

PROJECT EXAMPLE: GERMAN ENVIRONMENTAL STUDY ON HEALTH, GERES 2014-2017

Starting situation

The German Environmental Study on Health, GerES 2014-2017, is Germany's biggest study on the exposure of the population to pollutants. The aim of this study, which is financed by the Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB), and coordinated by the Federal Environment Agency (UBA), is to detect and evaluate potentially damaging substances and environmental influences (for example chemicals or noise) on children and teenagers.

Solution

Children and teenagers between 3 and 17 from more than 160 German cities and communities who had already taken part in the study on the health of children and teenagers in Germany (KiGGS, Wave 2) of the Robert Koch Institute (RKI) were invited to take part by the UBA. As well as samples of house dust and drinking water, the execution of sound level measurements, measurements on the chemical contamination of the air and the investigation of the biogenic interior contamination, the participating children and teenagers also provide blood and urine samples for human biomonitoring (HBM), i.e. the investigation and monitoring of the physical pollutant exposure. The essential information about exposure-relevant behaviour and living circumstances is collected with the aid of interview-controlled questionnaires. This data serves for the interpretation and evaluation of the toxic values measured in the blood and urine in order to clarify:

- how high the exposure to individual substances and environmental influences is
- where individual substances come from
- through which paths they enter the human body
- and under which circumstances the individual environmental influences can impact negatively on the health of humans.

Just under 3,000 households throughout Germany are currently taking part in the German Environmental Study on Health. Due to the large number and targeted selection of the participants, the results are representative, i.e. the environmental exposure of all persons of the same age in Germany can be extrapolated from them. The study results thus also serve as a basis for decisions on regulation measures to protect humans and the environment. Within the framework of the three-year field phase (2014-2017), a total of around 123,000 human samples, thereof about 117,000 morning urine and 6,000 blood plasma samples will be taken. On the basis of the long years of expertise in the field of cryopreservation and biobanking at the Fraunhofer IBMT, these samples will be administered by the working group Biomonitoring & Biobanks, and stored in the Cryobank Saarbrücken (KBSB) at the IBMT location in Sulzbach at temperatures < -130 °C for later analysis. The quality of the sample administration of a biobank is essentially dependent on the standardization of its processes, its monitoring and the corresponding documentation. This is why GerES 2014-2017 is subject to the specifications of the quality management system established for the KBSB in accordance with DIN EN ISO 9001:2015. The sample administration system was developed especially for the requirements of the GerES 2014-2017 by the Fraunhofer IBMT in the working group Health Information Systems.

Potenzial

Die erste Deutsche Umweltstudie zur Gesundheit wurde zwischen 1985 und 1986 durchgeführt. Im Mittelpunkt der damaligen Betrachtung stand die Belastung von Erwachsenen in Westdeutschland. Es folgten drei weitere vom UBA koordinierte Studien. 1991 konnte zum ersten Mal die Bevölkerung in Ostdeutschland einbezogen werden, zwischen 2003 und 2006 stand erstmals ausschließlich die Belastung von Kindern im Fokus der Untersuchung. Auch in der aktuellen Deutschen Umweltstudie zur Gesundheit von Kindern und Jugendlichen, GerES 2014-2017, steht wieder die junge Generation im Mittelpunkt.

Weitere Informationen zu den in GerES 2014-2017 untersuchten Schadstoffen und den Projektpartnern finden Sie unter: <https://www.umweltbundesamt.de/tags/deutsche-umweltstudie-zur-gesundheit>

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Potential

The first German environmental study on health was carried out between 1985 and 1986. The focus at the time was on the exposure of adults in West Germany. There were three further studies coordinated by the UBA. In 1991 it was possible to include the population of the former East Germany for the first time. Between 2003 and 2006 the focus of the investigation was exclusively on the exposure of children. The current German Environmental Study on the Health of Children and Teenagers GerES 2014-2017, again places the focus on the young generation.

For further information on the pollutants investigated in GerES 2014-2017 and the project partners, go to: <https://www.umweltbundesamt.de/tags/deutsche-umweltstudie-zur-gesundheit>

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