

COMBINED ANALYSIS OF THE RISK OF ADVERSE BIRTH OUTCOMES ASSOCIATED WITH MATERNAL OCCUPATIONAL EXPOSURE ACROSS EUROPEAN BIRTH COHORTS

Maribel Casas, Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain - Hospital del Mar Research Institute (IMIM), Barcelona, Spain. Spanish Consortium for Research on Epidemiology and Public Health (CIBERESP), Spain

Sylvaine Cordier, INSERM U 625, Université Rennes I, France

Alex Burdorf, Department of Public Health, Erasmus Medical Centre, Rotterdam, The Netherlands

Joelle Fevotte, Institut de veille sanitaire (InVS), Saint-Maurice, France - Unité mixte de recherche épidémiologique et de surveillance en transport, travail et environnement (Umrestte / InVS, UCB Lyon1, Inrets), Lyon, France

Claudia Snijder, Department of Public Health, Erasmus Medical Centre, Rotterdam, The Netherlands - The Generation R Study Group, Erasmus Medical Centre, Rotterdam, The Netherlands

Mark Nieuwenhuijsen, Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain; Hospital del Mar Research Institute (IMIM), Barcelona, Spain. Spanish Consortium for Research on Epidemiology and Public Health (CIBERESP), Spain

Martine Vrijheid Centre for Research in Environmental Epidemiology (CREAL), Barcelona, Spain; Hospital del Mar Research Institute (IMIM), Barcelona, Spain. Spanish Consortium for Research on Epidemiology and Public Health (CIBERESP), Spain on behalf of the CHICOS occupational cohort working group

Background and Aims: Occupational maternal exposures during pregnancy may be hazardous to optimal fetal and child development. The prospective, population-based, birth cohort study design has not been used much in this field, mainly due to the rareness of exposures. However, because of prospective data collection, collection of information on many co-variables, and the follow-up of children after birth, such cohorts have important strengths. Therefore, a combined analysis with data from many European birth cohorts will be conducted as part of the CHICOS project to estimate whether risk of adverse birth outcomes is related to specific maternal occupations and physical load.

Methods: The ENRIECO inventory of birth cohorts in Europe (www.birthcohortsenrieco.net) was used to identify cohorts that collected maternal occupation information at any time during pregnancy and have already coded this into occupational codes. Combined analyses across these cohorts will determine whether specific occupations with *a-priori* risk indication (such as nurses, hairdressers, farmers) and physical load (determined through a job-exposure matrix) are associated with reductions in birth weight, risk of low birth weight, or reductions in gestational age.

Results: A total of 16 European birth cohorts have already coded the maternal occupational information collected through questionnaires into occupational codes. ISCO 88 appears to be the most frequently occupational code reported in the participating cohorts (n=10). The rest have used other occupational codes such as SOC 1999, SOC 2000, NYK or DISCO 88 that can be translated into ISCO 88. This study will be based on 250,000 mother-child pairs.

Conclusions: Pooling data on maternal occupation and birth outcomes across European birth cohorts will provide enough statistical power to disentangle the effects of specific occupational exposures and physical load on birth weight and gestational age and will allow evaluation of heterogeneity between countries in such effects.