yes, only to HBM4EU partners	For this single-answer format question, a frequency table will be produced
q3.7.1	Biological samples collected: None	**Biological samples collected**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.7.2	Biological samples collected: Blood			
q3.7.3	Biological samples collected: Blood erythrocytes			
q3.7.4	Biological samples collected: Plasma			
q3.7.5	Biological samples collected: Serum			
q3.7.6	Biological samples collected: Saliva			
q3.7.7	Biological samples collected: Buccal cells			
q3.7.8	Biological samples collected: Nails			
q3.7.9	Biological samples collected: DNA			
q3.7.10	Biological samples collected: Cells lines			
q3.7.11	Biological samples collected: 12-hours overnight urine			
q3.7.12	Biological samples collected: Urine (24h)			
q3.7.13	Biological samples collected: Urine (spot sample-random)			
q3.7.14	Biological samples collected: Urine (spot sample-first morning)			

Variable name	Label	Question	Values and codes	Analysis
q3.7.15	Biological samples collected: Human milk			
q3.7.16	Biological samples collected: Hair (chopped/lyophilised sample)			
q3.7.17	Biological samples collected: Hair (complete locks)			
q3.7.18	Biological samples collected: Fat/adipose tissue			
q3.7.19	Biological samples collected: Placenta			
q3.7.20	Biological samples collected: Umbilical cord blood			
q3.7.other	Biological samples collected: Other			
q3.8.1.1	Group/s of substances under study: Phthalates/DINCH	**Group/s of substances under study: Phthalates/DINCH**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.2.1	Group/s of substances under study: Bisphenols	**Group/s of substances under study: Bisphenols**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.3.1	Group/s of substances under study: Per-/Polyfluorinated compounds	**Group/s of substances under study: Per-/Polyfluorinated compounds**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.4.1	Group/s of substances under study: Flame Retardants	**Group/s of substances under study: Flame Retardants**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.comment	Group/s of substances under study: Comment			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	(including CAS-number)			
q3.8.5.1	Group/s of substances under study: Cadmium	**Group/s of substances under study: Cadmium**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.comment	Group/s of substances under study: Comment			
q3.8.6.1	Group/s of substances under study: Chromium VI	**Group/s of substances under study: Chromium VI**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.comment	Group/s of substances under study: Comment			
q3.8.7.1	Group/s of substances under study: PAHs	**Group/s of substances under study: PAHs**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.8.1	Group/s of substances under study: Anilin family: Anilines, MOCA	**Group/s of substances under study: Anilin family: Anilines, MOCA**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.9.1	Group/s of substances under study: Chemical mixtures	**Group/s of substances under study: Chemical mixtures**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.10.1	Group/s of substances under study: Emerging chemicals	**Group/s of substances under study: Emerging chemicals**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.comment	Group/s of substances under study: Comment (including CAS-number)			
q3.8.11.1	Group/s of substances under study: Other	**Group/s of substances under study: Other**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.comment	Group/s of substances under study: Comment			

Variable name	Label	Question	Values and codes	Analysis
	(including CAS-number)			
q3.8.1.1.1	Phthalates/DINCH: Matrix	**Regarding phthalates /DINCH: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.1.comment	Phthalates/DINCH: Comment			
q3.8.1.1.2	Phthalates/DINCH: Unit of measurement	**Regarding phthalates /DINCH: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.2.comment	Phthalates/DINCH: Comment			
q3.8.1.1.3	Phthalates/DINCH: LOD	**Regarding phthalates /DINCH: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.3.comment	Phthalates/DINCH: Comment			
q3.8.1.1.4	Phthalates/DINCH: LOQ	**Regarding phthalates /DINCH: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.4.comment	Phthalates/DINCH: Comment			
q3.8.1.1.5	Phthalates/DINCH: Number of analysed samples	**Regarding phthalates /DINCH: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.5.comment	Phthalates/DINCH: Comment			
q3.8.1.1.6	Phthalates/DINCH: Number of samples below LOD	**Regarding phthalates /DINCH: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.6.comment	Phthalates/DINCH: Comment			
q3.8.1.1.7	Phthalates/DINCH: Number of samples below LOQ	**Regarding phthalates /DINCH: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.7.comment	Phthalates/DINCH: Comment			
q3.8.1.1.8	Phthalates/DINCH: Exposure range	**Regarding phthalates /DINCH: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.1.1.8.comment	Phthalates/DINCH: Comment			
q3.8.1.1.9	Phthalates/DINCH: Analytical method	**Regarding phthalates**	No – 0	For this yes-no answer format question,

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
		/DINCH: Analytical method	Yes – 1	a frequency table will be produced
q3.8.1.1.9.comment	Phthalates/DINCH: Comment			
q3.8.2.1.1	Bisphenols: Matrix	**Regarding bisphenols: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.1.comment	Bisphenols: Comment			
q3.8.2.1.2	Bisphenols: Unit of measurement	**Regarding bisphenols: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.2.comment	Bisphenols: Comment			
q3.8.2.1.3	Bisphenols: LOD	**Regarding bisphenols: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.3.comment	Bisphenols: Comment			
q3.8.2.1.4	Bisphenols: LOQ	**Regarding bisphenols: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.4.comment	Bisphenols: Comment			
q3.8.2.1.5	Bisphenols: Number of analysed samples	**Regarding bisphenols: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.5.comment	Bisphenols: Comment			
q3.8.2.1.6	Bisphenols: Number of samples below LOD	**Regarding bisphenols: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.6.comment	Bisphenols: Comment			
q3.8.2.1.7	Bisphenols: Number of samples below LOQ	**Regarding bisphenols: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.7.comment	Bisphenols: Comment			
q3.8.2.1.8	Bisphenols: Exposure range	**Regarding bisphenols: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.8.comment	Bisphenols: Comment			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.2.1.9	Bisphenols: Analytical method	**Regarding bisphenols: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.2.1.9.comment	Bisphenols: Comment			
q3.8.3.1.1	Per-/Polyfluorinated compounds: Matrix	**Regarding per-/Polyfluorinated compounds: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.1.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.2	Per-/Polyfluorinated compounds: Unit of measurement	**Regarding per-/Polyfluorinated compounds: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.2.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.3	Per-/Polyfluorinated compounds: LOD	**Regarding per-/Polyfluorinated compounds: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.3.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.4	Per-/Polyfluorinated compounds: LOQ	**Regarding per-/Polyfluorinated compounds: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.4.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.5	Per-/Polyfluorinated compounds: Number of analysed samples	**Regarding per-/Polyfluorinated compounds: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.5.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.6	Per-/Polyfluorinated compounds: Number of samples below LOD	**Regarding per-/Polyfluorinated compounds: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.6.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.7	Per-/Polyfluorinated compounds: Number of samples below LOQ	**Regarding per-/Polyfluorinated compounds: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.7.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.8	Per-/Polyfluorinated compounds: Exposure	**Regarding per-**	No – 0	For this yes-no answer format question,

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	range	/Polyfluorinated compounds: Exposure range	Yes – 1	a frequency table will be produced
q3.8.3.1.8.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.3.1.9	Per-/Polyfluorinated compounds: Analytical method	Regarding per-/Polyfluorinated compounds: Analytical method	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.3.1.9.comment	Per-/Polyfluorinated compounds: Comment			
q3.8.4.1.1	Flame retardants: Matrix	Regarding flame retardants: Matrix	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.1.comment	Flame retardants: Comment			
q3.8.4.1.2	Flame retardants: Unit of measurement	Regarding flame retardants: Unit of measurement	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.2.comment	Flame retardants: Comment			
q3.8.4.1.3	Flame retardants: LOD	Regarding flame retardants: LOD	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.3.comment	Flame retardants: Comment			
q3.8.4.1.4	Flame retardants: LOQ	Regarding flame retardants: LOQ	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.4.comment	Flame retardants: Comment			
q3.8.4.1.5	Flame retardants: Number of analysed samples	Regarding flame retardants: Number of analysed samples	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.5.comment	Flame retardants: Comment			
q3.8.4.1.6	Flame retardants: Number of samples below LOD	Regarding flame retardants: Number of samples below LOD	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.6.comment	Flame retardants: Comment			
q3.8.4.1.7	Flame retardants: Number of samples below LOQ	Regarding flame retardants: Number of	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.4.1.7.comment	Flame retardants: Comment	**samples below LOQ**		
q3.8.4.1.8	Flame retardants: Exposure range	**Regarding flame retardants: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.8.comment	Flame retardants: Comment			
q3.8.4.1.9	Flame retardants: Analytical method	**Regarding flame retardants: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.4.1.9.comment	Flame retardants: Comment			
q3.8.5.1.1	Cadmium: Matrix	**Regarding cadmium: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.1.comment	Cadmium: Comment			
q3.8.5.1.2	Cadmium: Unit of measurement	**Regarding cadmium: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.2.comment	Cadmium: Comment			
q3.8.5.1.3	Cadmium: LOD	**Regarding cadmium: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.3.comment	Cadmium: Comment			
q3.8.5.1.4	Cadmium: LOQ	**Regarding cadmium: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.4.comment	Cadmium: Comment			
q3.8.5.1.5	Cadmium: Number of analysed samples	**Regarding cadmium: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.5.comment	Cadmium: Comment			
q3.8.5.1.6	Cadmium: Number of samples below LOD	**Regarding cadmium: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.6.comment	Cadmium: Comment			
q3.8.5.1.7	Cadmium: Number of samples below LOQ	**Regarding cadmium: Number of samples below**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.5.1.7.comment	Cadmium: Comment	**LOQ**		
q3.8.5.1.8	Cadmium: Exposure range	**Regarding cadmium: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.8.comment	Cadmium: Comment			
q3.8.5.1.9	Cadmium: Analytical method	**Regarding cadmium: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.5.1.9.comment	Cadmium: Comment			
q3.8.6.1.1	Chromium VI: Matrix	**Regarding chromium VI: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.1.comment	Chromium VI: Comment			
q3.8.6.1.2	Chromium VI: Unit of measurement	**Regarding chromium VI: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.2.comment	Chromium VI: Comment			
q3.8.6.1.3	Chromium VI: LOD	**Regarding chromium VI: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.3.comment	Chromium VI: Comment			
q3.8.6.1.4	Chromium VI: LOQ	**Regarding chromium VI: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.4.comment	Chromium VI: Comment			
q3.8.6.1.5	Chromium VI: Number of analysed samples	**Regarding chromium VI: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.5.comment	Chromium VI: Comment			
q3.8.6.1.6	Chromium VI: Number of samples below LOD	**Regarding chromium VI: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.6.comment	Chromium VI: Comment			
q3.8.6.1.7	Chromium VI: Number of samples below LOQ	**Regarding chromium VI: Number of samples below**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

Variable name	Label	Question	Values and codes	Analysis
q3.8.6.1.7.comment	Chromium VI: Comment	**LOQ**		
q3.8.6.1.8	Chromium VI: Exposure range	**Regarding chromium VI: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.8.comment	Chromium VI: Comment			
q3.8.6.1.9	Chromium VI: Analytical method	**Regarding chromium VI: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.6.1.9.comment	Chromium VI: Comment			
q3.8.7.1.1	PAHs: Matrix	**Regarding PAHs: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.1.comment	PAHs: Comment			
q3.8.7.1.2	PAHs: Unit of measurement	**Regarding PAHs: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.2.comment	PAHs: Comment			
q3.8.7.1.3	PAHs: LOD	**Regarding PAHs: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.3.comment	PAHs: Comment			
q3.8.7.1.4	PAHs: LOQ	**Regarding PAHs: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.4.comment	PAHs: Comment			
q3.8.7.1.5	PAHs: Number of analysed samples	**Regarding PAHs: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.5.comment	PAHs: Comment			
q3.8.7.1.6	PAHs: Number of samples below LOD	**Regarding PAHs: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.6.comment	PAHs: Comment			
q3.8.7.1.7	PAHs: Number of samples below LOQ	**Regarding PAHs: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

Variable Name	Label	Question	Values and codes	Analysis
q3.8.7.1.7.comment	PAHs: Comment			
q3.8.7.1.8	PAHs: Exposure range	**Regarding PAHs: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.8.comment	PAHs: Comment			
q3.8.7.1.9	PAHs: Analytical method	**Regarding PAHs: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.7.1.9.comment	PAHs: Comment			
q3.8.8.1.1	Anilin family - Anilines, MOCA: Matrix	**Regarding Anilin family: Anilines, MOCA: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.1.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.2	Anilin family - Anilines, MOCA: Unit of measurement	**Regarding Anilin family: Anilines, MOCA: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.2.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.3	Anilin family - Anilines, MOCA: LOD	**Regarding Anilin family: Anilines, MOCA: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.3.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.4	Anilin family - Anilines, MOCA: LOQ	**Regarding Anilin family: Anilines, MOCA: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.4.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.5	Anilin family - Anilines, MOCA: Number of analysed samples	**Regarding Anilin family: Anilines, MOCA: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.5.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.6	Anilin family - Anilines, MOCA: Number of samples below LOD	**Regarding Anilin family: Anilines, MOCA: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.6.comment	Anilin family - Anilines, MOCA: Comment			

Variable name	Label	Question	Values and codes	Analysis
q3.8.8.1.7	Anilin family - Anilines, MOCA: Number of samples below LOQ	Regarding Anilin family: Anilines, MOCA: Number of samples below LOQ	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.7.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.8	Anilin family - Anilines, MOCA: Exposure range	Regarding Anilin family: Anilines, MOCA: Exposure range	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.8.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.8.1.9	Anilin family - Anilines, MOCA: Analytical method	Regarding Anilin family: Anilines, MOCA: Analytical method	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.8.1.9.comment	Anilin family - Anilines, MOCA: Comment			
q3.8.9.1.1	Chemical mixtures: Matrix	Regarding chemicals mixtures: Matrix	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.1.comment	Chemical mixtures: Comment			
q3.8.9.1.2	Chemical mixtures: Unit of measurement	Regarding chemicals mixtures: Unit of measurement	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.2.comment	Chemical mixtures: Comment			
q3.8.9.1.3	Chemical mixtures: LOD	Regarding chemicals mixtures: LOD	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.3.comment	Chemical mixtures: Comment			
q3.8.9.1.4	Chemical mixtures: LOQ	Regarding chemicals mixtures: LOQ	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.4.comment	Chemical mixtures: Comment			
q3.8.9.1.5	Chemical mixtures: Number of analysed samples	Regarding chemicals mixtures: Number of analysed samples	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.5.comment	Chemical mixtures: Comment			
q3.8.9.1.6	Chemical mixtures: Number of samples below LOD	Regarding chemicals mixtures: Number of	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.9.1.6.comment	Chemical mixtures: Comment	**samples below LOD**		
q3.8.9.1.7	Chemical mixtures: Number of samples below LOQ	**Regarding chemicals mixtures: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.7.comment	Chemical mixtures: Comment			
q3.8.9.1.8	Chemical mixtures: Exposure range	**Regarding chemicals mixtures: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.8.comment	Chemical mixtures: Comment			
q3.8.9.1.9	Chemical mixtures: Analytical method	**Regarding chemicals mixtures: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.9.1.9.comment	Chemical mixtures: Comment			
q3.8.10.1.1	Emerging chemicals: Matrix	**Regarding emerging chemicals: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.1.comment	Emerging chemicals: Comment			
q3.8.10.1.2	Emerging chemicals: Unit of measurement	**Regarding emerging chemicals: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.2.comment	Emerging chemicals: Comment			
q3.8.10.1.3	Emerging chemicals: LOD	**Regarding emerging chemicals: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.3.comment	Emerging chemicals: Comment			
q3.8.10.1.4	Emerging chemicals: LOQ	**Regarding emerging chemicals: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.4.comment	Emerging chemicals: Comment			
q3.8.10.1.5	Emerging chemicals: Number of analysed samples	**Regarding emerging chemicals: Number of analysed samples**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.5.comment	Emerging chemicals: Comment			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.10.1.6	Emerging chemicals: Number of samples below LOD	**Regarding emerging chemicals: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.6.comment	Emerging chemicals: Comment			
q3.8.10.1.7	Emerging chemicals: Number of samples below LOQ	**Regarding emerging chemicals: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.7.comment	Emerging chemicals: Comment			
q3.8.10.1.8	Emerging chemicals: Exposure range	**Regarding emerging chemicals: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.8.comment	Emerging chemicals: Comment			
q3.8.10.1.9	Emerging chemicals: Analytical method	**Regarding emerging chemicals: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.10.1.9.comment	Emerging chemicals: Comment			
q3.8.11.1.1	Other substances: Matrix	**Regarding other substance: Matrix**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.1.comment	Other substances: Comment			
q3.8.11.1.2	Other substances: Unit of measurement	**Regarding other substance: Unit of measurement**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.2.comment	Other substances: Comment			
q3.8.11.1.3	Other substances: LOD	**Regarding other substance: LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.3.comment	Other substances: Comment			
q3.8.11.1.4	Other substances: LOQ	**Regarding other substance: LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.4.comment	Other substances: Comment			
q3.8.11.1.5	Other substances: Number of analysed samples	**Regarding other substance: Number of analysed**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.8.11.1.5.comment	Other substances: Comment	samples		
q3.8.11.1.6	Other substances: Number of samples below LOD	**Regarding other substance: Number of samples below LOD**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.6.comment	Other substances: Comment			
q3.8.11.1.7	Other substances: Number of samples below LOQ	**Regarding other substance: Number of samples below LOQ**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.7.comment	Other substances: Comment			
q3.8.11.1.8	Other substances: Exposure range	**Regarding other substance: Exposure range**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.8.comment	Other substances: Comment			
q3.8.11.1.9	Other substances: Analytical method	**Regarding other substances: Analytical method**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.8.11.1.9.comment	Other substances: Comment			
q3.9	Does the study/project/activity collect genetic-related data?	**Does the study/project/activity collect genetic-related data?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.9.1.1	Genetic-related data: Specific polymorphism - GSTM1	**Which data were collected regarding specific polymorphisms?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.9.1.2	Genetic-related data: Specific polymorphism - GSTM3			
q3.9.1.3	Genetic-related data: Specific polymorphism - GSTT1			
q3.9.1.4	Genetic-related data: Specific polymorphism - GSTP1			
q3.9.1.5	Genetic-related data: Specific polymorphism -			

Variable name	Label	Question	Values and codes	Analysis
	NAT2			
q3.9.1.6	Genetic-related data: Specific polymorphism - EPHX			
q3.9.1.7	Genetic-related data: Specific polymorphism - XRCC1			
q3.9.1.8	Genetic-related data: Specific polymorphism - XRCC3			
q3.9.1.9	Genetic-related data: Specific polymorphism - XPD			
q3.9.1.10	Genetic-related data: Specific polymorphism - XPA			
q3.9.1.11	Genetic-related data: Specific polymorphism - TDG			
q3.9.1.12	Genetic-related data: Specific polymorphism - ALAD			
q3.9.1.other	Genetic-related data: Specific polymorphism - Other			
q3.9.2.1	Genetic-related data: DNA damage - Single strand breaks			This set of variables represents a multiple-choice answer format question.
q3.9.2.2	Genetic-related data: DNA damage - Double strand breaks	Which data were collected regarding DNA Damage?	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.9.2.3	Genetic-related data: DNA damage - DNA strand cross links			
q3.9.2.4	Genetic-related data: DNA damage - DNA adducts			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.9.2.5	Genetic-related data: DNA damage - DNA base changes			
q3.9.2.other	Genetic-related data: DNA damage - Other			
q3.9.3.1	Genetic-related data: DNA repair - Apoptosis	**Which data were collected regarding DNA Repair?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.9.3.2	Genetic-related data: DNA repair - Excision repair			
q3.9.3.3	Genetic-related data: DNA repair - Double-strand break repair			
q3.9.3.other	Genetic-related data: DNA repair - Other			
q3.9.4.1	Genetic-related data: Gene mutations - HPRT	**Which data were collected regarding gene mutations?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.9.4.2	Genetic-related data: Gene mutations - Glycophorin A			
q3.9.4.other	Genetic-related data: Gene mutations - Other			
q3.9.5.1	Genetic-related data: Chromosomal alterations - Chromosomal aberrations	**Which data were collected regarding chromosomal alterations?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.9.5.2	Genetic-related data: Chromosomal alterations - Micronuclei			
q3.9.5.3	Genetic-related data: Chromosomal alterations - Numerical chromosome changes			
q3.9.5.4	Genetic-related data: Chromosomal alterations - Sister chromatid exchange			
q3.9.5.5	Genetic-related data: Chromosomal alterations -			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Reciprocal translocations			
q3.9.5.other	Genetic-related data: Chromosomal alterations - Other			
q3.10	Does the study/project/activity collect data regarding molecular information?	**Does the study/project/activity collect data regarding molecular information?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.10.1	Molecular information: Genetic			This set of variables represents a multiple-choice answer format question.
q3.10.2	Molecular information: Epigenetic	**Which data were collected regarding molecular information?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.10.3	Molecular information: Proteins			
q3.10.4	Molecular information: Metabolites			
q3.10.other	Molecular information: Other			
q3.11	Does the study/project/activity collect data about skin parameters?	**Does the study/project/activity collect data about skin parameters?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.11.1	Skin parameters data: Skin examination			This set of variables represents a multiple-choice answer format question.
q3.11.2	Skin parameters data: RAST			
q3.11.3	Skin parameters data: SPT	**Which data were collected regarding skin parameters?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.11.4	Skin parameters data: Epicutane test			
q3.11.other	Skin parameters data: Other			
q3.12	Does the study/project/activity collect data about respiratory/lung parameters?	**Does the study/project/activity collect data about respiratory/lung**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
		parameters?		
q3.12.1	Respiratory/lung parameters data: Diary of lung symptoms	Which data were collected regarding respiratory/lung parameters?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q3.12.2	Respiratory/lung parameters data: Complement C3c in serum			
q3.12.3	Respiratory/lung parameters data: Spirometry			
q3.12.4	Respiratory/lung parameters data: Lung function test			
q3.12.other	Respiratory/lung parameters data: Other			
q3.12.4.1	Respiratory/lung parameters data: Lung function test - VFC	Which data were collected regarding specific lung function test?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q3.12.4.2	Respiratory/lung parameters data: Lung function test - FEV1			
q3.12.4.3	Respiratory/lung parameters data: Lung function test - PEF			
q3.12.4.4	Respiratory/lung parameters data: Lung function test - MEF50			
q3.12.4.5	Respiratory/lung parameters data: Lung function test - Bronchial hyperactivity			
q3.12.4.other	Respiratory/lung parameters data: Lung function test - Other			
q3.13	Does the study/project/activity collect data about skeletal parameters?	Does the study/project/activity collect data about skeletal parameters?	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.13.1	Skeletal parameters data: Osteocalcin	Which data were collected	No – 0	This set of variables represents a

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.13.2	Skeletal parameters data: Bone density	**regarding skeletal parameters?**	Yes – 1	multiple-choice answer format question.
q3.13.other	Skeletal parameters data: Other			Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.14	Does the study/project/activity collect data regarding renal function parameters?	**Does the study/project/activity collect data regarding renal function parameters?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.14.1	Renal function parameters data: Urinary total protein	**Which data were collected regarding renal function parameters?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.14.2	Renal function parameters data: Albumin			
q3.14.3	Renal function parameters data: Alpha-1-microglobuline			
q3.14.4	Renal function parameters data: Urinary β2-microglobulin			
q3.14.5	Renal function parameters data: HMW- and LMW-proteins			
q3.14.6	Renal function parameters data: Creatinine value			
q3.14.7	Renal function parameters data: Retinol binding protein			
q3.14.8	Renal function parameters data: NAG in urine			
q3.14.9	Renal function parameters data: 8-ALA			
q3.14.other	Renal function parameters data: Other			

Variable name	Label	Question	Values and codes	Analysis
q3.15	Does the study/project/activity collect data regarding reproductive and/or development system parameters?	**Does the study/project/activity collect data regarding reproductive and/or development system parameters?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.15.1.1	Reproductive and/or development system parameters data: Sexual maturation and function - Testicular volume in boys	**Which data were collected regarding sexual maturation and function?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.15.1.2	Reproductive and/or development system parameters data: Sexual maturation and function - Age at menarche in girls			
q3.15.1.3	Reproductive and/or development system parameters data: Sexual maturation and function - Puberty stage (Marshall-Tanner)			
q3.15.1.4	Reproductive and/or development system parameters data: Sexual maturation and function - Sex hormones			
q3.15.1.5	Reproductive and/or development system parameters data: Sexual maturation and function - Thyroid hormones			
q3.15.1.6	Reproductive and/or development system parameters data: Sexual maturation and function - Libido			
q3.15.1.7	Reproductive and/or development system parameters data: Sexual maturation and function - Semen analysis			
q3.15.1.other	Reproductive and/or development system			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	parameters data: Sexual maturation and function - Other			
q3.15.2.1	Reproductive and/or development system parameters data: Pregnancy and lactation - Milk Quantity/Quality	Which data were collected regarding pregnancy and lactation?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.15.2.2	Reproductive and/or development system parameters data: Pregnancy and lactation - Thyroid markers			
q3.15.2.other	Reproductive and/or development system parameters data: Pregnancy and lactation - Other			
q3.15.3.1	Reproductive and/or development system parameters data: Newborn - Birth weight	Which data were collected regarding newborn?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.15.3.2	Reproductive and/or development system parameters data: Newborn - APGAR score			
q3.15.3.3	Reproductive and/or development system parameters data: Newborn - Digit ratio			
q3.15.3.other	Reproductive and/or development system parameters data: Newborn - Other			
q3.15.4.1	Reproductive and/or development system parameters data: Development - Griffith's testing	Which data were collected regarding development?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.15.4.2	Reproductive and/or development system parameters data: Development - Neuropathological parameters			
q3.15.4.3	Reproductive and/or development system parameters data: Development -			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Neuropsychological parameters			
q3.15.4.4	Reproductive and/or development system parameters data: Development - Neurophysiological parameters			
q3.15.4.5	Reproductive and/or development system parameters data: Development - Growth retardation			
q3.15.4.other	Reproductive and/or development system parameters data: Development - Other			
q3.16	Does the study/project/activity collect data regarding immunity?	**Does the study/project/activity collect data regarding immunity?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.16.1	Immunity data: Immune system effects	**Which data were collected regarding acquired immunity activity?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.16.2	Immunity data: Innate Immunity activity			
q3.16.3	Immunity data: Acquired Immunity activity - Humoral			
q3.16.4	Immunity data: Acquired Immunity activity - Cell mediated			
q3.16.5	Immunity data: Acquired Immunity activity - Clinical expressions			
q3.16.3.1	Immunity data: Acquired Immunity activity - Humoral: IgM	**Which data were collected regarding humoral immunity?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A
q3.16.3.2	Immunity data: Acquired Immunity activity - Humoral: Antigen specific			
q3.16.3.3	Immunity data: Acquired Immunity activity -			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Humoral: Cytokine release/activity			frequency table will be produced for this multiple-choice-set.
q3.16.3.4	Immunity data: Acquired Immunity activity - Humoral: Co-receptors			
q3.16.3.other	Immunity data: Acquired Immunity activity - Humoral: Other			
q3.16.4.1	Immunity data: Acquired Immunity activity - Cell mediated: T cell response	**Which data were collected regarding cell-mediated immunity?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.16.4.other	Immunity data: Acquired Immunity activity - Cell mediated: Other			
q3.16.5.1	Immunity data: Acquired Immunity activity - Clinical expressions: Sensitivity	**Which data were collected regarding clinical expressions immunity?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.16.5.2	Immunity data: Acquired Immunity activity - Clinical expressions: Allergic reaction			
q3.16.5.other	Immunity data: Acquired Immunity activity - Clinical expressions: Other			
q3.17	Does the study/project/activity collect data regarding neurological parameters?	**Does the study/project/activity collect data regarding neurological parameters?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.17.1.1	Neurological parameters data: Morphological - Neuropathological	**Which morphological data were collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple
q3.17.1.2	Neurological parameters data: Morphological - Gross anatomical			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.17.1.3	Neurological parameters data: Morphological - Immunocytochemical			response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.17.1.other	Neurological parameters data: Morphological - Other			
q3.17.2.1	Neurological parameters data: Physiological and biochemical - BrainStem Response Audiometry	**Which physiological and biochemical data were collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.17.2.2	Neurological parameters data: Physiological and biochemical - EEG			
q3.17.2.3	Neurological parameters data: Physiological and biochemical - Brain mapping			
q3.17.2.4	Neurological parameters data: Physiological and biochemical - Neurotransmitters			
q3.17.2.5	Neurological parameters data: Physiological and biochemical - Cell integrity			
q3.17.2.6	Neurological parameters data: Physiological and biochemical - Enzyme/Protein activity			
q3.17.2.other	Neurological parameters data: Physiological and biochemical - Other			
q3.17.3.1	Neurological parameters data: Behavioural and other neurological assessments - Neurological Evaluation Scale (NES) tests	**Which data were collected regarding behavioural and other neurological assessments?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.17.3.2	Neurological parameters data: Behavioural and other neurological assessments - Neuropsychological evaluation			
q3.17.3.3	Neurological parameters data: Behavioural and other neurological assessments - Neuro-			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	cognitive development			
q3.17.3.4	Neurological parameters data: Behavioural and other neurological assessments - Motor development			
q3.17.3.other	Neurological parameters data: Behavioural and other neurological assessments - Other			
q3.18	Does the study/project/activity collect data regarding essential trace elements?	**Does the study/project/activity collect data regarding essential trace elements?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.18.1	Essential trace elements data: K	**Which data were collected regarding essential trace elements?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.18.2	Essential trace elements data: Na			
q3.18.3	Essential trace elements data: Ca			
q3.18.4	Essential trace elements data: Mg			
q3.18.5	Essential trace elements data: Cu			
q3.18.6	Essential trace elements data: Zn			
q3.18.7	Essential trace elements data: Fe			
q3.18.8	Essential trace elements data: Mn			
q3.18.other	Essential trace elements data: Other			
q3.19	Does the study/project/activity collect anthropometric data (objectively measured)?	**Does the study/project/activity collect anthropometric data? (Not subjective data but objectively measured, instead)**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.19.1	Anthropometric data: Height	**Which anthropometric data**	No – 0	This set of variables represents a

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.19.2	Anthropometric data: Weight	**were collected?**	Yes – 1	multiple-choice answer format question.
q3.19.3	Anthropometric data: Waist			
q3.19.4	Anthropometric data: Hip			Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.19.5	Anthropometric data: Skin fold			
q3.19.other	Anthropometric data: Other			
q3.20	Does the study/project/activity collect data regarding other biomarkers or physiological indicators?	**Does the study/project/activity collect data regarding other biomarkers or physiological indicators?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q3.20.1	Other biomarkers or physiological indicators data: Oxidative damage	**Which data were collected regarding biomarkers or physiological indicators?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q3.20.2	Other biomarkers or physiological indicators data: Blood pressure			
q3.20.3	Other biomarkers or physiological indicators data: Heart rate			
q3.20.4	Other biomarkers or physiological indicators data: Status of the thyroid gland			
q3.20.5	Other biomarkers or physiological indicators data: Glucose tolerance			
q3.20.6	Other biomarkers or physiological indicators data: Fasting glycaemia			
q3.20.7	Other biomarkers or physiological indicators data: Glycated haemoglobin			
q3.20.8	Other biomarkers or physiological indicators			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	data: Immunophenotyping			
q3.20.9	Other biomarkers or physiological indicators data: HDL cholesterol			
q3.20.10	Other biomarkers or physiological indicators data: LDL cholesterol			
q3.20.11	Other biomarkers or physiological indicators data: Total cholesterol			
q3.20.12	Other biomarkers or physiological indicators data: Serum triglycerides			
q3.20.13	Other biomarkers or physiological indicators data: Bone density			
q3.20.14	Other biomarkers or physiological indicators data: Iron status			
q3.20.15	Other biomarkers or physiological indicators data: Vitamin levels			
q3.20.16	Other biomarkers or physiological indicators data: Haematocrit			
q3.20.17	Other biomarkers or physiological indicators data: Specific metabolising genes			
q3.20.18	Other biomarkers or physiological indicators data: Haemoglobin			
q3.20.19	Other biomarkers or physiological indicators data: Growth factors			
q3.20.20	Other biomarkers or physiological indicators data: Hearing assessment			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q3.20.21	Other biomarkers or physiological indicators data: Visual accuracy			
q3.20.other	Other biomarkers or physiological indicators data: Other			
q3.21.description	Individual recruitment procedures	**Which data were collected regarding individual recruitment procedures?**		
4. OTHER DATA				
q4.1.1	ENVIRONMENTAL DATA Does the study/project/activity collect data about outdoor pollution?	**Does the study/project/activity collect data about outdoor pollution?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.1.1.1	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Amount of reactive oxygen species	**Which data were collected regarding air pollutants?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.1.1.2	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Transition metal content			
q4.1.1.1.3	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - LPS content			
q4.1.1.1.4	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Biological pollutants			
q4.1.1.1.5	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - PM 2,5			
q4.1.1.1.6	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - PM 10			
q4.1.1.1.7	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Black smoke			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.1.1.8	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - NO2			
q4.1.1.1.9	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Nox			
q4.1.1.1.10	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - SO2			
q4.1.1.1.11	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Carbon monoxide (CO)			
q4.1.1.1.12	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Ozone (O3)			
q4.1.1.1.13	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Benzene			
q4.1.1.1.14	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Toluene			
q4.1.1.1.15	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Xylenes			
q4.1.1.1.16	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Pesticides			
q4.1.1.1.17	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Biocides			
q4.1.1.1.other	ENVIRONMENTAL DATA Outdoor pollution data: Air pollutants - Other			
q4.1.1.2.1	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals	**Which data were collected regarding airborne nanoparticle identification?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.1.2.other	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Other			Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.1.2.1.1	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Arsenic			
q4.1.1.2.1.2	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Boron			
q4.1.1.2.1.3	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Bronze			This set of variables represents a multiple-choice answer format question.
q4.1.1.2.1.4	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Cadmium	**Which data were collected regarding trace elements/minerals?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.1.2.1.5	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Chromium			
q4.1.1.2.1.6	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Copper			
q4.1.1.2.1.7	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Iron			
q4.1.1.2.1.8	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	elements/minerals: Lead			
q4.1.1.2.1.9	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Magnesium			
q4.1.1.2.1.10	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Phosphorus			
q4.1.1.2.1.11	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Selenium			
q4.1.1.2.1.12	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Zinc			
q4.1.1.2.1.other	ENVIRONMENTAL DATA Outdoor pollution data: Airborne nanoparticle identification - Trace elements/minerals: Other			
q4.1.1.3.1	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Metals	**Which data were collected regarding soil pollution: Metals?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.1.3.1.comment	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Metals: Comment			
q4.1.1.3.2	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Biocides	**Which data were collected regarding soil pollution: Biocides?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.1.3.2.comment	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Biocides: Comment			
q4.1.1.3.3	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Pesticides	**Which data were collected regarding soil pollution:**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.1.3.3.comment	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Pesticides: Comment	**Pesticides?**		
q4.1.1.3.4	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Other	**Which data were collected regarding soil pollution: Other?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.1.3.4.comment	ENVIRONMENTAL DATA Outdoor pollution data: Soil pollution - Other: Comment			
q4.1.1.4	ENVIRONMENTAL DATA Outdoor pollution data: Environmental noise exposure	**Which data were collected regarding environmental noise exposure?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.1.5.1	ENVIRONMENTAL DATA Outdoor pollution data: Ratio of heavy metals assessment in - Plants	**Which data were collected regarding ratio of heavy metals assessment?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.1.5.2	ENVIRONMENTAL DATA Outdoor pollution data: Ratio of heavy metals assessment in - Water			
q4.1.1.5.3	ENVIRONMENTAL DATA Outdoor pollution data: Ratio of heavy metals assessment in - Wild life			
q4.1.1.5.other	ENVIRONMENTAL DATA Outdoor pollution data: Ratio of heavy metals assessment in - Other			
q4.1.2	ENVIRONMENTAL DATA Does the study/project/activity collect data about climate?	**Does the study/project/activity collect data about climate?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.2.1	ENVIRONMENTAL DATA Outdoor climate data: Temperature (maximum, minimum, …)	**Which data were collected regarding outdoor climate?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this
q4.1.2.2	ENVIRONMENTAL DATA Outdoor climate data: Humidity			
q4.1.2.3	ENVIRONMENTAL DATA Outdoor climate data: Pressure			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.2.4	ENVIRONMENTAL DATA Outdoor climate data: Precipitation			multiple-choice-set.
q4.1.2.5	ENVIRONMENTAL DATA Outdoor climate data: Cloudiness			
q4.1.2.6	ENVIRONMENTAL DATA Outdoor climate data: Sun exposure			
q4.1.2.7	ENVIRONMENTAL DATA Outdoor climate data: Snow fall (depth of snow on the ground)			
q4.1.2.8	ENVIRONMENTAL DATA Outdoor climate data: Frost			
q4.1.2.9	ENVIRONMENTAL DATA Outdoor climate data: Wind chill			
q4.1.2.other	ENVIRONMENTAL DATA Outdoor climate data: Other			
q4.1.3	ENVIRONMENTAL DATA Does the study/project/activity collect general information on residence?	**Does the study/project/activity collect general information on residence?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.3.1	ENVIRONMENTAL DATA General information on residence: Address			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.1.3.2	ENVIRONMENTAL DATA General information on residence: Place of residence	**Which data were collected regarding general information on residence?**	No – 0 Yes – 1	
q4.1.3.3	ENVIRONMENTAL DATA General information on residence: Number of years living in this residence			
q4.1.3.4	ENVIRONMENTAL DATA General information on			

Variable name	Label	Question	Values and codes	Analysis
	residence: Number of hours in the residence (working days)			
q4.1.3.5	ENVIRONMENTAL DATA General information on residence: Number of persons living in the household			
q4.1.3.6	ENVIRONMENTAL DATA General information on residence: Number of siblings			
q4.1.3.7	ENVIRONMENTAL DATA General information on residence: Year of construction of the building			
q4.1.3.8	ENVIRONMENTAL DATA General information on residence: Urban/rural			
q4.1.3.9	ENVIRONMENTAL DATA General information on residence: Pollution sources near residence			
q4.1.3.other	ENVIRONMENTAL DATA General information on residence: Other			
q4.1.4	ENVIRONMENTAL DATA Does the study/project/activity collect data about indoor parameters?	**Does the study/project/activity collect data about indoor parameters?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.1.4.1.1	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Type of dwelling (e.g., apartment, house, …)	**Which data were collected regarding housing characteristics?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.1.2	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Accommodation crowding (e.g., number of persons per bedroom)			
q4.1.4.1.3	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Heating appliances			

Variable name	Label	Question	Values and codes	Analysis
q4.1.4.1.4	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Cooking appliances			
q4.1.4.1.5	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Ventilation			
q4.1.4.1.6	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Ceiling covering			
q4.1.4.1.7	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Wall covering			
q4.1.4.1.8	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Floor covering			
q4.1.4.1.9	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Indoor smoking			
q4.1.4.1.10	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Home dampness			
q4.1.4.1.11	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Pet ownership			
q4.1.4.1.12	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Garden belonging to the house			
q4.1.4.1.13	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Use of pesticides			
q4.1.4.1.14	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Use of biocides			
q4.1.4.1.other	ENVIRONMENTAL DATA Indoor parameters: Housing characteristics - Other			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.4.2.1	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Aluminium	**Which data were collected regarding household drinking water parameters?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.2.2	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Arsenic			
q4.1.4.2.3	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Barium			
q4.1.4.2.4	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Boron			
q4.1.4.2.5	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Cadmium			
q4.1.4.2.6	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Calcium			
q4.1.4.2.7	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Chloride			
q4.1.4.2.8	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Copper			
q4.1.4.2.9	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Iron			
q4.1.4.2.10	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Lead			
q4.1.4.2.11	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Magnesium			
q4.1.4.2.12	ENVIRONMENTAL DATA Indoor parameters:			

Variable name	Label	Question	Values and codes	Analysis
	Household drinking water parameters - Manganese			
q4.1.4.2.13	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Nickel			
q4.1.4.2.14	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Nitrate			
q4.1.4.2.15	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Phosphorus			
q4.1.4.2.16	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Potassium			
q4.1.4.2.17	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Selenium			
q4.1.4.2.18	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Sodium			
q4.1.4.2.19	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Strontium			
q4.1.4.2.20	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Sulphate			
q4.1.4.2.21	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Zinc			
q4.1.4.2.other	ENVIRONMENTAL DATA Indoor parameters: Household drinking water parameters - Other			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.1.4.3.1	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Relative humidity			
q4.1.4.3.2	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Temperature			
q4.1.4.3.3	ENVIRONMENTAL DATA Indoor parameters: Household air quality - PM 2,5			
q4.1.4.3.4	ENVIRONMENTAL DATA Indoor parameters: Household air quality - PM 10			
q4.1.4.3.5	ENVIRONMENTAL DATA Indoor parameters: Household air quality - NO			This set of variables represents a multiple-choice answer format question.
q4.1.4.3.6	ENVIRONMENTAL DATA Indoor parameters: Household air quality - NO2	**Which data were collected regarding household air quality?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.3.7	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Nox			
q4.1.4.3.8	ENVIRONMENTAL DATA Indoor parameters: Household air quality - CO			
q4.1.4.3.9	ENVIRONMENTAL DATA Indoor parameters: Household air quality - SO2			
q4.1.4.3.10	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Carbonyl			
q4.1.4.3.11	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Fungal contamination			
q4.1.4.3.12	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Mould burden			
q4.1.4.3.13	ENVIRONMENTAL DATA Indoor parameters:			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Household air quality - VOC			
q4.1.4.3.14	ENVIRONMENTAL DATA Indoor parameters: Household air quality - MVOC			
q4.1.4.3.15	ENVIRONMENTAL DATA Indoor parameters: Household air quality - PCBs			
q4.1.4.3.16	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Coarse particles			
q4.1.4.3.17	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Environmental tobacco smoke			
q4.1.4.3.other	ENVIRONMENTAL DATA Indoor parameters: Household air quality - Other			
q4.1.4.4.1	ENVIRONMENTAL DATA Indoor parameters: House dust - Mite levels			
q4.1.4.4.2	ENVIRONMENTAL DATA Indoor parameters: House dust - Mould spores			This set of variables represents a multiple-choice answer format question.
q4.1.4.4.3	ENVIRONMENTAL DATA Indoor parameters: House dust - Fungal contamination	Which data were collected regarding house dust?	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.4.4	ENVIRONMENTAL DATA Indoor parameters: House dust - Pentachlorphenol			
q4.1.4.4.5	ENVIRONMENTAL DATA Indoor parameters: House dust - Pyrethroides			
q4.1.4.4.6	ENVIRONMENTAL DATA Indoor parameters: House dust - Dust from vacuum cleaner			
q4.1.4.4.7	ENVIRONMENTAL DATA Indoor parameters:			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	House dust - Deposited dust in the household			
q4.1.4.4.other	ENVIRONMENTAL DATA Indoor parameters: House dust - Other			
q4.1.4.4.6.1	ENVIRONMENTAL DATA Indoor parameters: House dust - Dust from vacuum cleaner: Biocides/pesticides	**Which data were collected regarding dust from vacuum cleaner?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.4.6.2	ENVIRONMENTAL DATA Indoor parameters: House dust - Dust from vacuum cleaner: Plasticisers			
q4.1.4.4.6.3	ENVIRONMENTAL DATA Indoor parameters: House dust - Dust from vacuum cleaner: Metals			
q4.1.4.4.6.other	ENVIRONMENTAL DATA Indoor parameters: House dust - Dust from vacuum cleaner: Other			
q4.1.4.4.7.1	ENVIRONMENTAL DATA Indoor parameters: House dust - Deposited dust in the household: Biocides/pesticides	**Which data were collected regarding deposited dust in the household?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.1.4.4.7.2	ENVIRONMENTAL DATA Indoor parameters: House dust - Deposited dust in the household: Plasticisers			
q4.1.4.4.7.3	ENVIRONMENTAL DATA Indoor parameters: House dust - Deposited dust in the household: Metals			
q4.1.4.4.7.other	ENVIRONMENTAL DATA Indoor parameters: House dust - Deposited dust in the household: Other			
q4.2.1	LIFESTYLE Does the study/project/activity collect	**Does the study/project/activity**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	data about food intake / food habits?	**collect data about food intake / food habits?**		
q4.2.1.1.1	LIFESTYLE Food intake / food habits: Type of food habits' assessment method - 24h recall	**Which data were collected regarding type of food habits' assessment method?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.1.1.2	LIFESTYLE Food intake / food habits: Type of food habits' assessment method - Total diet register			
q4.2.1.1.3	LIFESTYLE Food intake / food habits: Type of food habits' assessment method - Observation			
q4.2.1.1.4	LIFESTYLE Food intake / food habits: Type of food habits' assessment method - Food Frequency Questionnaire (FFQ)			
q4.2.1.1.other	LIFESTYLE Food intake / food habits: Type of food habits' assessment method - Other			
q4.2.1.2	LIFESTYLE Food intake / food habits: Frequency of consumption of food produced locally	**Which data were collected regarding frequency of consumption of food produced locally?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.2	LIFESTYLE Does the study/project/activity collect data about traffic exposure or mobility?	**Does the study/project/activity collect data about traffic exposure or mobility?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.2.1	LIFESTYLE Traffic exposure or mobility: Time spent in traffic	**Which data were collected regarding about traffic exposure or mobility?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this
q4.2.2.2	LIFESTYLE Traffic exposure or mobility: Near road exposure			
q4.2.2.other	LIFESTYLE Traffic exposure or mobility: Other			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
				multiple-choice-set.
q4.2.3	LIFESTYLE Does the study/project/activity collect data about participants' personal hygiene?	**Does the study/project/activity collect data about participants' personal hygiene?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.3.1	LIFESTYLE Participants' personal hygiene: Oral hygiene	**Which data were collected regarding the participants' personal hygiene?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.3.2	LIFESTYLE Participants' personal hygiene: Frequency of washing hands			
q4.2.3.3	LIFESTYLE Participants' personal hygiene: Frequency of shower			
q4.2.3.4	LIFESTYLE Participants' personal hygiene: Use of cosmetics			
q4.2.3.5	LIFESTYLE Participants' personal hygiene: Use of tanning beds			
q4.2.3.other	LIFESTYLE Participants' personal hygiene: Other			
q4.2.4	LIFESTYLE Does the study/project/activity collect data about smoking habits?	**Does the study/project/activity collect data about smoking habits?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.4.1.1	LIFESTYLE Smoking habits: Smoker - Active smoker	**Smoker**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this
q4.2.4.1.2	LIFESTYLE Smoking habits: Smoker - Former smoker			
q4.2.4.1.3	LIFESTYLE Smoking habits: Smoker - Starting age			
q4.2.4.1.4	LIFESTYLE Smoking habits: Smoker - Amount			

Variable name	Label	Question	Values and codes	Analysis
q4.2.4.1.5	LIFESTYLE Smoking habits: Smoker - Frequency			multiple-choice-set.
q4.2.4.1.6	LIFESTYLE Smoking habits: Smoker - Smoking during pregnancy			
q4.2.4.1.7	LIFESTYLE Smoking habits: Smoker - Measurement of nicotine metabolites (e.g., cotinine)			
q4.2.4.1.other	LIFESTYLE Smoking habits: Smoker - Other			
q4.2.4.2	LIFESTYLE Smoking habits: Non-smoker	**Non-smoker**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.4.3.1	LIFESTYLE Smoking habits: Passive smoking - Active smokers in the family			This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.4.3.2	LIFESTYLE Smoking habits: Passive smoking - Active smokers at working place	**Passive smoking**	No – 0 Yes – 1	
q4.2.4.3.3	LIFESTYLE Smoking habits: Passive smoking - Daily average duration of exposure			
q4.2.4.3.other	LIFESTYLE Smoking habits: Passive smoking - Other			
q4.2.5	LIFESTYLE Does the study/project/activity collect data about dental status?	**Does the study/project/activity collect data about dental status?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.5.1.1	LIFESTYLE Dental status: Teeth decay's prevention or treatment - Teeth sealants use			This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A
q4.2.5.1.2	LIFESTYLE Dental status: Teeth decay's prevention or treatment - Amalgam fillings	**Which data were collected regarding teeth decay's prevention or treatment?**	No – 0 Yes – 1	
q4.2.5.1.3	LIFESTYLE Dental status: Teeth decay's			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	prevention or treatment - Crowns			frequency table will be produced for this multiple-choice-set.
q4.2.5.1.4	LIFESTYLE Dental status: Teeth decay's prevention or treatment - Use of braces			
q4.2.5.1.other	LIFESTYLE Dental status: Teeth decay's prevention or treatment - Other			
q4.2.6	LIFESTYLE Does the study/project/activity collect data about clothing / body adornments?	**Does the study/project/activity collect data about clothing / body adornments?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.6.1	LIFESTYLE Clothing / body adornments: Leather clothing	**Which data were collected regarding clothing / body adornments?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.6.2	LIFESTYLE Clothing / body adornments: Piercing			
q4.2.6.3	LIFESTYLE Clothing / body adornments: Tattoos			
q4.2.6.4	LIFESTYLE Clothing / body adornments: Jewellery			
q4.2.6.other	LIFESTYLE Clothing / body adornments: Other			
q4.2.7	LIFESTYLE Does the study/project/activity collect data about contact with toxic substances?	**Does the study/project/activity collect data about contact with toxic substances?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.7.1	LIFESTYLE Contact with toxic substances: Where	**Which data were collected regarding contact with toxic substances?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.7.2	LIFESTYLE Contact with toxic substances: Type			
q4.2.7.3	LIFESTYLE Contact with toxic substances: Frequency			
q4.2.7.4	LIFESTYLE Contact with toxic substances: Duration			
q4.2.7.5	LIFESTYLE Contact with toxic substances:			

Variable name	Label	Question	Values and codes	Analysis
	Amount			
q4.2.7.other	LIFESTYLE Contact with toxic substances: Other			
q4.2.8	LIFESTYLE Does the study/project/activity collect data about hobbies and holidays?	**Does the study/project/activity collect data about hobbies and holidays?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.8.1	LIFESTYLE Hobbies and holidays: Time spent away from the place of residence	**Which data were collected regarding hobbies and holidays?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.2.8.2	LIFESTYLE Hobbies and holidays: History of holidays away from the city			
q4.2.8.3	LIFESTYLE Hobbies and holidays: Time spent outdoors/indoors			
q4.2.8.4	LIFESTYLE Hobbies and holidays: Hobbies			
q4.2.8.5	LIFESTYLE Hobbies and holidays: Physical activity			
q4.2.8.other	LIFESTYLE Hobbies and holidays: Other			
q4.2.9	LIFESTYLE Does the study/project/activity collect data about other lifestyle aspects?	**Does the study/project/activity collect data about other lifestyle aspects?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.2.9.1.description	LIFESTYLE Data collected about other lifestyle aspects	**Which data were collected regarding other lifestyle aspects?**		For this question, content analysis will be done and results will be reported in a frequency table
q4.3.1	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about health care utilization?	**Does the study/project/activity collect data about health care utilization?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.1.1	HEALTH/DISEASES RELATED DATA Health care utilization: Doctors' visits	**Which data were collected regarding health care**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.1.2	HEALTH/DISEASES RELATED DATA Health care utilization: Previous hospital admissions	utilization?		Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.1.other	HEALTH/DISEASES RELATED DATA Health care utilization: Other			
q4.3.2	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about family health-related history?	**Does the study/project/activity collect data about family health-related history?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.2.1	HEALTH/DISEASES RELATED DATA Family health-related history: Grandparents			This set of variables represents a multiple-choice answer format question.
q4.3.2.2	HEALTH/DISEASES RELATED DATA Family health-related history: Parents	**Which data were collected regarding family members?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.2.3	HEALTH/DISEASES RELATED DATA Family health-related history: Siblings			
q4.3.2.4	HEALTH/DISEASES RELATED DATA Family health-related history: Other family members	**Which data were collected regarding other family members?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.2.4.otherspecify	HEALTH/DISEASES RELATED DATA Family health-related history: Other family members - Specify			
q4.3.2.1.1	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Cystic fibrosis	**Regarding grandparents' health-related history which information was collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.
q4.3.2.1.2	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Phenylketonuria			Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.2.1.3	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Tay-Sachs			frequency table will be produced for this multiple-choice-set.
q4.3.2.1.4	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Albinism			
q4.3.2.1.5	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Thalassemia			
q4.3.2.1.6	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Malignancy			
q4.3.2.1.7	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Respiratory disease			
q4.3.2.1.8	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Allergies			
q4.3.2.1.9	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Cardiovascular diseases			
q4.3.2.1.10	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Diabetes			
q4.3.2.1.11	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Infectious diseases			
q4.3.2.1.12	HEALTH/DISEASES RELATED DATA Grandparents' health-related history: Neurodegenerative diseases			
q4.3.2.1.other	HEALTH/DISEASES RELATED DATA			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Grandparents' health-related history: Other			
q4.3.2.2.1	HEALTH/DISEASES RELATED DATA Parents' health-related history: Cystic fibrosis			
q4.3.2.2.2	HEALTH/DISEASES RELATED DATA Parents' health-related history: Phenylketonuria			
q4.3.2.2.3	HEALTH/DISEASES RELATED DATA Parents' health-related history: Tay-Sachs			
q4.3.2.2.4	HEALTH/DISEASES RELATED DATA Parents' health-related history: Albinism			
q4.3.2.2.5	HEALTH/DISEASES RELATED DATA Parents' health-related history: Thalassemia			This set of variables represents a multiple-choice answer format question.
q4.3.2.2.6	HEALTH/DISEASES RELATED DATA Parents' health-related history: Malignancy	**Regarding parents' health-related history, which information was collected?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.2.2.7	HEALTH/DISEASES RELATED DATA Parents' health-related history: Respiratory disease			
q4.3.2.2.8	HEALTH/DISEASES RELATED DATA Parents' health-related history: Allergies			
q4.3.2.2.9	HEALTH/DISEASES RELATED DATA Parents' health-related history: Cardiovascular diseases			
q4.3.2.2.10	HEALTH/DISEASES RELATED DATA Parents' health-related history: Diabetes			
q4.3.2.2.11	HEALTH/DISEASES RELATED DATA Parents' health-related history: Infectious diseases			
q4.3.2.2.12	HEALTH/DISEASES RELATED DATA Parents' health-related history: Neurodegenerative			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	diseases			
q4.3.2.2.other	HEALTH/DISEASES RELATED DATA Parents' health-related history: Other			
q4.3.2.3.1	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Cystic fibrosis	**Regarding siblings' health-related history, which information was collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.2.3.2	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Phenylketonuria			
q4.3.2.3.3	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Tay-Sachs			
q4.3.2.3.4	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Albinism			
q4.3.2.3.5	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Thalassemia			
q4.3.2.3.6	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Malignancy			
q4.3.2.3.7	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Respiratory disease			
q4.3.2.3.8	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Allergies			
q4.3.2.3.9	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Cardiovascular diseases			
q4.3.2.3.10	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Diabetes			
q4.3.2.3.11	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Infectious diseases			

Variable name	Label	Question	Values and codes	Analysis
q4.3.2.3.12	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Neurodegenerative diseases			
q4.3.2.3.other	HEALTH/DISEASES RELATED DATA Siblings' health-related history: Other			
q4.3.2.4.1	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Cystic fibrosis			
q4.3.2.4.2	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Phenylketonuria			
q4.3.2.4.3	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Tay-Sachs			
q4.3.2.4.4	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Albinism			This set of variables represents a multiple-choice answer format question.
q4.3.2.4.5	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Thalassemia	**Regarding other family members health-related history, which information was collected?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.2.4.6	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Malignancy			
q4.3.2.4.7	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Respiratory disease			
q4.3.2.4.8	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Allergies			
q4.3.2.4.9	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Cardiovascular diseases			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.2.4.10	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Diabetes			
q4.3.2.4.11	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Infectious diseases			
q4.3.2.4.12	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Neurodegenerative diseases			
q4.3.2.4.other	HEALTH/DISEASES RELATED DATA Other family members' health-related history: Other			
q4.3.3	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about medical history of the participant?	**Does the study/project/activity collect data about medical history of the participant?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.3.1.1	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease	**Regarding participants' health-related history, which information was collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.3.3.1.2	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Infectious disease			
q4.3.3.1.3	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Cardiovascular disease			
q4.3.3.1.4	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Respiratory disease			
q4.3.3.1.5	HEALTH/DISEASES RELATED DATA Medical			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	history of the participant: Participants' health-related history - Malignantdisease			
q4.3.3.1.6	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Menstrual disorders			
q4.3.3.1.7	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Mental/psychiatric disorder			
q4.3.3.1.8	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Neurodegenerative disease			
q4.3.3.1.9	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Airway diseases			
q4.3.3.1.10	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies			
q4.3.3.1.11	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Ear diseases			
q4.3.3.1.12	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Hearing problems			
q4.3.3.1.13	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Urinary infections			
q4.3.3.1.14	HEALTH/DISEASES RELATED DATA Medical			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	history of the participant: Participants' health-related history - Other renal disorders			
q4.3.3.1.15	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Auto-immune disorders			
q4.3.3.1.16	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Acute infections			
q4.3.3.1.17	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Cancer			
q4.3.3.1.18	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Reproductive/reproduction diseases/disorders			
q4.3.3.1.other	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Other			
q4.3.3.1.1.1	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease: Cystic fibrosis	Which data were collected regarding genetic disease?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q4.3.3.1.1.2 | HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease: Phenylketonuria | | | |
| q4.3.3.1.1.3 | HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health- | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	related history - Genetic disease: Tay-Sachs			
q4.3.3.1.1.4	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease: Albinism			
q4.3.3.1.1.5	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease: Thalassemia			
q4.3.3.1.1.other	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Genetic disease: Other			
q4.3.3.1.8.1	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Neurodegenerative disease: Alzheimer's disease	**Which data were collected regarding neurodegenerative disease?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.3.3.1.8.2	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Neurodegenerative disease: Parkinson's disease			
q4.3.3.1.8.3	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Neurodegenerative disease: Huntington's disease			
q4.3.3.1.8.4	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Neurodegenerative disease: Amyotrophic lateral sclerosis			
q4.3.3.1.8.other	HEALTH/DISEASES RELATED DATA Medical			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	history of the participant: Participants' health-related history - Neurodegenerative disease: Other			
q4.3.3.1.9.1	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Airway diseases - Bronchitis	Which data were collected regarding airway diseases?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.3.1.9.2	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Airway diseases - Asthma			
q4.3.3.1.9.3	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Airway diseases - COPD			
q4.3.3.1.9.other	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Airway diseases - Other			
q4.3.3.1.10.1	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies: Allergic rhinitis	Which data were collected regarding allergies?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.3.1.10.2	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies: Atopic dermatitis			
q4.3.3.1.10.3	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies: Eczema			
q4.3.3.1.10.4	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies: Hay fever			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.3.1.10.other	HEALTH/DISEASES RELATED DATA Medical history of the participant: Participants' health-related history - Allergies: Other			
q4.3.4	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about specific stages of life?	**Does the study/project/activity collect data about specific stages of life?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.4.1	HEALTH/DISEASES RELATED DATA Specific stages of life: Newborn disorders	**Which data were collected regarding specific stages of life?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.4.2	HEALTH/DISEASES RELATED DATA Specific stages of life: Perinatal problems			
q4.3.4.3	HEALTH/DISEASES RELATED DATA Specific stages of life: Low birth weight			
q4.3.4.4	HEALTH/DISEASES RELATED DATA Specific stages of life: APGAR score			
q4.3.4.5	HEALTH/DISEASES RELATED DATA Specific stages of life: Congenital malformations			
q4.3.4.6	HEALTH/DISEASES RELATED DATA Specific stages of life: Infant or childhood development disorders			
q4.3.4.7	HEALTH/DISEASES RELATED DATA Specific stages of life: Gestational age			
q4.3.4.8	HEALTH/DISEASES RELATED DATA Specific stages of life: Conception difficulties			
q4.3.4.9	HEALTH/DISEASES RELATED DATA Specific stages of life: Miscarriage			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.4.10	HEALTH/DISEASES RELATED DATA Specific stages of life: Induced abortion			
q4.3.4.11	HEALTH/DISEASES RELATED DATA Specific stages of life: Foetal death			
q4.3.4.12	HEALTH/DISEASES RELATED DATA Specific stages of life: Labour complications			
q4.3.4.13	HEALTH/DISEASES RELATED DATA Specific stages of life: Premature rupture of membranes			
q4.3.4.14	HEALTH/DISEASES RELATED DATA Specific stages of life: Other pregnancy complications			
q4.3.4.15	HEALTH/DISEASES RELATED DATA Specific stages of life: Premenopause-related data			
q4.3.4.16	HEALTH/DISEASES RELATED DATA Specific stages of life: Menopause-related data			
q4.3.4.17	HEALTH/DISEASES RELATED DATA Specific stages of life: Postmenopause related data			
q4.3.5	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about pregnancy or delivery?	**Does the study/project/activity collect data about pregnancy or delivery?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.5.1	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Health before and during pregnancy	**Which data were collected regarding pregnancy or delivery?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this |
| q4.3.5.2 | HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Health before and during birth | | | |
| q4.3.5.3 | HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Maternal smoking | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.5.4	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Medication			multiple-choice-set.
q4.3.5.5	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Duration of pregnancy			
q4.3.5.6	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Parity			
q4.3.5.7	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Previous voluntary abortions			
q4.3.5.8	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Previous miscarriages			
q4.3.5.9	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Twins			
q4.3.5.10	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Foetal ultrasound			
q4.3.5.11	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Follow-up after delivery			
q4.3.5.other	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Other			
q4.3.5.10.1	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Foetal ultrasound - Body proportions	Which data were collected regarding foetal ultrasound?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.5.10.2	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Foetal ultrasound - Placental function			
q4.3.5.10.3	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Foetal ultrasound - Organ development (brain, heart, kidney, ...)			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.5.10.other	HEALTH/DISEASES RELATED DATA Pregnancy or delivery: Foetal ultrasound - Other			
q4.3.6	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about new born / infant biometry/health?	**Does the study/project/activity collect data about new born / infant biometry/health?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.6.1	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Sex	**Which data were collected regarding new born / infant biometry/health?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.6.2	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Weight			
q4.3.6.3	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Length			
q4.3.6.4	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Health status			
q4.3.6.5	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - APGAR score			
q4.3.6.6	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Perinatal complications			
q4.3.6.7	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Neonatal respiratory problems			
q4.3.6.8	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Birth defects			
q4.3.6.9	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Hospital admissions			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.6.10	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Medication			
q4.3.6.other	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Other			
q4.3.6.5.1.description	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - APGAR score: Moment of measurement of the APGAR score	Please specify the moment of measurement of the APGAR score		For this question, content analysis will be done and results will be reported in a frequency table
q4.3.6.8.1	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Birth defects: Urogenital			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.3.6.8.2	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Birth defects: Heart	Which data were collected regarding birth defects?	No – 0 Yes – 1	
q4.3.6.8.3	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Birth defects: Kidneys			
q4.3.6.8.other	HEALTH/DISEASES RELATED DATA New born / infant biometry/health - Birth defects: Other			
q4.3.7	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about unspecified health complaints?	Does the study/project/activity collect data about unspecified health complaints?	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.7.1	HEALTH/DISEASES RELATED DATA Unspecified health complaints: Headache			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this |
| q4.3.7.2 | HEALTH/DISEASES RELATED DATA Unspecified health complaints: Wheezing | Which data were collected regarding unspecified health complaints? | No – 0 Yes – 1 | |
| q4.3.7.3 | HEALTH/DISEASES RELATED DATA Unspecified health complaints: Deficiency of concentration | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.3.7.4	HEALTH/DISEASES RELATED DATA Unspecified health complaints: Absence of appetite			multiple-choice-set.
q4.3.7.5	HEALTH/DISEASES RELATED DATA Unspecified health complaints: Menstrual disorders			
q4.3.7.other	HEALTH/DISEASES RELATED DATA Unspecified health complaints: Other			
q4.3.8	HEALTH/DISEASES RELATED DATA Does the study/project/activity collect data about accidents?	**Does the study/project/activity collect data about accidents?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.3.8.1	HEALTH/DISEASES RELATED DATA Accidents: Leisure			This set of variables represents a multiple-choice answer format question.
q4.3.8.2	HEALTH/DISEASES RELATED DATA Accidents: Domestic	**Which data were collected regarding accidents?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.3.8.3	HEALTH/DISEASES RELATED DATA Accidents: Occupational			
q4.3.8.other	HEALTH/DISEASES RELATED DATA Accidents: Other			
q4.4.1	PARENTAL EXPOSURE Does the study/project/activity collect data about exposure during pregnancy and/or breastfeeding?	**Does the study/project/activity collect data about exposure during pregnancy and/or breastfeeding?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.4.1.1.1	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Periconceptional period - Parental medication	**Which data were collected regarding the periconceptional period?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.
q4.4.1.1.other	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding:			Therefore, a variable set for multiple response analysis will be created, for

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Periconceptional period - Other			descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.4.1.2.1	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Pregnancy and delivery - Alcohol use during pregnancy			
q4.4.1.2.2	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Pregnancy and delivery - Smoking during pregnancy			This set of variables represents a multiple-choice answer format question.
q4.4.1.2.3	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Pregnancy and delivery - Medication during pregnancy	Which data were collected regarding pregnancy and delivery?	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.4.1.2.4	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Pregnancy and delivery - Medication during delivery			
q4.4.1.2.other	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Pregnancy and delivery - Other			
q4.4.1.3.1	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Breastfeeding - Duration of breastfeeding			This set of variables represents a multiple-choice answer format question.
q4.4.1.3.2	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Breastfeeding - Alcohol use during breastfeeding	Which data were collected regarding breastfeeding?	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.4.1.3.3	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Breastfeeding - Smoking during breastfeeding			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.4.1.3.4	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Breastfeeding - Medication during breastfeeding			
q4.4.1.3.other	PARENTAL EXPOSURE Exposure during pregnancy and/or breastfeeding: Breastfeeding - Other			
q4.4.2	PARENTAL EXPOSURE Does the study/project/activity collect data about occupational exposure?	**Does the study/project/activity collect data about occupational exposure?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.4.2.1	PARENTAL EXPOSURE Occupational exposure: Mother			
q4.4.2.2	PARENTAL EXPOSURE Occupational exposure: Father			
q4.4.2.3	PARENTAL EXPOSURE Occupational exposure: Other family member			
q4.4.2.4	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Phthalates / DINCH			This set of variables represents a multiple-choice answer format question.
q4.4.2.5	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Bisphenols	**Which data were collected regarding occupational exposure?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.4.2.6	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Per-/Polyfluorinated compounds			
q4.4.2.7	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Flame Retardants			
q4.4.2.8	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Cadmium			

Variable name	Label	Question	Values and codes	Analysis
q4.4.2.9	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Chromium VI			
q4.4.2.10	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to PAHs			
q4.4.2.11	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Anilin family: Anilines, MOCA			
q4.4.2.12	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Chemical mixtures			
q4.4.2.13	PARENTAL EXPOSURE Occupational exposure: Occupational exposure to Emerging chemicals			
q4.4.2.other	PARENTAL EXPOSURE Occupational exposure: Other			
q4.4.3	PARENTAL EXPOSURE Does the study/project/activity collect data about other types of exposure?	**Does the study/project/activity collect data about other types of exposure?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.4.3.1.1	PARENTAL EXPOSURE Other types of exposure: Parental smoking - Number of cigarettes, cigars or pipes smoked in the house	**Which data were collected regarding parental smoking?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.4.3.1.2	PARENTAL EXPOSURE Other types of exposure: Parental smoking - X-ray exposure			
q4.4.3.1.other	PARENTAL EXPOSURE Other types of exposure: Parental smoking - Other			
q4.5.1	MEDICATION Does the study/project/activity collect data about medication during pregnancy, delivery or breastfeeding?	**Does the study/project/activity collect data about**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
		medication during pregnancy, delivery or breastfeeding?		
q4.5.1.1.1	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during pregnancy - Vitamins	**Which data were collected regarding medication during pregnancy?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.5.1.1.2	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during pregnancy - Minerals			
q4.5.1.1.3	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during pregnancy - Preparations for immunity			
q4.5.1.1.other	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during pregnancy - Other			
q4.5.1.2	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during delivery	**Which data were collected regarding medication during delivery?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.5.1.3	MEDICATION Medication during pregnancy, delivery or breastfeeding: Medication during breastfeeding	**Which data were collected regarding medication during breastfeeding?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.5.1.4	MEDICATION Medication during pregnancy, delivery or breastfeeding: Other medication	**Which data were collected regarding other medication?**		
q4.5.2	MEDICATION Does the study/project/activity collect data about medication administered to or taken by children or adolescents?	**Does the study/project/activity collect data about medication administered to or taken by children or**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
		adolescents?		
q4.5.2.1	MEDICATION Medication administered to or taken by children or adolescents: History of medication of child			
q4.5.2.2	MEDICATION Medication administered to or taken by children or adolescents: Antibiotics by the infant			This set of variables represents a multiple-choice answer format question.
q4.5.2.3	MEDICATION Medication administered to or taken by children or adolescents Antibiotics by the child	**Which data were collected regarding medication administered to or taken by children or adolescents?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.5.2.4	MEDICATION Medication administered to or taken by children or adolescents: Drug use of the adolescent			
q4.5.2.other	MEDICATION Medication administered to or taken by children or adolescents: Other			
q4.5.3	MEDICATION Does the study/project/activity collect data about permanent or acute medication for respiratory or allergic diseases?	**Does the study/project/activity collect data about permanent or acute medication for respiratory or allergic diseases?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.5.3.1	MEDICATION Permanent or acute medication for respiratory or allergic diseases: Asthma			This set of variables represents a multiple-choice answer format question.
q4.5.3.2	MEDICATION Permanent or acute medication for respiratory or allergic diseases: Allergic rhinitis	**Which data were collected regarding permanent or acute medication for respiratory or allergic diseases?**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A
q4.5.3.3	MEDICATION Permanent or acute medication for respiratory or allergic diseases: Atopic dermatitis			frequency table will be produced for this

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q4.5.3.other	MEDICATION Permanent or acute medication for respiratory or allergic diseases: Other			multiple-choice-set.
q4.6.1	SOCIO-ECONOMIC FACTORS Does the study/project/activity collect data about socio-demographic and/or socio-economic factors?	**Does the study/project/activity collect data about socio-demographic and/or socio-economic factors?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q4.6.1.1	SOCIO-ECONOMIC FACTORS General socio-demographics: Age	**Which general socio-demographics data was collected?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q4.6.1.2	SOCIO-ECONOMIC FACTORS General socio-demographics: Sex			
q4.6.1.3	SOCIO-ECONOMIC FACTORS General socio-demographics: Country of birth			
q4.6.1.4	SOCIO-ECONOMIC FACTORS General socio-demographics: Ethnic origin			
q4.6.1.5	SOCIO-ECONOMIC FACTORS General socio-demographics: Area of residence			
q4.6.1.6	SOCIO-ECONOMIC FACTORS General socio-demographics: Workplace area/address			
q4.6.1.other	SOCIO-ECONOMIC FACTORS General socio-demographics: Other			
q4.6.2.1	SOCIO-ECONOMIC FACTORS Family structure: Civil status	**Which data were collected regarding family structure?**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A
q4.6.2.2	SOCIO-ECONOMIC FACTORS Family structure: Number of children			
q4.6.2.3	SOCIO-ECONOMIC FACTORS Family structure:			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Presence of extended family in the house			frequency table will be produced for this multiple-choice-set.
q4.6.2.other	SOCIO-ECONOMIC FACTORS Family structure: Other			
q4.6.3.1	SOCIO-ECONOMIC FACTORS Employment status and income: Profession	Which data were collected regarding employment status and income	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.6.3.2	SOCIO-ECONOMIC FACTORS Employment status and income: Employment status			
q4.6.3.3	SOCIO-ECONOMIC FACTORS Employment status and income: Family income			
q4.6.3.other	SOCIO-ECONOMIC FACTORS Employment status and income: Other			
q4.6.4.1	SOCIO-ECONOMIC FACTORS Education: Educational level of parents	Which data were collected regarding education?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q4.6.4.2	SOCIO-ECONOMIC FACTORS Education: Educational level of children			
q4.6.4.3	SOCIO-ECONOMIC FACTORS Education: School achievements of child attending school			
q4.6.4.other	SOCIO-ECONOMIC FACTORS Education: Other			
q4.6.5.1	SOCIO-ECONOMIC FACTORS Other socio-demographic and/or socio-economic: Social support	Which other socio-demographic and/or socio-economic data were collected?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q4.6.5.2 | SOCIO-ECONOMIC FACTORS Other socio-demographic and/or socio-economic: Social network | | | |
| q4.6.5.3 | SOCIO-ECONOMIC FACTORS Other socio-demographic and/or socio-economic: Leisure | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	activities			
q4.6.5.other	SOCIO-ECONOMIC FACTORS Other socio-demographic and/or socio-economic: Other			
q4.7.description	OTHER DATA	**Which other data were collected?**		For this question, content analysis will be done and results will be reported in a frequency table
5. QUALITY CONTROL PROCEDURES				
q5.1.1	Pre-analytical Quality Assurance/Quality Control: Standard Operating Procedures	**Pre-analytical Quality Assurance/Quality Control (QA/QC)**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q5.1.2	Pre-analytical Quality Assurance/Quality Control: Trained fieldworkers			
q5.1.3	Pre-analytical Quality Assurance/Quality Control: Control of background contamination in the sampling material			
q5.1.4	Pre-analytical Quality Assurance/Quality Control: Control of the transport conditions			
q5.1.5	Pre-analytical Quality Assurance/Quality Control: Control of background contamination in the conservation material			
q5.1.6	Pre-analytical Quality Assurance/Quality Control: Identification/traceability of the samples			
q5.1.7	Pre-analytical Quality Assurance/Quality Control: Criteria for acceptation/rejection of the samples			
q5.1.8	Pre-analytical Quality Assurance/Quality Control: Use of field blanks			
q5.1.9	Pre-analytical Quality Assurance/Quality Control:			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Setting the conditions for sample storage			
q5.1.other	Pre-analytical Quality Assurance/Quality Control: Other			
q5.2.1.1	Internal QA/QC: Identification of critical phases - Quality control samples	**Internal QA/QC: Identification of critical phases**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.2.1.2	Internal QA/QC: Identification of critical phases - Blank matrix for calibration			
q5.2.1.3	Internal QA/QC: Identification of critical phases - Pre-treatment of samples			
q5.2.1.4	Internal QA/QC: Identification of critical phases - Analytical technique			
q5.2.1.5	Internal QA/QC: Identification of critical phases - Reference materials			
q5.2.1.6	Internal QA/QC: Identification of critical phases - Process control			
q5.2.1.7	Internal QA/QC: Identification of critical phases - Instrument calibration			
q5.2.1.8	Internal QA/QC: Identification of critical phases - Internal proficiency testing (blind samples)			
q5.2.1.9	Internal QA/QC: Identification of critical phases - Reporting of analytical data			
q5.2.1.other	Internal QA/QC: Identification of critical phases - Other			
q5.2.2.1.1	Internal QA/QC: Quality control procedures - Internal quality control procedures: Routine	**Internal QA/QC: Quality control procedures -**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	checking of equipment	**Internal quality control procedures**		Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.2.2.1.2	Internal QA/QC: Quality control procedures - Internal quality control procedures: Routine calibration of equipment			
q5.2.2.1.3	Internal QA/QC: Quality control procedures - Internal quality control procedures: Routine checking of culture media			
q5.2.2.1.4	Internal QA/QC: Quality control procedures - Internal quality control procedures: Routine checking of water			
q5.2.2.1.5	Internal QA/QC: Quality control procedures - Internal quality control procedures: Routine checking of analytical reagents			
q5.2.2.1.6	Internal QA/QC: Quality control procedures - Internal quality control procedures: Blinded quality controls			
q5.2.2.1.other	Internal QA/QC: Quality control procedures - Internal quality control procedures: Other			
q5.2.2.2.1	Internal QA/QC: Quality control procedures - Standard operating procedures: Sample preparation	**Internal QA/QC: Quality control procedures - Standard operating procedures**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.2.2.2.2	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods			
q5.2.2.2.3	Internal QA/QC: Quality control procedures - Standard operating procedures: Storage and retention of records and materials			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q5.2.2.2.other	Internal QA/QC: Quality control procedures - Standard operating procedures: Other			
q5.2.2.2.2.1	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Replication measures			
q5.2.2.2.2.2	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Methods validation			
q5.2.2.2.2.3	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Laboratory/Reagent blanks			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q5.2.2.2.2.4 | Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Use of reference materials | **Which data were collected regarding analytical methods?** | No – 0
Yes – 1 | |
q5.2.2.2.2.5	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Training according to detailed manual			
q5.2.2.2.2.6	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Use of standard laboratory / uniform methods			
q5.2.2.2.2.7	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Waste disposal			
q5.2.2.2.2.8	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Use of commercial standards of			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	precision and accuracy			
q5.2.2.2.2.other	Internal QA/QC: Quality control procedures - Standard operating procedures: Analytical methods - Other			
q5.2.2.3.1	Internal QA/QC: Quality control procedures - Intra-laboratory tests: Sampling instruments	Internal QA/QC: Quality control procedures - Intra-laboratory tests	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q5.2.2.3.2 | Internal QA/QC: Quality control procedures - Intra-laboratory tests: Sample measurements | | | |
| q5.2.2.4 | Internal QA/QC: Quality control procedures - Other data collected | Internal QA/QC: Quality control procedures - Other data collected | | For this question, content analysis will be done and results will be reported in a frequency table |
| q5.2.3.1 | Internal QA/QC: Other inter / intra laboratory testing - Calibration according to manufacturer's instructions | Internal QA/QC: Other inter / intra laboratory testing | No – 0 Yes – 1 | This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q5.2.3.2	Internal QA/QC: Other inter / intra laboratory testing - Inter-laboratory assessment for dioxin-activity			
q5.2.3.3	Internal QA/QC: Other inter / intra laboratory testing - Field duplicates			
q5.2.3.4	Internal QA/QC: Other inter / intra laboratory testing - Field blanks			
q5.2.3.5	Internal QA/QC: Other inter / intra laboratory testing - Field visits of supervisors			
q5.2.3.6	Internal QA/QC: Other inter / intra laboratory			

Variable name	Label	Question	Values and codes	Analysis
	testing - Inter-laboratory quality control available for contracting analytical laboratories			
q5.2.3.other	Internal QA/QC: Other inter / intra laboratory testing - Other			
q5.3.1.1	External QA/QC: Round-robin test - PCB			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q5.3.1.2 | External QA/QC: Round-robin test - ttMA | | | |
| q5.3.1.3 | External QA/QC: Round-robin test - VOC | External QA/QC: Round-robin test | No – 0
Yes – 1 | |
q5.3.1.4	External QA/QC: Round-robin test - Heavy metals			
q5.3.1.5	External QA/QC: Round-robin test - Mould fungi			
q5.3.1.other	External QA/QC: Round-robin test - Other			
q5.3.2.1	External QA/QC: Quality control programs - International institutions			This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q5.3.2.2 | External QA/QC: Quality control programs - National institutions | | | |
| q5.3.2.3 | External QA/QC: Quality control programs - Proficiency tests | | | |
| q5.3.2.4 | External QA/QC: Quality control programs - Certified reference materials | External QA/QC: Quality control programs | No – 0
Yes – 1 | |
q5.3.2.5	External QA/QC: Quality control programs - Duplicate analysis, through different methods			
q5.3.2.6	External QA/QC: Quality control programs - Inter-laboratory comparison exercises			
q5.3.2.7	External QA/QC: Quality control programs - External Quality Assurance Scheme			

Variable name	Label	Question	Values and codes	Analysis
q5.3.2.other	External QA/QC: Quality control programs - Other			
q5.3.3.1.1	External QA/QC: National external Quality Assessment Schemes - Accreditation: Inspection of non-accredited laboratories	External QA/QC: Accreditation	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.3.3.1.2	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited laboratory			
q5.3.3.1.3	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited for certain analysis			
q5.3.3.1.2.1	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited laboratory - Type of accreditation: National	External QA/QC: Type of accreditation	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.3.3.1.2.2	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited laboratory - ISO 17025			
q5.3.3.1.2.other	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited laboratory - Other			
q5.3.3.1.3.1	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited for certain analysis of - Lead	External QA/QC: For which analysis is the laboratory accredited?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.3.3.1.3.2	External QA/QC: National external Quality Assessment Schemes - Accreditation: Accredited for certain analysis of - Cadmium			
q5.3.3.1.3.other	External QA/QC: National external Quality			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Assessment Schemes - Accreditation: Accredited for certain analysis of - Other			
q5.3.3.2.1	External QA/QC: National external Quality Assessment Schemes - Certification: Phthalates/DINCH	External QA/QC: Certification	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q5.3.3.2.2	External QA/QC: National external Quality Assessment Schemes - Certification: Bisphenols			
q5.3.3.2.3	External QA/QC: National external Quality Assessment Schemes - Certification: Per-/Polyfluorinated compounds			
q5.3.3.2.4	External QA/QC: National external Quality Assessment Schemes - Certification: Flame Retardants			
q5.3.3.2.5	External QA/QC: National external Quality Assessment Schemes - Certification: Cd, Cr			
q5.3.3.2.6	External QA/QC: National external Quality Assessment Schemes - Certification: PAHs			
q5.3.3.2.7	External QA/QC: National external Quality Assessment Schemes - Certification: Anilin family: Anilines, MOCA			
q5.3.3.2.8	External QA/QC: National external Quality Assessment Schemes - Certification: Chemicals mixtures			
q5.3.3.2.9	External QA/QC: National external Quality Assessment Schemes - Certification: Emerging chemicals			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q5.3.3.2.other	External QA/QC: National external Quality Assessment Schemes - Certification: Other			
q5.3.3.3	External QA/QC: National external Quality Assessment Schemes - Other	**Specify other national external quality assessment schemes**		For this question, content analysis will be done and results will be reported in a frequency table
6. DATA ANALYSIS				
q6.1.1	Descriptive analysis: Mean	**Descriptive analysis**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q6.1.2	Descriptive analysis: Median			
q6.1.3	Descriptive analysis: Percentiles			
q6.1.4	Descriptive analysis: Measures of dispersion			
q6.1.5	Descriptive analysis: Incidence and prevalence rates			
q6.1.other	Descriptive analysis: Other			
q6.2.1	Bivariate analysis: Measures of association (coefficient of correlation, odds ratio, relative risk, ...)	**Bivariate analysis**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
| q6.2.2 | Bivariate analysis: Effect size estimation | | | |
| q6.2.other | Bivariate analysis: Other | | | |
| q6.3.1 | Stratification procedures: Comparison across areas | **Stratification procedures** | No – 0 Yes – 1 | This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A |
| q6.3.2 | Stratification procedures: Gender or age-groups stratification | | | |
| q6.3.3 | Stratification procedures: Socio-economic | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	stratification			frequency table will be produced for this multiple-choice-set.
q6.3.other	Stratification procedures: Other			
q6.4	Geo-temporal analysis	**Geo-temporal analysis**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q6.5	Survival analysis or repeated measures analysis	**Survival analysis or repeated measures analysis**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q6.6.1	Multivariate analysis: Linear regression analysis	**Multivariate analysis**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q6.6.2	Multivariate analysis: Multiple logistic regression analysis			
q6.6.other	Multivariate analysis: Other			
q6.other	Other type of analyses	**Other type of analyses**		For this question, content analysis will be done and results will be reported in a frequency table
7. DATA PROTECTION, AVAILABILITY AND CONDITIONS OF ACCESS AND USE				
q7.1.1.1	DATA PROTECTION Nature of personal data: Anonymous	**Data protection: Nature of personal data**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q7.1.1.2	DATA PROTECTION Nature of personal data: Pseudonymised			
q7.1.1.3	DATA PROTECTION Nature of personal data: Fully identifiable			
q7.1.1.other	DATA PROTECTION Nature of personal data: Other			
q7.1.2.1.1	DATA PROTECTION Methods to protect personal data: At data collection - Coded	**Data protection: At data collection**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Variable name	Label	Question	Values and codes	Analysis
	questionnaires/forms			Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q7.1.2.1.2	DATA PROTECTION Methods to protect personal data: At data collection - Samples anonymised/pseudonymised			
q7.1.2.1.other	DATA PROTECTION Methods to protect personal data: At data collection - Other			
q7.1.2.2.1	DATA PROTECTION Methods to protect personal data: At data storage -: Databases protection	**Data protection: At data storage**	No – 0￼ Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q7.1.2.2.2	DATA PROTECTION Methods to protect personal data: At data storage -: Deleted/destroyed at the end of the study			
q7.1.2.2.1.1	DATA PROTECTION Methods to protect personal data: At data storage -: Databases protection - 1995 EC Data Protection	**Data protection: At data storage - databases protection**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q7.1.2.2.1.2	DATA PROTECTION Methods to protect personal data: At data storage -: Databases protection - National legislation			
q7.1.2.2.1.other	DATA PROTECTION Methods to protect personal data: At data storage -: Databases protection - Other			
q7.1.2.3	DATA PROTECTION Methods to protect personal data: Deleted/destroyed at the end of the study - When?	**Data protection: At data storage - Deleted/destroyed at the end of the study When?**		For this question, content analysis will be done and results will be reported in a frequency table

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q7.2.1	NON-BIOLOGICAL DATA - CONDITIONS OF ACCESS AND USE Intellectual property rights	**Non-biological data: Intellectual property rights**	1 – Patents 2 – Data property 3 – Data available to other members of consortium 4 – Data available by request 5 – Other	For this single-answer format question, a frequency table will be produced
q7.2.other	NON-BIOLOGICAL DATA - CONDITIONS OF ACCESS AND USE Intellectual property rights: Other			The variable representing the open category "other" will be recoded into extra values and included in the above options
q7.2.2	NON-BIOLOGICAL DATA - CONDITIONS OF ACCESS AND USE Data access	**Non-biological data: Data access**	1 – No access is possible 2 – Partial access to database 3 – Access to total database	For this single-answer format question, a frequency table will be produced
q7.2.3.1	NON-BIOLOGICAL DATA - CONDITIONS OF ACCESS AND USE Type of access: Direct online access - website	**Non-biological data: Please indicate the type of access - Direct online access**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q7.2.3.1.coment	Type of access: Comment			
q7.2.3.2	Type of access: By request - how to apply the request	**Non-biological data: Please indicate the type of access - By request**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q7.2.3.2.coment	Type of access: Comment			
q7.3.1	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Does the study/project/activity has biobanked samples?	**Does the study/project/activity has biobanked samples?**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q7.3.2.1	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Blood			
q7.3.2.2	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Blood erythrocytes			
q7.3.2.3	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Blood cells isolates (PMBC)			
q7.3.2.4	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Plasma	Type of biological samples / matrix	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q7.3.2.5	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Serum			
q7.3.2.6	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Saliva			
q7.3.2.7	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Buccal cell			
q7.3.2.8	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Nails			
q7.3.2.9	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	biological samples / matrix: DNA			
q7.3.2.10	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Cells lines			
q7.3.2.11	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: 12-hours overnight urine			
q7.3.2.12	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Urine (24h)			
q7.3.2.13	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Urine (spot sample - random)			
q7.3.2.14	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Urine (spot sample – first morning)			
q7.3.2.15	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Human milk			
q7.3.2.16	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Hair (chopped/lyophilised sample)			
q7.3.2.17	BIOLOGICAL SAMPLES - AVAILABILITY AND			

Variable name	Label	Question	Values and codes	Analysis
	CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Hair (complete locks)			
q7.3.2.18	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Fat/adipose tissue			
q7.3.2.19	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Placenta			
q7.3.2.20	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Umbilical cord blood			
q7.3.2.other	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Type of biological samples / matrix: Other			
q7.3.2.otherdescription	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Other biological sample	**Please specify the other biological sample mentioned above**		For this question, content analysis will be done and results will be reported in a frequency table
q7.3.4.exceldownload	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Excel download	**Please download, fill out and upload the excel sheet bellow and continue with the following questions**		
q7.3.4.excelupload	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Excel upload		0 –Does not exist excel-based extra info 1 – Exists excel-based extra info	
q7.3.5	BIOLOGICAL SAMPLES - AVAILABILITY AND CONDITIONS OF ACCESS AND USE Access and use of biobanked samples	**Biological samples: Access and use of biobanked samples**	1 – No access at all 2 – Access (only for consultation) for other researchers/organizatio	For this single-answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
			ns 3 – Access and use for other researchers/ organizations	
q7.4.1	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Access to analytical standards to detect biomarkers	**Biomarkers and other parameters: Access to analytical standards to detect biomarkers**	1 – No access at all 2 – Access for other researchers/organizatio ns	For this single-answer format question, a frequency table will be produced
q7.4.2	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Access and use of biomarkers and other parameters	**Biomarkers and other parameters: Access and use of biomarkers and other parameters**	1 – No access at all 2 – Access for IPCheM* (only for consultation) 3 – Access (only for consultation) for other researchers/organizatio ns 4 – Access and use for IPCheM 5 – Access and use for other researchers/ organizations	For this single-answer format question, a frequency table will be produced
q7.4.3.1	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Aggregation level of data: Metadata	**Biomarkers and other parameters: Aggregation level of data**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q7.4.3.2	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Aggregation level of data: Aggregated data (by gender, age groups, population type, ...)			
q7.4.3.3	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Aggregation level of data: Filtered/generalized single			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	measurement data with key parameters			
q7.4.3.4	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Aggregation level of data: Single measurement data with additional relevant parameters			
q7.4.4.description	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Licence of use	**Biomarkers and other parameters: Licence of use**		
q7.4.5.description	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Access conditions	**Biomarkers and other parameters: Access conditions**		
q7.4.6.description	BIOMARKERS AND OTHER PARAMETERS - CONDITIONS OF ACCESS AND USE Text for acknowledgement /disclaimer	**Biomarkers and other parameters: Text for acknowledgement /disclaimer**		
8. COMMUNICATION				
q8.1.1	Report of results to: Public Authority	**Reporting results to Public Authority**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.1	Report of results to: Public Authority - EU authorities	**Please indicate the Public Autority(s) to whom the results where reported: EU authorities**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.1.frequencyand comment	Report of results to: Public Authority - EU authorities - Frequency and Comment			For this question, content analysis will be done and results will be reported in a frequency table
q8.1.1.2	Report of results to: Public Authority - National authorities	**Please indicate the Public Autority(s) to whom the results where reported: National authorities**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.2.frequencyand comment	Report of results to: Public Authority - National authorities - Frequency and Comment			For this question, content analysis will be done and results will be reported in a frequency table

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q8.1.1.3	Report of results to: Public Authority - Federal authorities	**Please indicate the Public Autority(s) to whom the results where reported: Federal authorities**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.3.frequencyandcomment	Report of results to: Public Authority - Federal authorities - Frequency and Comment			For this question, content analysis will be done and results will be reported in a frequency table
q8.1.1.4	Report of results to: Public Authority - Local authorities	**Please indicate the Public Autority(s) to whom the results where reported: Local authorities**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.4.frequencyandcomment	Report of results to: Public Authority - Local authorities - Frequency and Comment			For this question, content analysis will be done and results will be reported in a frequency table
q8.1.1.5	Report of results to: Public Authority - Other	**Please indicate the Public Autority(s) to whom the results where reported: Other**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.1.5.frequencyandcomment	Report of results to: Public Authority - Other - Frequency and Comment			For this question, content analysis will be done and results will be reported in a frequency table
q8.1.2	Report of results to: Study participants	**Reporting results to study participants**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.2.1	Report of results to: Study participants - Personalized Reports	**Please indicate how results were reported to the study's participants**	No – 0 Yes – 1	For this question, content analysis will be done and results will be reported in a frequency table
q8.1.2.2	Report of results to: Study participants - Individual results compared with health guideline values			
q8.1.2.3	Report of results to: Study participants - Participant referred to appropriate help if problem was identified			
q8.1.2.4	Report of results to: Study participants - Study findings presented to participants at targeted workshops			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q8.1.2.5	Report of results to: Study participants - Hotline			
q8.1.2.other	Report of results to: Study participants - Other			
q8.1.3	Report of results to: Health Institutions	**Reporting results to Health Institutions**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.3.1	Report of results to: Health Institutions - Health care centre	**Please indicate the Health Institutions to whom the results where reported**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q8.1.3.2	Report of results to: Health Institutions - Lactariums			
q8.1.3.3	Report of results to: Health Institutions - Maternity hospitals			
q8.1.3.4	Report of results to: Health Institutions - Involved hospitals			
q8.1.3.5	Report of results to: Health Institutions - Involved policlinics			
q8.1.3.other	Report of results to: Health Institutions - Other			
q8.1.4	Report of results to: Scientific community	**Reporting results to scientific community**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.4.1	Report of results to: Scientific community - Published through report form	**Please indicate how the results were reported to the scientific community**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q8.1.4.2	Report of results to: Scientific community - Results published in book of proceedings			
q8.1.4.3	Report of results to: Scientific community - Results presented in scientific posters			
q8.1.4.4	Report of results to: Scientific community - Newsletters			

Variable name	Label	Question	Values and codes	Analysis
q8.1.4.5	Report of results to: Scientific community - Scientific journals			
q8.1.4.6	Report of results to: Scientific community - Seminars			
q8.1.4.7	Report of results to: Scientific community - Scientific meetings			
q8.1.4.8	Report of results to: Scientific community - Short scientific presentations			
q8.1.4.9	Report of results to: Scientific community - Website			
q8.1.4.other	Report of results to: Scientific community - Other			
q8.1.4.1.1	Report form where the results were reported	**Please indicate the report form where the results were reported**		
q8.1.5	Relevant publications: Pubmed and/or other scientific databases engines	**Relevant publications (Pubmed and/or other scientific databases engines)**		
q8.1.6	Report of results to: General public	**Reporting results to general public**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q8.1.6.1.description	How the results were reported to the general public	**Please indicate how the results were reported to the general public**		
q8.2.1.1	Public debate: Occasional symposia part 1 - Local symposia	**Public debate: Occasional symposia part 1**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple |
| q8.2.1.2 | Public debate: Occasional symposia part 1 - Technical meetings | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q8.2.1.3	Public debate: Occasional symposia part 1 - Focus group discussions			response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q8.2.1.4	Public debate: Occasional symposia part 1 - Meeting in local inhabitants			
q8.2.1.5	Public debate: Occasional symposia part 1 - Public debate at the end of project			
q8.2.1.other	Public debate: Occasional symposia part 1 - Other			
q8.2.2.1	Public debate: Occasional symposia part 2 - Debates between different stakeholders - Kindergarten	**Public debate: Occasional symposia part 2 - Debates between different stakeholders**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q8.2.2.2	Public debate: Occasional symposia part 2 - Debates between different stakeholders - City representatives			
q8.2.2.3	Public debate: Occasional symposia part 2 - Debates between different stakeholders - Scientific society			
q8.2.2.other	Public debate: Occasional symposia part 2 - Debates between different stakeholders - Other			
q8.2.3.1	Public debate: Occasional symposia part 3 - Media - Summary report	**Public debate: Occasional symposia part 3 - Media**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q8.2.3.2	Public debate: Occasional symposia part 3 - Media - Institutional report			
q8.2.3.3	Public debate: Occasional symposia part 3 - Media - Special report			
q8.2.3.4	Public debate: Occasional symposia part 3 -			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
	Media - Press conferences			
q8.2.3.other	Public debate: Occasional symposia part 3 - Media - Other			
q8.3.1	Consequences of external communication: Public awareness			
q8.3.2	Consequences of external communication: Separation between research and policy			
q8.3.3	Consequences of external communication: Screening tests for segments of population			
q8.3.4	Consequences of external communication: Increase in visits to specialized MD			This set of variables represents a multiple-choice answer format question.
q8.3.5	Consequences of external communication: Increase in visits to laboratories	**Public debate: Consequences of external communication**	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q8.3.6	Consequences of external communication: Legislation improved			
q8.3.7	Consequences of external communication: Statement from public authority			
q8.3.8	Consequences of external communication: Greater incentive to participate			
q8.3.9	Consequences of external communication: Clean-up of contaminated areas			
q8.3.other	Consequences of external communication: Other			
q8.4	Examples of material used to communicate with the study participants	**Would you be willing to provide some examples of material used to communicate with the**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
		study participants?		
9. OBSTACLES, SHORTCOMINGS AND DIFFICULTIES				
q9.1.1	General constraints and difficulties: Financial	**General constraints and difficulties: Financial**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q9.1.1.comment	General constraints and difficulties: Financial - Comment			
q9.1.2	General constraints and difficulties: Human resources	**General constraints and difficulties: Human resources**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q9.1.2.comment	General constraints and difficulties: Human resources - Comment			
q9.1.3	General constraints and difficulties: Legislation	**General constraints and difficulties: Legislation**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q9.1.3.comment	General constraints and difficulties: Legislation - Comment			
q9.1.4	General constraints and difficulties: Laboratory	**General constraints and difficulties: Laboratory**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q9.1.4.comment	General constraints and difficulties: Laboratory - Comment			
q9.1.5	General constraints and difficulties: Other	**General constraints and difficulties: Other**	No – 0 Yes – 1	For this yes-no answer format question, a frequency table will be produced
q9.1.5.comment	General constraints and difficulties: Other - Comment			
q9.2.1.1	Difficulties in samples' collection: Blood samples - Fear of pain (from participant)	**Difficulties in samples' collection: Collection of blood samples**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for
q9.2.1.2	Difficulties in samples' collection: Blood samples - Concern about consequences (from participants' perspective)			

Variable name	Label	Question	Values and codes	Analysis
q9.2.1.3	Difficulties in samples' collection: Blood samples - Time-demand (for participants)			descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q9.2.1.4	Difficulties in samples' collection: Blood samples - Non-interest (from participants)			
q9.2.1.other	Difficulties in samples' collection: Blood samples - Other			
q9.2.2.1	Difficulties in samples' collection: Fat samples - Fear of pain (from participant)	**Difficulties in samples' collection: Collection of fat samples**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q9.2.2.2	Difficulties in samples' collection: Fat samples - Concern about consequences (from participants' perspective)			
q9.2.2.3	Difficulties in samples' collection: Fat samples - Time-demand (for participants)			
q9.2.2.4	Difficulties in samples' collection: Fat samples - Non-interest (from participants)			
q9.2.2.other	Difficulties in samples' collection: Fat samples - Other			
q9.2.3.1	Difficulties in samples' collection: Physical examinations - Fear of pain (from participant)	**Difficulties in samples' collection: Physical examinations**	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q9.2.3.2	Difficulties in samples' collection: Physical examinations - Concern about consequences (from participants' perspective)			
q9.2.3.3	Difficulties in samples' collection: Physical examinations - Time-demand (for participants)			
q9.2.3.4	Difficulties in samples' collection: Physical examinations - Non-interest (from participants)			

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q9.2.3.other	Difficulties in samples' collection: Physical examinations - Other			
q9.2.4.1	Difficulties in samples' collection: Other type of samples - Fear of pain (from participant)	Difficulties in samples' collection: Other type of samples' collection	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q9.2.4.2	Difficulties in samples' collection: Other type of samples - Concern about consequences (from participants' perspective)			
q9.2.4.3	Difficulties in samples' collection: Other type of samples - Time-demand (for participants)			
q9.2.4.4	Difficulties in samples' collection: Other type of samples - Non-interest (from participants)			
q9.2.4.other	Difficulties in samples' collection: Other type of samples - Other			
q9.3.1	Difficulties in recruitment of participants: Time-consuming	Difficulties in recruitment of participants: Difficulties in recruitment of participants	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set. |
q9.3.2	Difficulties in recruitment of participants: High drop-out rate			
q9.3.3	Difficulties in recruitment of participants: Low participation level			
q9.3.4	Difficulties in recruitment of participants: Low response rate			
q9.3.3.1	Difficulties in recruitment of participants: Low participation level - For migrants	Difficulties in recruitment of participants: Regarding low participation level please specify	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question.

Therefore, a variable set for multiple |
| q9.3.3.2 | Difficulties in recruitment of participants: Low participation level - For lower social classes | | | |

VARIABLE NAME	LABEL	QUESTION	VALUES AND CODES	ANALYSIS
q9.3.3.3	Difficulties in recruitment of participants: Low participation level - For single working mothers			response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q9.3.3.other	Difficulties in recruitment of participants: Low participation level - Other			
q9.3.4.1	Difficulties in recruitment of participants: Low response rate - Immigrants	Difficulties in recruitment of participants: Regarding low response rate please specify	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q9.3.4.2	Difficulties in recruitment of participants: Low response rate - Lower social classes			
q9.3.4.3	Difficulties in recruitment of participants: Low response rate - Single working mothers			
q9.3.4.other	Difficulties in recruitment of participants: Low response rate - Other			
q9.4.1	Strategies for increasing response rate: Focusing the sampling on groups with expected higher participation rate	Which of the following strategies you consider to be relevant for increasing response rate?	No – 0 Yes – 1	This set of variables represents a multiple-choice answer format question. Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q9.4.2	Strategies for increasing response rate: Use of new and more direct/personal means of approaching people			
q9.4.3	Strategies for increasing response rate: Financial or other incentives			
q9.4.4	Strategies for increasing response rate: Cooperation with other studies, with governmental bodies			
q9.4.5	Strategies for increasing response rate: Participatory research ("citizen science")			
q9.4.6.description	Strategies for increasing response rate:			

Variable name	Label	Question	Values and codes	Analysis
	Recruitment bias (specification)			
q9.5.1	Other identified problems: Logistics			
q9.5.2	Other identified problems: Team leadership			
q9.5.3	Other identified problems: Burden of data collection			
q9.5.4	Other identified problems: Lack of international guidelines			This set of variables represents a multiple-choice answer format question.
q9.5.5	Other identified problems: Lack of international standardisation	Other identified problems	No – 0 Yes – 1	Therefore, a variable set for multiple response analysis will be created, for descriptive/inferential analyses. A frequency table will be produced for this multiple-choice-set.
q9.5.6	Other identified problems: Nomenclature problems			
q9.5.7	Other identified problems: High volume of collected information			
q9.5.8	Other identified problems: No access to data			
q9.5.other	Other identified problems: Other			
q9.5.1.1.description	Specification of problems with logistics	**Please specify the problems with logistics**		
q9.5.2.1.description	Specification of problems with team leadership	**Please specify the problems with team leadership**		
10. Additional information				
q10.description	Other relevant information	**Please add any relevant information collected that was not covered by the questionnaire**		For this question, content analysis will be done

Appendix 4

Protocol for the literature review, including orientation guidelines for keywords to include, eligibility criteria for the search, inclusion criteria for the identified studies and data extraction

ORIENTATION GUIDELINES FOR A NARRATIVE REVIEW ON THE AVAILABLE BIOMONITORING

AND EXPOSURE DATA REGARDING NINE PRIORITISED SUBSTANCES

Task 7.1 aims to identify the existing data and data gaps on biomonitoring and chemicals exposure. To fulfill this purpose, a **three-folded strategy** is being implemented:
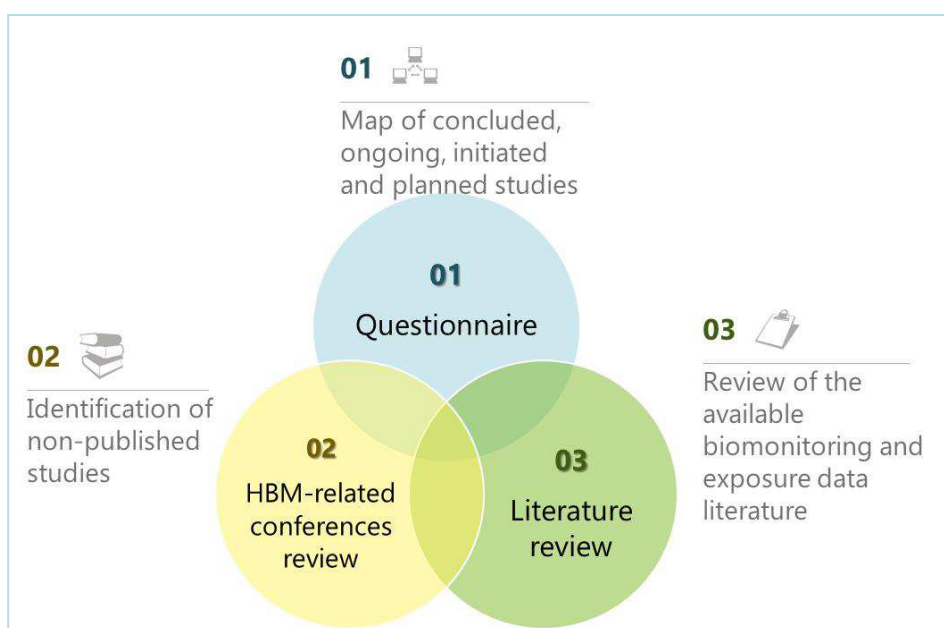
The **questionnaire** on existing surveys has already been launched (*deadline to fill out the questionnaire is April 24*).

The identification of non-published studies in HBM-related **conferences book of proceedings** is an additional activity not included in the description of task 7.1. Therefore, it will be a responsibility of FMUL.

Now, we intend to complement this work with a **narrative review of the literature**. The proposed literature aims to **identify the existing studies on biomonitoring and chemicals exposure (including occupational exposure) regarding the nine prioritised substances**: phthalates /DINCH, bisphenols, per-/polyfluorinated compounds, flame retardants, Cd and Cr, PAHs and air pollutants, anilin family: MOCA, chemicals mixtures and emerging chemicals.

Each partner of task 7.1 will be responsible for the literature review on one of the prioritised substances:

Partner	Prioritised substance/s
UKF	Phthalates, DINCH
THL	PFAS and Flame retardants
FMUL	Cd
ISS	CR
FIOH	Anilines, MOCA and Bisphenols

Search process

Key-words

Two sets of key-words to be used as alternatives were identified and reviewed by some of the partners. These are only a proposal that can be changed.

The identified key-words can be consulted in the excel document in attach (*HBM4EU_Literature review_synoptic table cadmium_FMUL_201700410*).

Eligibility criteria

▶ Data bases: Medline (PubMed), Web of Science and EBSCO

▶ Language of the documents: English

▶ Publication date: From 01/01/2007 to 31/12/2016

Inclusion criteria

To consider only:

▶ Papers referring to studies of the HBM4EU partners

▶ Documents with empirical HBM data (do not include opinion or conceptual papers that do not mention an HBM study)

Data extraction

Data of each selected paper should be extracted into a standardized matrix (see excel document in attach *HBM4EU_Literature review_synoptic table cadmium_FMUL_201700410*) with the following columns:

- Reference (author/s, title, year of publication, journal)

- HBM Study/Project/Activity name (including acronym, if any)

- Coordination research unit (name, acronym and country of the research unit responsible for the study)

- Country/countries (where the data were collected)

- HBM implementation level (international, national, regional, local, …)

- Main objectives (including specific HBM objectives)

- Population & Sampling

    o Target population

    o Number of participants

    o Inclusion/exclusion criteria

    o Sampling method

    o Recruitment

    o Time schedule (frequency) of data collection

- Data collection

    o Period of data collection

    o Mode of data collection

    o Group/s of substances studied

    o Collected data

- Main findings / Conclusions

- Limitations of the study

- Observations

Appendix 5

Synoptic table for the literature review

Keywords	
Cadmium AND "Human biomonitoring"	Cadmium AND "Professional exposure"
Cadmium AND Environmental monitoring	Cadmium AND "Occupational data"
Cadmium AND Biological monitoring	Cadmium AND workers
Cadmium AND "Environmental surveilance"	Cadmium AND exposure AND industry
Cadmium AND Environmental exposure	Cadmium AND Occupational health
Cadmium AND Health surveys	Cadmium AND occupational groups
Cadmium AND Risk assessment	Cadmium AND "workplace exposure"
Cadmium AND "Health risks"	Cadmium AND "non-occupational exposure"
Cadmium AND "Health effects"	Cadmium AND "population exposure"
Cadmium AND "Effect biomarkers"	Cadmium AND "urine analysis"
Cadmium AND "Exposure biomarkers"	Cadmium AND "exposure assessment"
Cadmium AND Occupational exposure	Cadmium AND "HBM values"

ID		1	2	3
Reference (author/s, title, year of publication, journal)				
HBM Study/Project/Activity name (including acronym, if any)				
Coordination research unit (Name, acronym and country of the research unit responsible for the study)				
Country/countries (where the data were collected)				
HBM implementation level (international, national, regional, local, …)				
Main objectives (including specific HBM objectives)				
Study design (cross-sectional, longitudinal/cohort, case-control, …)				
Population & Sampling	**Target population** (- general population or clinical; - children, adolescents, adults, …)			
Population & Sampling	Number of participants			
Population & Sampling	**Inclusion/exclusion criteria** (age range, gender, …)			
Population & Sampling	**Sampling method** (Random, convenience / intentional, stratified, …			
Population & Sampling	**Recruitment** (recruitment place: school, hospital, registration office) (recruitment via: GP, census data, health archives, mail address, door to door, … other relevant information on recruitment)			
Data collection	**Time schedule (frequency) of data collection** (every year, once a year, …)			
Data collection	**Period of data collection** (beginning and ending date)			
Data collection	**Mode of data collection**			
Data collection	**Group/s of substances studied**			
Data collection	**Collected data** (Please specify, if possible, non-biological data, biological samples and biomarkers and other parameters collected)			
Main findings / Conclusions				
Limitations of the study				
Observations (Please insert any relevant information not covered in the previous fields)				