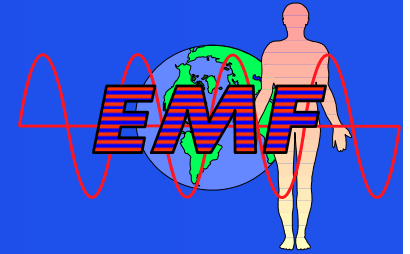


Welcome to the WHO Workshop Sensitivity of Children to EMF



Many thanks to:

Medical Faculty of Gazi University - Nesrin Seyhan and colleagues for local organization and to Sarah Bullock for facilitating the workshop for WHO

Sincere thanks to our co-sponsors:

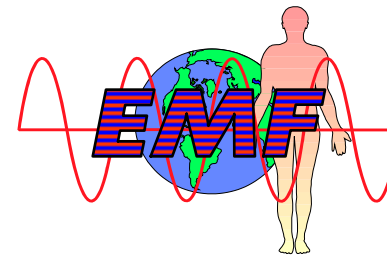
- ✓ Electric Power Research Institute (EPRI)
- ✓ European Commission Coordinated Action (EMF-NET)
- ✓ European Cooperation in the Field of Scientific and Technical Research (COST 281)
- ✓ International Commission on Non-Ionizing Radiation Protection (ICNIRP)
- ✓ Medical Faculty of Gazi University

Istanbul 9-10 June 2004



EMF: A potential environmental risk for children?

Dr Mike Repacholi
**Coordinator, Radiation and
Environmental Health Unit**
World Health Organization
Geneva



Sensitivity of Children to EMF: Workshop Istanbul 9-10 June 2004



WHO: World Health Organization - Microsoft Internet Explorer - TELE2Internet

File Edit View Favorites Tools Help

Back Forward Stop Home Search Favorites Media RSS Print W

Address <http://www.who.int/en/> Go

English | Español | Français

Search OK

World Health Organization

Home 22 April 2004

Countries
Health topics
Publications
Research tools
WHO sites



Photo: AP
Vaccination campaign targets 40 million people
20 April 2004 -- Vaccination Week in the Americas kicks off on April 24th in Haiti. Coordinated by WHO's Regional Office for the Americas, the massive campaign targets children, women and the elderly in 35 countries.
[Vaccination Week](#)

UN General Assembly focuses on road safety
14 April 2004 -- The UN General Assembly gathered today for the first-ever plenary session devoted to road safety. Just one week after World Health Day, governments and UN agencies discussed how to implement measures aimed at reducing the 1.2 million deaths caused annually by road traffic injuries.
[Press release](#) | [World Health Day](#)

Vaccination Week in the Americas: 24-30 April



Features

[Road safety: a public health issue](#) 

[Polio eradication: now more than ever, stop polio forever](#) 

[Features archive](#)

[Bulletin In focus: Clinical trials and ethical review](#)

HIV/AIDS

3 by 5 Initiative
WHO's drive to provide HIV/AIDS treatment to three million people by the end of 2005.
[3 by 5 Initiative](#)

DISEASE OUTBREAKS

Lassa fever
Sierra Leone
[Full text](#)

Nipah virus
Bangladesh
[Full text](#)

[Disease outbreak news](#)

Avian influenza
[Latest information](#)

Severe acute respiratory syndrome (SARS)
[Latest information](#)

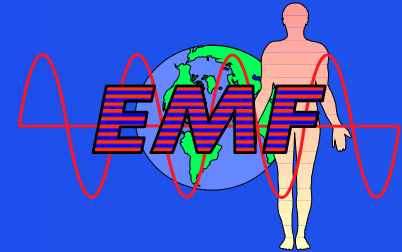
EMERGENCIES

Internet

start | WHO: World Health ... | My Computer | IT | 8:50 AM

**Children
have been
identified as
a target for
health
protection
by WHO**

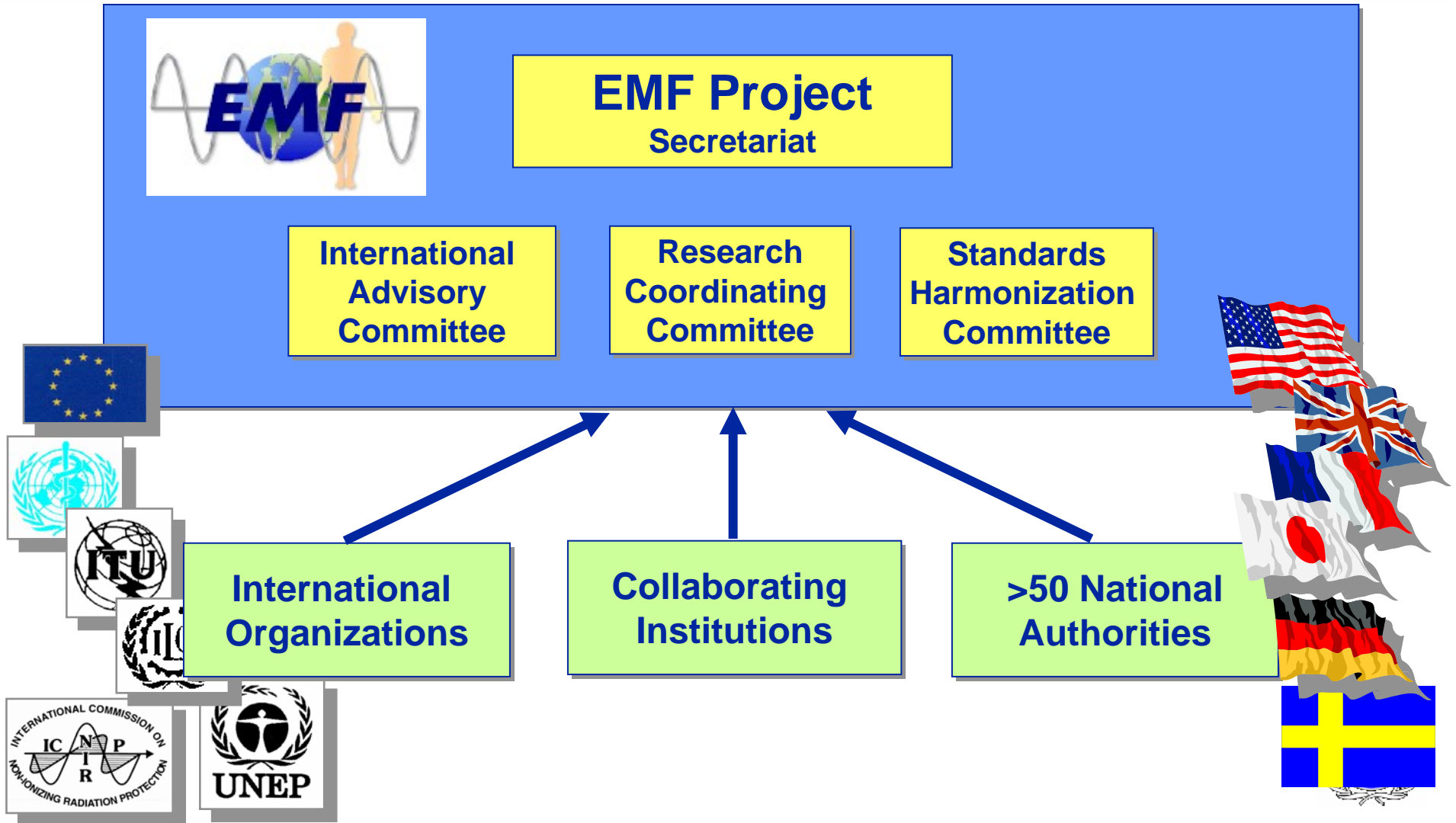
International **EMF** *Project*



- Established in 1996
- To assess health and environmental effects of exposure to electromagnetic fields in the frequency range from 0 to 300 GHz
- A multinational, multidisciplinary effort to create and disseminate information appropriate to human health risk assessment for EMF
- Coordinated by WHO



Structure



Scientific Reviews

- Objectives

- To provide a **status report** on current knowledge related to possible health effects of EMF
- To identify **gaps in knowledge** that need further research leading to better health

What we know...

What we don't know...



International Scientific Reviews

- Frequency-related



- Static and low-frequency fields, Bologna, 1997
- Intermediate frequency fields, Maastricht, 1999
- Radio frequency fields, Munich, 1996
- RF pulse-modulated fields, Erice, 1999



International Scientific Reviews

- Specific topics

- Psychosocial impacts of EMF exposure, Graz, 1998
- Environmental impacts of EMF, Ismaning, 1999
- Adverse temperature levels in the human body, Geneva, 2002
- Applying precaution to EMF, Luxembourg, 2003
- Children and EMF
- Hypersensitivity



WHO Health Risk Assessment



- EHC 35 Extremely low frequency (ELF) fields (1984)
- EHC 69 Magnetic fields (1987)
- EHC 137 Electromagnetic fields (300 Hz-300 GHz) (1993)



<http://www.who.int/emf>

*What has
been done?*

*What is
being done?*

*What needs to
be done?*

time

WHO Research
Reviews

WHO Research
Database with help of
COST 281

WHO Research
Agenda promoted
by WHO



WHO Research Agenda

Research needs

- identified when the evidence for a health risk is judged **suggestive, but insufficient** to meet the criteria for assessing health risk....Children??
- established on the basis of **unconfirmed effects** having implications for health, and **replication** of key studies to confirm effects

Goal: To promote studies that demonstrate a reproducible effect of EMF exposure that has the likelihood to occur in humans and has a potential health consequence

Why Children?

- Children are known to be more sensitive to exposure to many environmental agents (chemicals, UV, ionizing radiation etc)...what about EMF?
- ELF magnetic fields are a 2B carcinogen (possibly carcinogenic to humans) based on childhood leukaemia epidemiological studies
- IEGMP (Stewart committee) suggested that children may be more vulnerable to RF field exposure because:
 - Developing nervous system
 - Brain tissue is more conductive
 - Greater absorption of RF in head
 - Longer life-time exposure



Technology is advancing

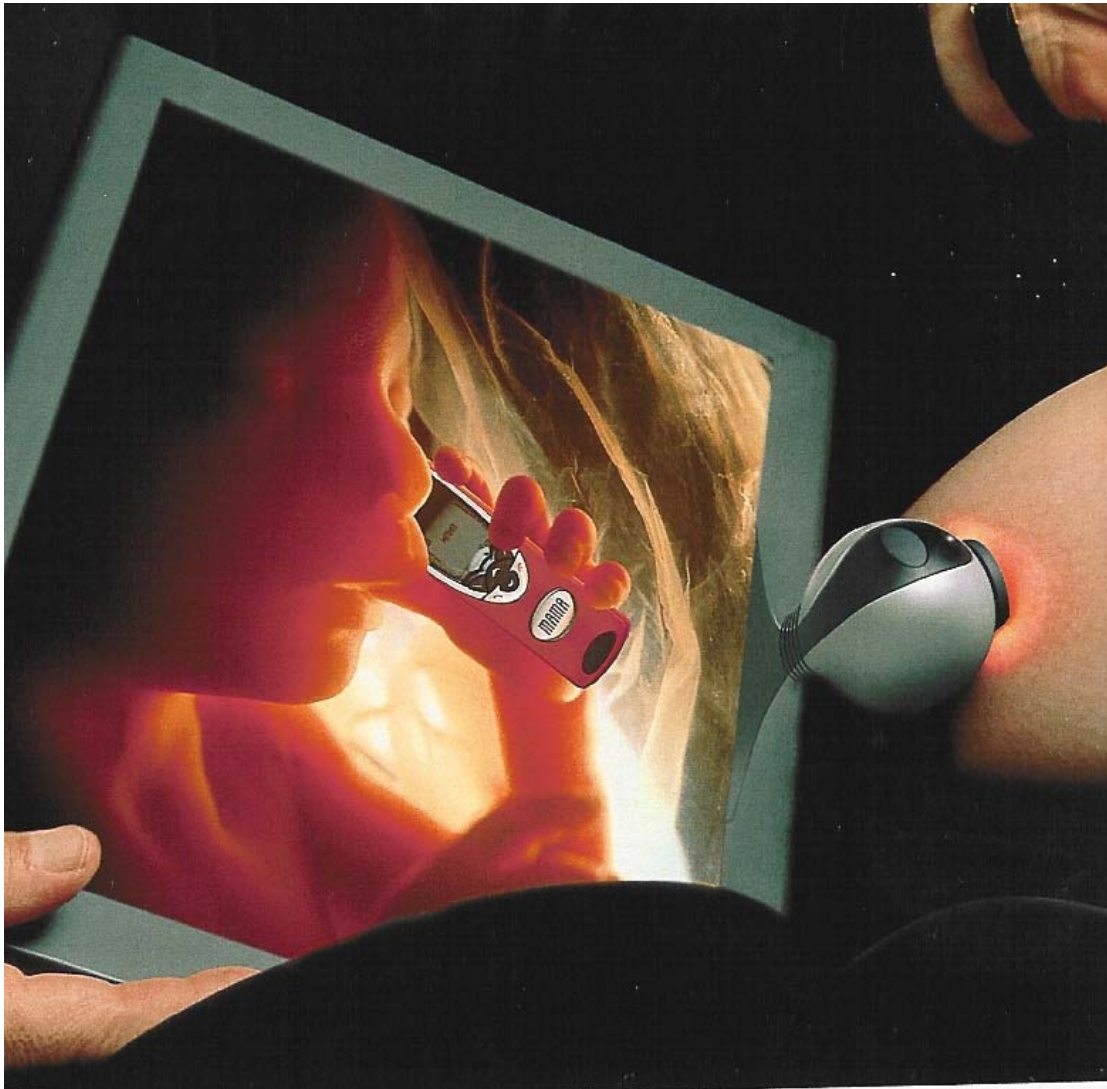
New York 1893



Today



Children are exposed to technology



- **Recent UK survey (25% children 7-10 years have a mobile phone)**
- **In Germany use among 12-13 year olds increased from 3% (1998) to 69% (2002)**
- **Child exposure is beginning at younger ages!!**



Key Issues on Research Agenda

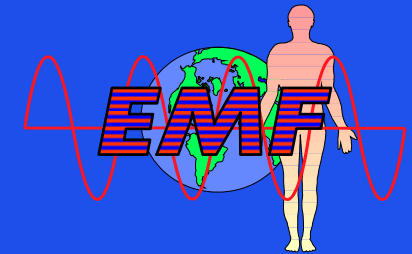
Effects of EMF on Children



- **Stewart Report (UK: IEGMP 2000)**
- **Health Council of the Netherlands (2002) did not find evidence to suggest children more sensitive**
- **EC: COST 281 workshop (2002) noted children's heads absorb more RF than adults**
- **Review by NRPB (2003) suggests there has been little research to determine if children are more sensitive to RF fields**



Workshop



Motivation

- ✓ Rapid increases in EMF exposure from new technologies
- ✓ Lack of research to assess the sensitivity of children to EMF
- ✓ Known sensitivity of children to some environmental agents

Need a specialized workshop to

- Assess what is known about possible health effects
- Identify research needed to fill gaps in knowledge so better assess any risks to children
- Compile a research agenda for the research community
- Recommend policy options for national authorities...are special precautionary measures needed?



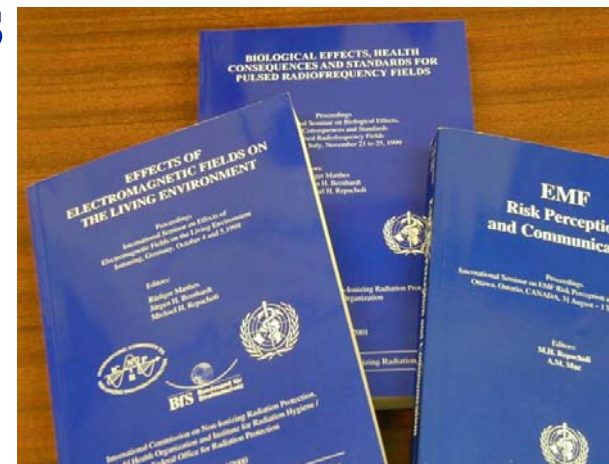
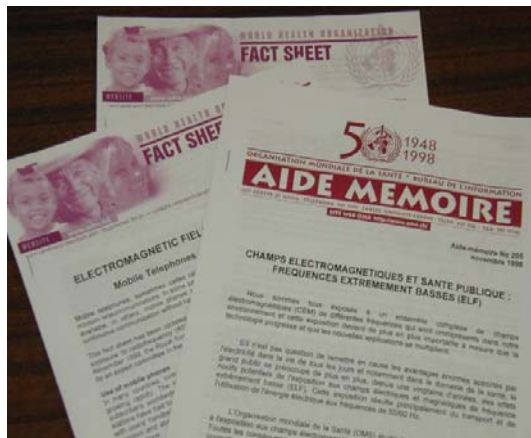
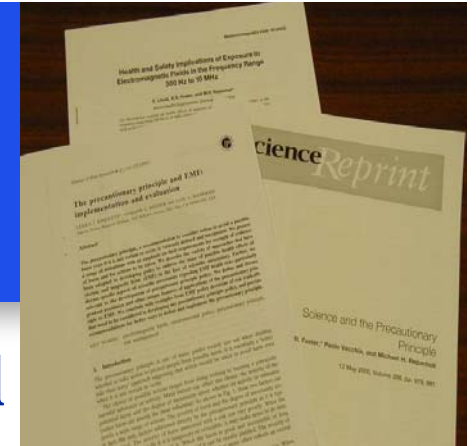
Workshop speakers

Emphasis given to presenters with specialization in child development and physiology but not associated with EMF...will facilitate enlightened discussion with EMF specialists



Workshop outputs

- Summary report to peer-reviewed journal
- Book of abstracts of all presentations
- Proceedings of speakers presentations (Environmental Health Perspectives, special issue)
- EMF Project web site
- WHO Fact Sheet and Press Release for a press conference with UN Press Corps



The International EMF Project
Radiation and Environmental Health
Protection of the Human Environment
World Health Organization
21 Avenue Appia
CH-1211 Geneva 27
Switzerland

email: emfproject@who.int
website: www.who.int/emf

