EUROPEAN BIRTH COHORTS WITH ENVIRONMENTAL EXPOSURE DATA: THE ENRIECO INVENTORY AND RECOMMENDATIONS

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Background and Aims: Many birth cohorts in Europe study the effects of early-life environmental exposures on pregnancy and child health, but data are often of fragmented nature and no overview of existing studies and their results is available. Therefore, the EU funded ENRIECO (Environmental Health Risks in European Birth Cohorts) to inventorize and synthesize birth cohort research in this area.
Methods*:* ENRIECO has created a detailed inventory of birth cohorts in Europe with data on environmental exposures, which can be searched on www.birthcohortsenrieco.net. Further, ENRIECO working groups in specific exposure and outcome topics have evaluated available data and methods used in the cohorts and developed recommendations. Lastly, case studies have examined areas in which pooling of data across cohorts may be feasible.
*Results***:** 36 birth cohorts in 19 European countries are studying a total of more than 350,000 mother-child pairs. The sizes of the cohorts vary considerably. Most of the cohorts are still young, with children under the age of 10 years. All cohorts have collected biological specimens of children and/or parents. Passive smoking, maternal occupation, outdoor air pollution, and allergens/biological organisms are assessed in many cohorts (>26). Fewer cohorts (12 to 16) collected information on water contamination, ionizing or non-ionizing radiations, noise, metals, persistent organic pollutants, or other, emerging, pollutants. Common and continuously measured health outcomes are well covered: birth weight, childhood growth, asthma and allergies, and child neurodevelopment. Methods and protocols differ considerably, but combined studies have proven feasible already for certain topics (e.g. PCBs and birth weight, and passive smoking and respiratory outcomes).
Conclusions: Combining forces in this field will yield more efficient and conclusive studies and ultimately improve causal inference. The impressive resource of existing birth cohort data should form the basis for a long-term infra-structure for cohort research on environmental exposures and child health.

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