




FP7-ENV-2008-226873  
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## **D1.7 Completed data sets**

**WP1 – Scientific Coordination**


**V1.0 final**

Lead beneficiary: CREAL  
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## Document Information

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| Grant Agreement Number | ENV-226873   | Acronym | MOBI-KIDS |
| Full title             | Risk of brain cancer from exposure to radiofrequency fields in childhood and adolescence |         |           |
| Project URL            | http://www.mbkds.net/  |         |           |
| EU Project officer     | [REDACTED]   |         |           |


|              |        |     |       |                         |
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|                     |  |     |   |            |
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## Document History

| Name       | Date       | Version | Description                      |
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| [REDACTED] | 27/11/2016 | V1.0    | Feedback requested from partners |
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## Definitions

- Partners of the MOBI-KIDS Consortium are referred to herein according to the following codes:
  - CREAL** - Fundació Centre de Recerca en Epidemiologia Ambiental (Spain) – Coordinator
  - UU** - Universiteit Utrecht (Netherlands) – Beneficiary
  - ORANGE** - Orange (France) – Beneficiary
  - DH-PHE** – Department of Health (United Kingdom) – Beneficiary
  - LMU** - Ludwig-Maximilians-Universitaet Muenchen (Germany) – Beneficiary
  - MUV** - Medizinische Universitaet Wien (Austria) – Beneficiary
  - UNITO** - Università degli Studi di Torino (Italy) – Beneficiary
  - ARECEA** - Association pour la Recherche Epidémiologique dans les Cancers de l'Enfant et de l'Adolescent (France) – Beneficiary
  - UOA-SARG** - National and Kapodistrian University of Athens (Greece) – Beneficiary
  - GERTNER** - Gertner Institute for Epidemiology & Health Policy Research (Israel) – Beneficiary
  - UOTTAWA** - University of Ottawa (Canada)
  - MONASH** - Monash University (Australia)
  - MASSEY** – Massey University (New Zealand)
- Grant Agreement:** The agreement signed between the beneficiaries and the European Commission for the undertaking of the MOBI-KIDS project (ENV-226873).
- Project:** The sum of all activities carried out in the framework of the Grant Agreement.
- Work plan:** Schedule of tasks, deliverables, efforts, dates and responsibilities corresponding to the work to be carried out, as specified in Annex I to the Grant Agreement.
- Consortium:** The MOBI-KIDS Consortium, conformed by the above-mentioned legal entities.
- Consortium Agreement:** Agreement concluded amongst MOBI-KIDS participants for the implementation of the Grant Agreement. Such an agreement shall not affect the parties' obligations to the Community and/or to one another arising from the Grant Agreement.
- Deliverable review:** An evaluation procedure by one or more reviewers, which precedes the distribution of a deliverable (as defined in the Work plan) to the European Commission.
- Quality assurance:** All the planned and systematic activities implemented to provide adequate confidence that an entity will fulfil requirements for quality.
- Quality policy:** A set of principles on which quality assurance procedures are based.

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- **Risk:** Uncertainty that may have a significant impact on the execution or outcome of the project, and which effect may be negative – a *threat risk* - or positive – an *opportunity risk*.
- **Foreground:** Means the results, including information, whether or not they can be protected, which are generated by activities in the Project. Such results include rights related to copyright; design rights; patent rights; plant variety rights or similar forms of protection.
- **Background:** Means information which is held by participants prior to their accession to the Grant Agreement, as well as copyrights or other intellectual property rights pertaining to such information, the application for which has been filed before their accession to the Grant Agreement, and which is needed for carrying out the indirect action or for using the results of the indirect action.

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## 1. INTRODUCTION

The different data sets that have been collected for the study are: index questionnaire, parental questionnaire, clinical questionnaire, non-response questionnaire. We present here the datasets regarding the index, the parental and the clinical questionnaires. Data and information from the non-response questionnaire is covered in the Deliverable 5.7.

The Mobi-kids study ascertained 1247 cases and 3528 controls in the 14 participating countries. From those, 901 cases and 1922 controls accepted to participate in the study, with response rates of 73% and 55% for cases and controls respectively (Table 1). For all these participating subjects, we have basic information (age, sex, residence, diagnosis).


Table 1. Total number of cases and controls recruited in the Mobi-kids study

|                    | Total number of eligible cases ascertained | Total number of cases accepted | Total number of eligible controls ascertained | Total number of controls accepted |
|--------------------|--|--------------------------------|---|-----------------------------------|
| <b>AUSTRALIA</b>   | 34   | 24                             | 138   | 47                                |
| <b>AUSTRIA</b>     | 30   | 24                             | 65  | 50                                |
| <b>CANADA</b>      | 44   | 23                             | 71  | 28                                |
| <b>FRANCE</b>      | 195  | 103                            | 390   | 188                               |
| <b>GERMANY</b>     | 156  | 84                             | 346   | 136                               |
| <b>GREECE</b>      | 63   | 54                             | 96  | 87                                |
| <b>INDIA</b>       | 27   | 26                             | 38  | 38                                |
| <b>ISRAEL</b>      | 123  | 99                             | 362   | 194                               |
| <b>ITALY</b>       | 188  | 160                            | 527   | 343                               |
| <b>JAPAN</b>       | 37   | 30                             | 316   | 224                               |
| <b>KOREA</b>       | 32   | 30                             | 142   | 98                                |
| <b>NETHERLANDS</b> | 36   | 21                             | 66  | 38                                |
| <b>NEW ZEALAND</b> | 22   | 15                             | 55  | 29                                |
| <b>SPAIN</b>       | 260  | 208                            | 916   | 422                               |
| <b>TOTAL</b>       | 1247                                       | 901                            | 3528  | 1922                              |

### 1.1. Index questionnaire

The index questionnaire has the following sections:

- A. Residential history: including time spent in farms, exposure to farm animals and crops; residential exposure to animals; left/right handed information and origin (information available in some countries)
- B. Mobile phone use: mobile phone identification & calendar; mobile phone operators; habits of phone use when starting its use; habits of phone use recently; changes in mobile phone use; use of hands-free devices and

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- Bluetooth; information regarding other mobile phone usages (text messages, VoIP, etc.).
- C. Other communication device usage: habits at start of cordless phone use and recent use, WiFi use
  - D. Exposure to other (not communication) sources of EMF
  - E. Occupation exposures: including all occupational history and with specific questions regarding exposure to relevant sources of EMF in the occupational environment
  - F. Medical radiation exposure
  - G. Medical history
  - H. Interview responsiveness & status
  - I. Questions on water and disinfection by-products (this part of the questionnaire was optional and information is available for 6 countries: Spain, Italy, Greece, Korea, Canada and New Zealand; n=491)


In Table 2 we present the number of cases and controls that have answered the different sections of the questionnaire.

Table 2. Number of cases and controls that have answered each one of the sections of the index questionnaire

| Section  | Cases  |            | Controls |            |
|--|--------|------------|----------|------------|
|  | Number | Percentage | Number   | Percentage |
| A. Residential history   | 897    | 99.3%      | 1891     | 98.4%      |
| B. Mobile Phone Use  | 898    | 99.4%      | 1908     | 99.3%      |
| C. Other wireless communication devices usage  | 898    | 99.4%      | 1894     | 98.5%      |
| D. Exposure to other (not communication) sources of ELF and RF   | 898    | 99.4%      | 1897     | 98.7%      |
| E. Occupational  | 898    | 99.4%      | 1896     | 98.6%      |
| F. Medical Radiation   | 898    | 99.4%      | 1893     | 98.5%      |
| G. Medical History   | 898    | 99.4%      | 1894     | 98.5%      |
| Index Questions On Water And Disinfection By-Products (Country specific) (N=491 cases and 1007 controls) | 490    | 99.8%      | 991      | 98.4%      |
| H. Interview responsiveness & status   | 894    | 99.0%      | 1885     | 98.1%      |

## 1.2. Parental questionnaire

- a. Maternal questionnaire: information regarding educational level, diseases/condition suffered during the pregnancy of the index, infectious diseases suffered 3 months prior to or during the pregnancy, medication taken 3 months prior to or during the pregnancy, medical examinations (ultrasounds, X-rays, CT-scans, MRI or radiation treatments), alcohol consumption prior to, during the pregnancy or 3 months after the birth, use of mobile phones prior to, during the pregnancy or 3 months after the birth, use of electrical

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appliances prior to, during the pregnancy or 3 months after the birth, smoking during pregnancy, details about the delivery, information regarding X-ray or nuclear medicine to the first year of life of the index, school history of the index, maternal occupational history,

- b. Family history of cancer
- c. Paternal questionnaire: information regarding educational level, father's occupational history.

There is a final section filled out by the interviewer to assess the responsiveness of the interviewee. Table 3 presents the number of subjects that have the above mentioned sections completed.

Table3. Number of cases and controls parents that have answered each one of the sections of the parental questionnaire

| Section   | Cases |            | Controls |            |
|---|-------|------------|----------|------------|
|   | Count | Percentage | Count    | Percentage |
| I. Maternal Questionnaire   | 845   | 93.6%      | 1716     | 89.3%      |
| Mother Questions On Water And Disinfection By-Products (Country specific) | 469   | 51.9%      | 863      | 44.9%      |
| J. Family History of Cancer   | 861   | 95.3%      | 1724     | 89.7%      |
| K. Paternal Questionnaire   | 812   | 89.9%      | 1644     | 85.5%      |
| L. Interview responsiveness   | 858   | 95.0%      | 1711     | 89.0%      |

### 1.3. Clinical questionnaire

For each case, a clinical questionnaire was filled out with information regarding:

1. Information about first image showing suspicion of space occupying lesion
2. Confirmation of diagnosis
3. Tumor markers & other tumors
4. Last follow-up

From the 903 cases that accepted participation in the study, we have collected clinical information from 893 cases (table 4) from the clinical records. The country with the lowest rates of clinical data is Germany, with 90% of their cases with clinical information. For the rest of the countries, all cases have the clinical questionnaire filled out, except one case from Australia that did not consent access to his/her clinical records.

In table 5 we present the distribution by tumour type.


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Table 4. Cases with clinical information available

| Country         | N eligible cases | N with CQ  | % of cases with CQ |
|-----------------|------------------|------------|--------------------|
| Australia       | 24               | 23*        | 96%                |
| Austria         | 24               | 24         | 100%               |
| Canada          | 23               | 23         | 100%               |
| France          | 103              | 103        | 100%               |
| Germany         | 84               | 76         | 90%                |
| Greece          | 54               | 54         | 100%               |
| India           | 27               | 27         | 100%               |
| Israel          | 99               | 99         | 100%               |
| Italy           | 160              | 160        | 100%               |
| New Zealand     | 15               | 15         | 100%               |
| Spain           | 209              | 208        | 100%               |
| The Netherlands | 21               | 21         | 100%               |
| Japan           | 30               | 30         | 100%               |
| Korea           | 30               | 30         | 100%               |
|                 |                  |            |                    |
| <b>Total</b>    | <b>903</b>       | <b>893</b> | <b>99%</b>         |

\*One case from Australia did not consent access to the clinical records

Table 5. Type of tumour according to the morphology of the cases (according to the International Classification of Diseases for Oncology (ICD-O))

| Tumour type                | N          | %           |
|----------------------------|------------|-------------|
| Total of Neuroepithelial   | 656        | 73%         |
| Glioma                     | 540        | 60%         |
| Other neuroepithelial      | 116        | 13%         |
| Embryonal                  | 124        | 14%         |
| Meninges                   | 47         | 5%          |
| Other non neuroepithelial  | 47         | 5%          |
| Missing                    | 19         | 2%          |
|                            |            |             |
| <b>Total cases with CQ</b> | <b>893</b> | <b>100%</b> |

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## 2. CONCLUSION

As of April 2016, these are the complete data-sets of the Mobi-kids study with 901 cases and 1922 controls that accepted to participate. Regarding the clinical questionnaire, a last effort is being made in all the countries to collect the basic information from the clinical records.