

A multi-center birth cohort study in Korea : **MOthers and Children's Environmental Health (MOCEH) study**

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MOCEH means "Mother's Body" in Korean.

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For 1 Update
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NEW STUDY

The Mothers and Children's Environmental Health (MOCEH) Study

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Abstract The MOCEH study is a prospective hospital- and community-based cohort study designed to collect information related to environmental exposures (chemical, biological, nutritional, physical, and psychosocial) during pregnancy and childhood and to examine how exposures to environmental pollutants affect growth, development, and disease. The MOCEH network includes two coordinating centers, four local centers responsible for recruiting pregnant women, and four evaluation centers (a nutrition center, two respiratory centers, neurocognitive development center, and environmental assessment center). At the local centers, trained nurses interview the participants to gather information regarding their demographic and socio-economic characteristics, complications related to the current pregnancy period, health behaviors and environmental factors. These centers also collect samples of blood, placenta, urine, and breast milk. Environmental hygienists measure each participant's level of exposure to indoor and outdoor pollutants during the pre- and postnatal periods. The participants are followed up through delivery and until the child is 7 years of age. The MOCEH study plans to recruit 1,000 pregnant women between 2008 and 2010 and to perform follow-up studies on the first children. We expect this study to provide evidence to support the hypothesis that the gestational environment has an effect on the development of disease during childhood. We also expect the study results

The members of the MOCEH Study Group are listed in the Appendix.

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Introduction paper is on EJE 2009.
See MOCEH poster booth!

Scope of research

- In Korea, the National Environmental Health Action Plan (NEHAP, 2006) outlines strategies for eliminating environmental health hazards and reducing their adverse effects on pregnant women and their children.
- In 2006, the Mothers and Children's Environmental Health (MOCEH) study began as an initiative of the NEHAP.

Objectives

- To collect information on environmental exposure during pregnancy and childhood and
- examine the relationship between exposure to environmental pollutants and growth, development and disease in children.
- To provide scientific information for improvement of the health, development, and well-being of children in the future.

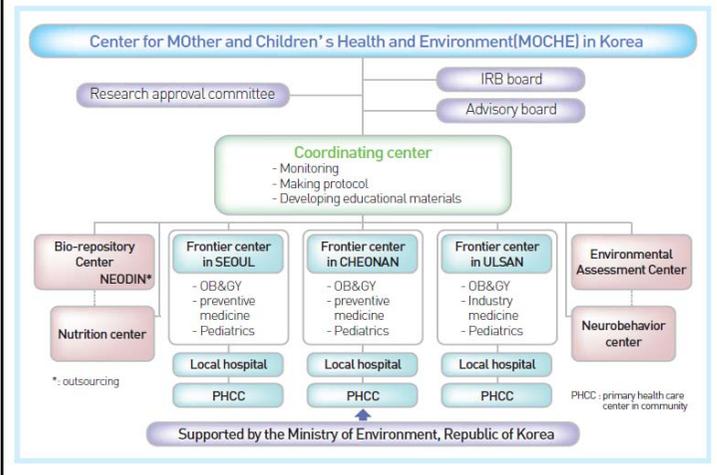
Study areas

Study locations



There are a coordinating center, three frontier centers, a bio depository center, environmental exposure assessment center, nutrition center, and a neurobehavioral center in MOCHE.

Community-based collaborative network



Study design

- The MOCEH study is a prospective hospital- and community-based cohort study

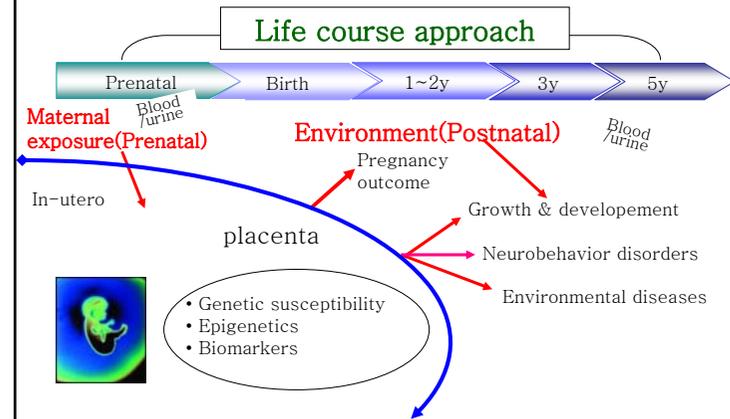
- Pregnant women, their partners, and their children will be the subjects of these investigations.

- The Institutional Review Board at Ewha Woman's University, Seoul, South Korea has reviewed and approved the study protocol.

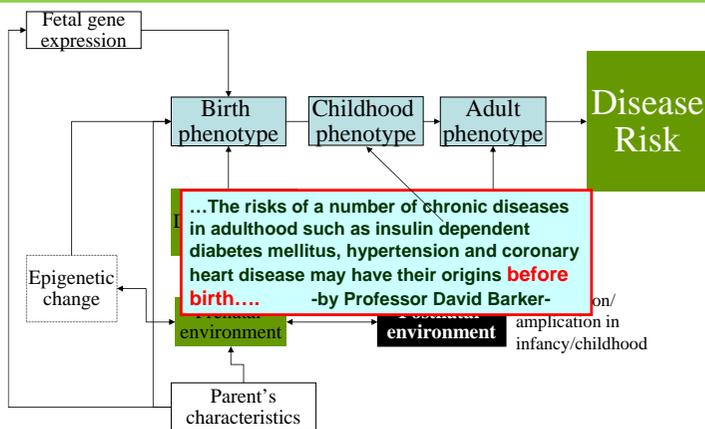
Protocol development

- All aspects of the study design were finalized after taking the core hypotheses, financial resources, utility for future investigations, and ethics of the study into consideration.

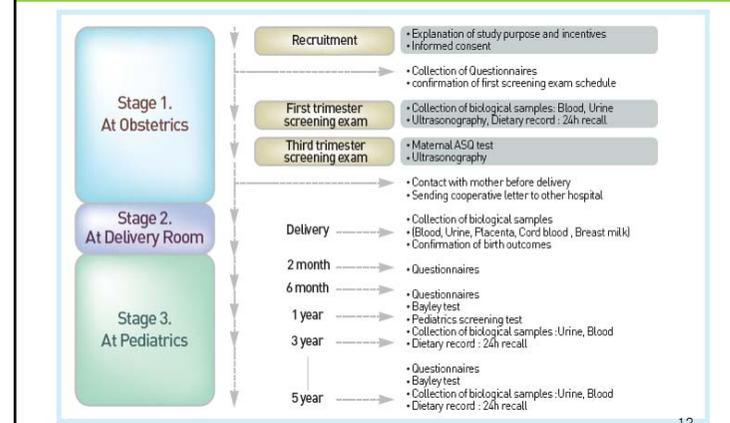
Hypothesis of MOCEH



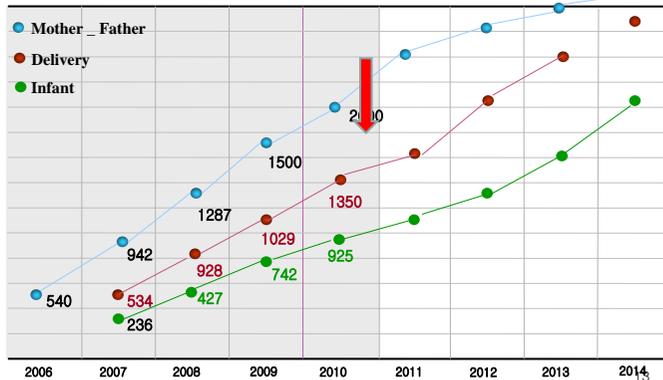
Theory: the 'developmental origins'



Study process



Numbers of subjects



Data collection

- **Assessment of determinants**
 - Questionnaires
 - Measurements of environmental pollutants (Home visiting)
 - Biological samples
 - Dietary information

- **Assessment of outcomes**
 - Intrauterine growth
 - Birth outcomes
 - Growth and development
 - Neurocognitive development
 - Atopy, allergy, and asthma in children

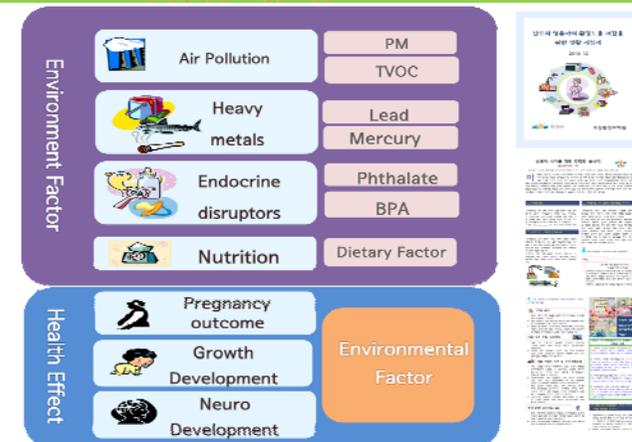
Possible evidences from MOCEH study

- ✓ Air pollution and pregnancy outcomes
- ✓ Heavy metal and pregnancy outcomes and infant's development
- ✓ PAH and oxidative stress and pregnancy outcomes
- ✓ Endocrine Disruptors and pregnancy outcomes and neurodevelopment

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How to translate from study results to practice

10 Guidelines list



Data management and privacy protection

Indoor/
Personal/
Outdoor

- We **monitor the quality of the data periodically and conduct additional surveys** to obtain information regarding questionnaire items that were left blank or insufficiently answered

DB(Data Base) Structure

Future PERSPECTIVES

We expect that this study will

- provide **new information obtained through academic research to support the hypothesis that the gestational environment affects the development of diseases during childhood and adulthood.**
- establish **of a national policy for improving the health of pregnant women and their children.**

- The MOCEH study team would like to engage in **collaborative research and welcome future collaborative opportunities.**
- Access to the data is subject to restrictions outlined in the study protocols, and inquiries can be made to the study director or lead researchers with contact details listed on the study website (<http://www.moceh.co.kr>).

Acknowledgment



This study was supported by the Ministry of Environment, Republic of Korea.

Thank you very sweetly^^

