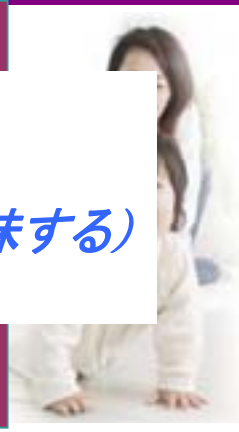


Mothers and Children's Environmental Health (MOCEH) : Lessons(経験) and Perspectives(展望)

*MOCEH means
mother's body
(MOCEHとは母体を意味する)
in Korean.*





Contents

I. Brief introduction of MOCEH Study

- background and aims
- study design and protocols

II. Lessons and perspectives from MOCEH Study

- barriers, lessons, and perspectives



I. Brief introduction of MOCEH Study

1.background and aims

2.study design and protocols





1. Background

Childhood diseases and developmental disorders potentially associated with environmental hazards, such as allergy, asthma, atopic dermatitis, neurobehavioral disorder, etc., are major public health concerns in Korea and around the world.



In Korea, the National Environmental Health Action Plan (NEHAP, 2005 国家環境保健行動計画) of the Ministry of Environment formulated strategies to eliminate environmental health hazards(環境保健有害要素を排除する) and reduce their adverse effects(その有害作用を低減する) on pregnant women and their children.



Aims of our study

To collect information on **environmental exposure during pregnant and childhood** (妊娠中および小児期の環境曝露) and **examine the relationship between exposure to environmental pollutants and growth, development and disease in children**(環境中の汚染物質と子供達の成長発達・疾患との).

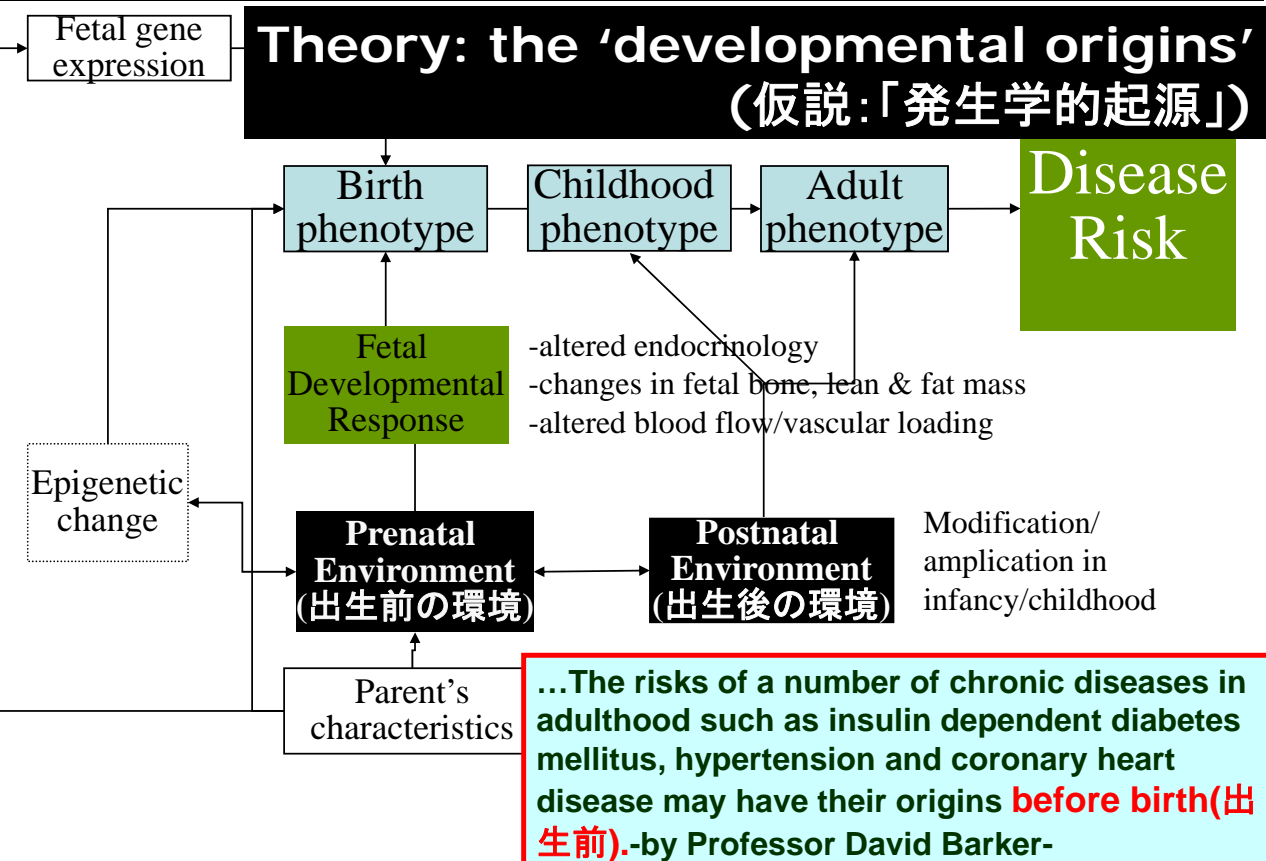
To provide **scientific information** (科学的情報) for **improvement**(改善) of the health, development, and well-being of children in the future.



5 Years Timeline of action plan

Study year	Contents
2006 (First)	Launching(研究開始)
2007-2009 (Second-Fourth)	Continuous development and management (継続的開発と管理)
2010 (Fifth)	Suggestion of environmental health policy for pregnant women and children(妊娠女性と子供のための環 境保健方針の提案) 7

Hypothesis(仮説) of MOCEH





2. Study design(研究設計) and protocol (およびプロトコル)



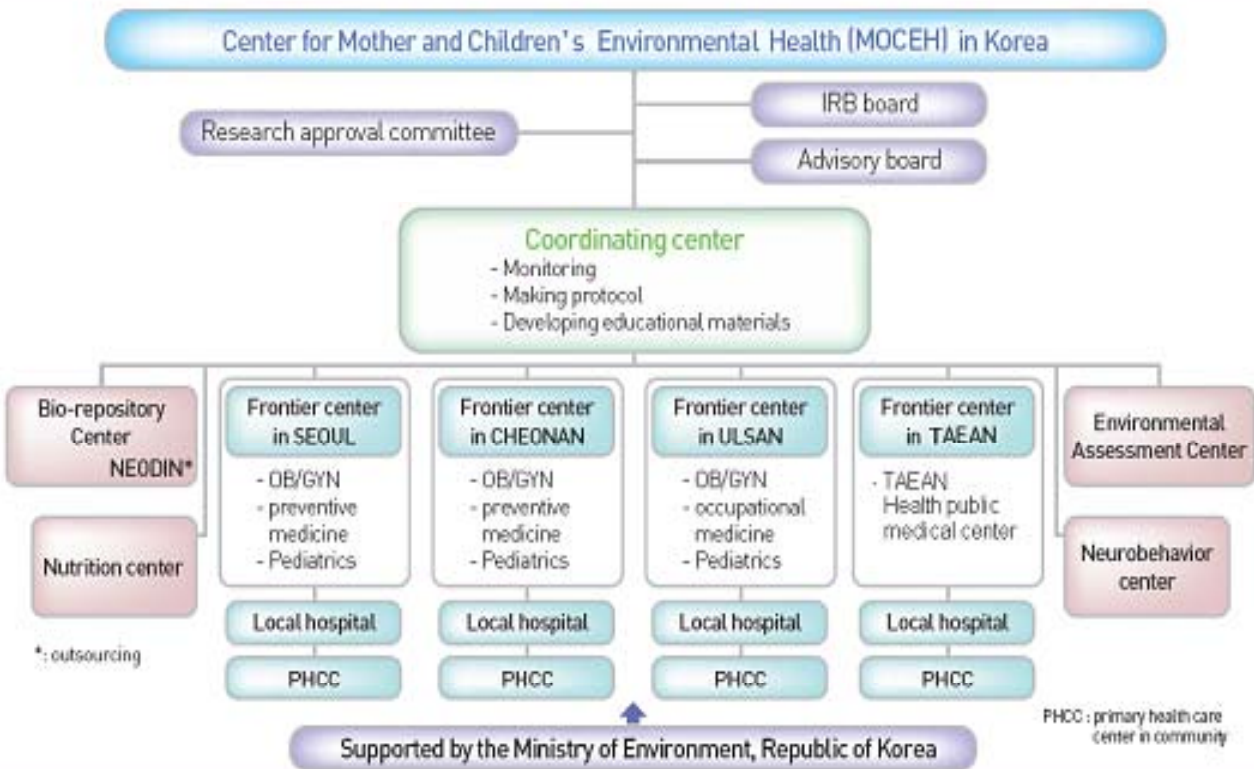


Fig 1. Community-based collaborative network (協力ネットワーク)



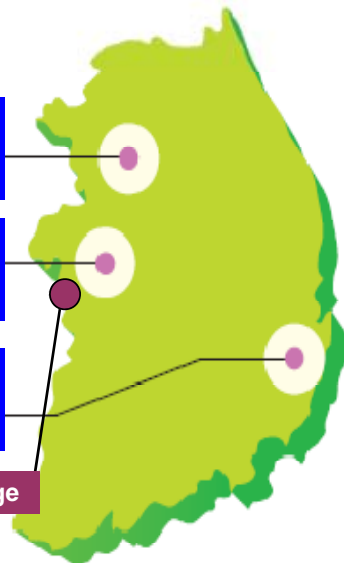
Study locations

Seoul was selected for a study area due to large population size, heavy traffic volumes, serious air pollution and high density of apartments.

The cities of Cheonan and Asan are relatively clean and mixed area of rural and high tech industrial (mainly, informational technology and semiconductor industries) regions.

Ulsan, the largest industrial complex city in Korea, has various kinds of industries such as shipbuilders, car manufacturers, and petrochemical factories.

Taejeon Center was built up in 2008 after oil spillage



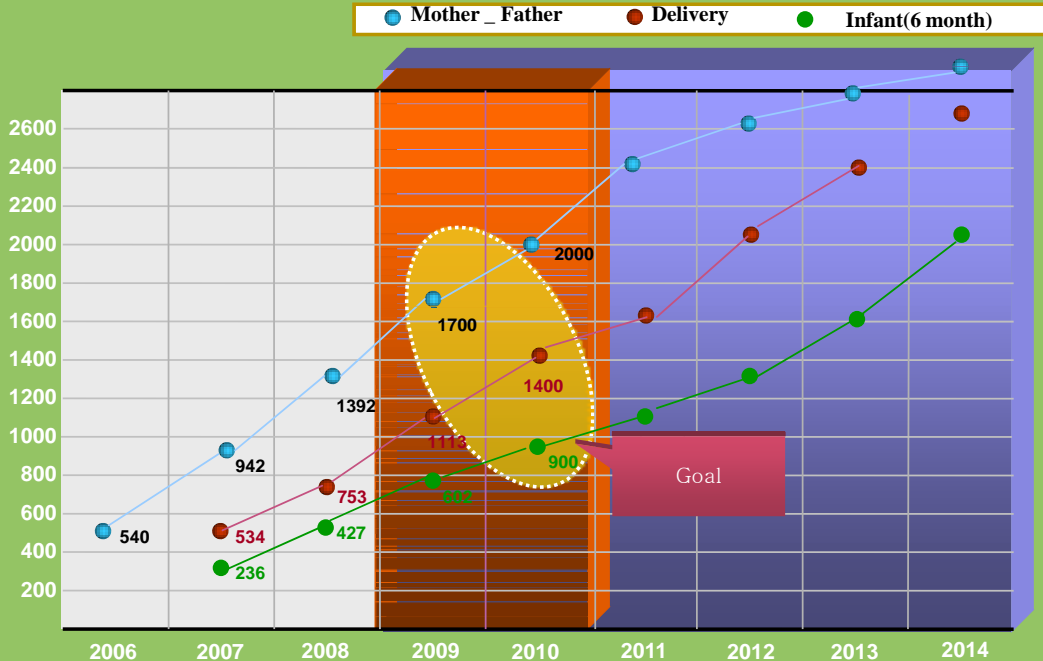
There are a coordinating center, three frontier centers, a bio depository center, environmental exposure assessment center, nutrition center, and a neurobehavioral center in MOCHE.

Fig 2. Study locations(研究拠点) of three frontier centers(3カ所の先駆けセンター)



Fig 3. Study design(研究設計) and protocol(およびプロトコル)

GOAL of recruitment



Exposures, outcomes, and interactions

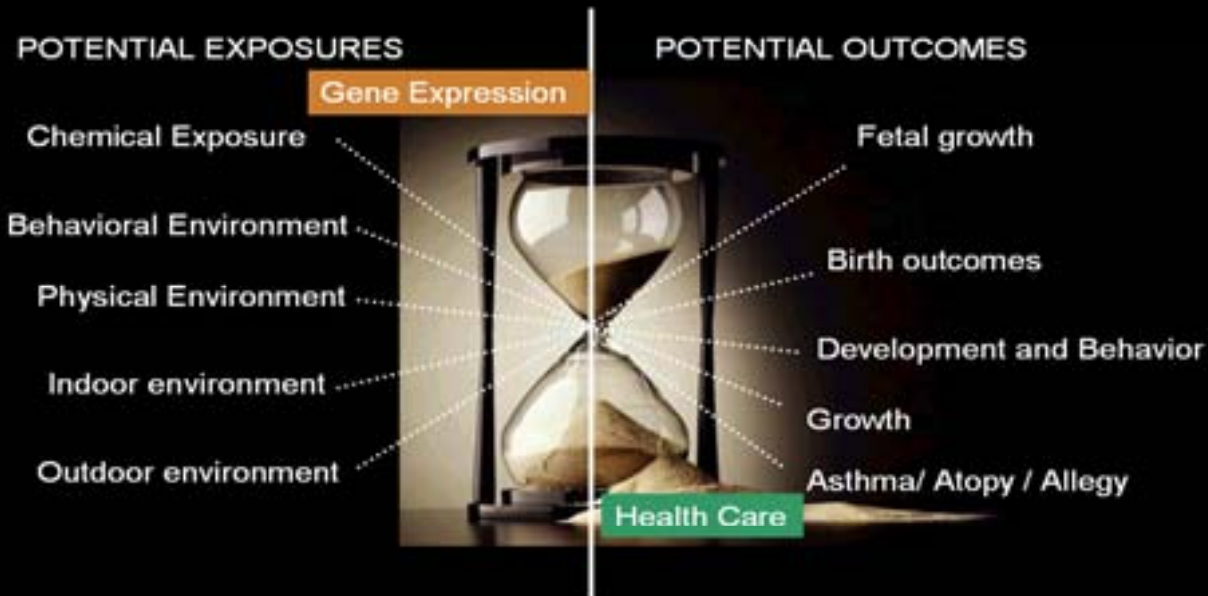


Table 1. Main exposures assessed in the MOCEH protocol by period

Measurement	1. Description	Prenatal period (trimester)		Postnatal period		
		First	Third	Birth	6-24 month	3-5 year
1. Exposures (曝露)						
1) Questionnaire : all mothers	Socio-demographic	✓	✓			✓
	Medical history					
	Psychosocial condition					
	Health behavior					
	Electromagnetic radiation					
	Diet (24hr or 48hr recall/FFQ)	✓			✓	✓
2) Environment measurement : >20% houses	PM2.5,PM10(indoor and outdoor) NO2,HCHO.VOCs (Indoor, outdoor and personal)	✓	✓		✓	
	Questionnaire and Daily activity diary					

Table 1. Main exposures assessed in the MOCEH protocol by period

Measurement	Description	Prenatal period (trimester)		Postnatal period		
		First	Third	Birth	6-24 month	3-5 year
3) Biomarker : (バイオマーカー)	All mothers					
Urine	1-hydroxypyrene/2-naphthol/hippuric acid Cotinine					
	Endocrine disruptor(Bisphenol A/phthalate)	✓	✓		✓	✓
	Oxidative stress(MDA) /Genetic polymorphism(GSTM1/T1)					
Blood	Heavy metal (Pb,Hg, Cd)	✓	✓	✓		✓
	TG, HDL-Cholesterol, Folate	✓	✓			

Table 2. Main outcomes assessed in the MOCEH protocol by period

Measurement	Description	Prenatal period (trimester)		Postnatal period		
		First	Third	Birth	6-24 month	3-5 year
2. Outcomes	: All babies					
Intrauterine growth(子宮内での成長)	Ultrasound	✓	✓			
Pregnancy outcome(妊娠結果)	Preterm , Low birth weight			✓		
Postnatal growth (出生後の成長)	Physical examination				✓	✓
Neurodevelopment (神経発達)	Maternal IQ test		✓			
	Maternal KASQ				✓	✓
	Bayley scales				✓	
	Leiter International Performance Scale					✓
Asthma(喘息)/ Allergy(アレルギー)/ Atopy(アトピー)	Questionnaire				✓	✓
	IL-10/Total uge/Eosinphil					✓

Data collection ongoing.
Figures refer to number completed by end of July 2008

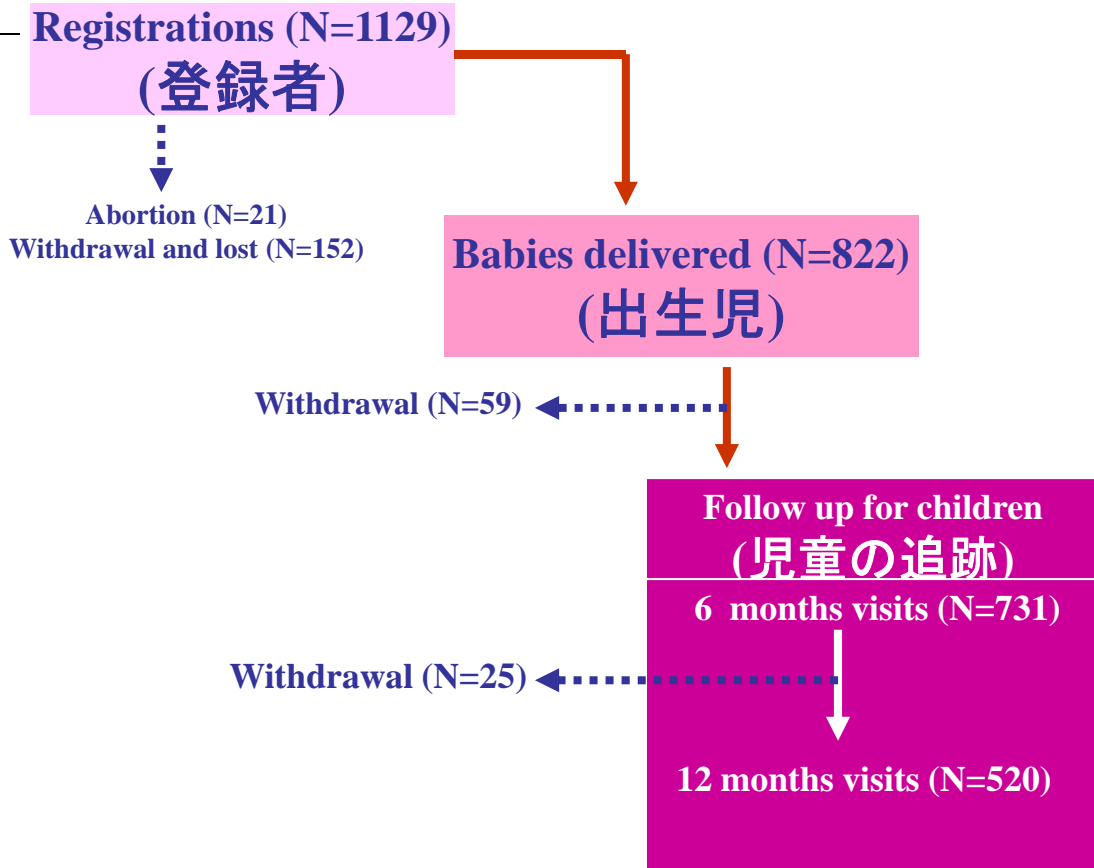


Fig 3. Participants status of MOCEH



II. Lessons and perspectives from MOCEH Study

- barriers(障害), lessons(経験), and perspectives(展望)



Barriers of the study

1. Problems of Recruitment(募集)
2. Problems of Follow up(追跡)
3. Problems of Data Quality Control(データ品質管理)
4. Problems of Biological samples(生体試料)
5. Problems of Environmental samples(環境試料)



1. Problems of Recruitment

- Lack of incentives for research participation
(研究参加に対する奨励要因の欠落)
- Not active participation(参加の非能動性)
- To take a long time for interview, survey, and sampling (面談、調査、試料採取に時間がかかること)



2. Problems of Follow up

- Follow up loss(追跡における損失)
- Move to other place(他の地域への転居)
- Lack of Rapport(意思疎通の欠落)
- Lack of the importance of research
(研究重要性認識の欠落)



3. Problems of Data Quality Control

- The interview method of Questionnaires collection
(アンケート回収の面談方法)
- Missing data of questionnaire(アンケートにおける欠落データ)
- Data quality of biological and environmental samples(生体・環境試料データの品質)



4. Problems of Biological samples

- Difficulties of sampling time of pregnant women and their husbands
(妊娠女性とその夫に関する試料採取時間を確保することの困難性)
- Difficulties of collection for biosamples from local clinics
(地域医療機関から生体試料を採取することの困難性)
- Quality control of weekend sampling
(週末の試料採取における品質管理)



5. Problems of Environmental samples

- Lack of recognition about the importance of environmental assessments

(環境評価の重要性についての認識の欠落)

- Pregnant women do not want to let the others be in their houses

(妊娠女性は他人を家に入れたがらないことが多い)

- Long time for measurement(8 hrs)

(測定に長時間(8時間)かかる)



Lessons from

MOCEH Study

MOCEH研究によって得られた経験



1. Need sufficient time, resources, and benefits : for all partners to ensure active and meaningful participation.
(十分な時間、資源と便益の必要性:すべての参加者による活発で意義ある参加を確実にするため)
2. Need considerable commitment and time :
to establish and maintain trust.
(相当な献身と時間の必要性:信頼関係の構築と維持)



3. Need to recognize, respect, and embrace different cultures of the partners and partner organizations : for successful research efforts.(参加者および参加機関における文化の違いを自覚、尊敬し尊重する必要性:研究努力を成功に導くため)
4. Long-term, continuous employment of high-quality and flexible research staff is imperative for the success of the Study. (研究を成功させるためには良質の柔軟な研究スタッフを長期間継続的に雇用することが必須である。)



5. Results need to

- be shared with the community in ways that are understandable and useful.
- be communicated to participants and lay scientific communities in a timely and sensitive manner.

(結果は

- ・理解・利用可能な方法で地域と共有し、
- ・参加者へ通知し、タイミングよくデリケートな手段で科学界へ提出する必要がある。)



5. Most important thing: Commitment to translating research findings into interventions and policies.
(最も重要な点: 研究結果を調整手段や方針に変換していくことへの努力)



Perspectives(展望) from MOCEH Study



What makes this study different from previous studies?

- **The study is national in scope (本研究の国家規模性)**- MOCEH is the first birth cohort study in Korea. MOCEH Study includes pregnant women ,their husband and their newborn babies from three local centers where are in a different environment.
- **Prospective, well organized, integrated and comprehensive birth cohort (将来的な良く組織立てられた統合・総合的出生コホート)**



The study takes a broad approach to "environment"

(「環境」に対して広いアプローチを取る研究)

- This study includes the wide range of biological, physical, genetic and other factors comprising a mother and newborn babies' environment that can affect health and development.



- **Results will be made public as the study progresses(研究の進展と共に結果を公表)**
- Academic research on the hypothesis that environment at the time of gestation period affects the development of disease during the adulthood.

The study will serve national policy on the health of pregnant women and children :

This study will select target environmental diseases of children and development of environment health index and provide data for national policy on the health of pregnant women and children(妊娠女性と子供の健康のための国家政策に資するためのデータを提供).



Prologue

About the study

Organization

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Mothers and Children's Health and Environment (MOCHE)

A multi-center longitudinal study in Korea

It cannot be too emphasized that environment and health of our children from birth to adolescence need continuous care for the sustainable society....

News

→ MORE

2007/12/07 test news

Support organization

Ministry of Environment, Republic of Korea

Participation organization

- Dept. of Preventive Medicine, Ewha Womans Univ.
- Dept. of Preventive Medicine, Dankook Univ.
- Dept. of Occupational and Environmental Medicine, Ulsan Univ.
- Dept. of Preventive Medicine, Seoul National Univ.
- Dept. of food and nutrition, Ewha Womans Univ.
- Dept. of food and nutrition, Kyung Hee Univ.
- Dept. of Health Management, Hanyang Univ.
- Dept. of Obstetrics and Gynecology, Ewha Womans Univ.
- Dept. of neuropsychiatry, Seoul National Univ.





Acknowledgment

**This study was supported by MOCEH
(Mothers and Children's Environmental
Health) project of the Ministry of
Environment, Republic of Korea.**



www.moceh.or.kr



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WELCOMING MESSAGE



We look forward to meeting you in Busan!

It is our pleasure to invite you to participate at the 3rd WHO International Conference on Children's Health and the Environment: From Research to Policy and Action, to be held in Busan, Republic of Korea from 7 to 10 June 2009. This conference, hosted by the... [HOME](#)

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THANK YOU

