International EMF Project
An update

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World Health Organization
Outline

- Who we are …
- What we do …
  - Completed work over the past year
  - Ongoing work
  - Continuous updates
- What we intend to do …
Malaria progress shows development aid for health works
15 December 2009 -- Significant progress has been made in delivering life-saving malaria nets and treatments over the last few years, but the coverage of malaria programmes needs to be stepped up drastically in order to meet the Millennium Development Goals (MDGs), according to a report released today by WHO.
Read the news release on the World malaria report 2009

Afghanistan first to use new vaccine against polio
15 December -- Using a new vaccine for the first time, a sub-national polio immunization campaign will take place from 15-17 December in Afghanistan. About 2.8 million children under five in the Southern, South-Eastern and Eastern Regions of Afghanistan will receive the vaccine.
Read the news release on vaccination against polio in Afghanistan

Climate change and health
Topical overview - 10 facts on climate - Climate change and human health
WHO International EMF Project

- Established in 1996
- Coordinated at global level at WHO headquarters
- Financially supported by contributing Member States
WHO Partners in Radiation

International Organizations

International Advisory Committee

Collaborating Centres

National Authorities

World Health Organization
EMF: An Environmental Risk?

- Risk Assessment
  - The Evidence
- Risk Perception
  - The Public Concern
- Risk Management
  - The Policies
EMF Research

- does not perform research
- does not fund research
- promotes research
  - Research Agendas
Research agenda

Introduction

The Introduction is followed by the definitions used by WHO International EMF Project. The next section of the agenda is a list of needed EMF research that still needs to be conducted to afford assessments of any health risks from exposure to EMF.

The list of required research is followed by a set of general guidelines for quality EMF research that includes resources for further investigation of the characteristics of good EMF research.
**Done:**
- Commissioned status report
- Survey experts opinion
  (deadline 21 December 2009)

**To-do list:**
- Convene expert group
- Develop document
EMF Research

- does not perform research
- does not fund research
- promotes research
  - Research Agendas
- assesses research
  - Scientific workshops
  - Health risk assessments
EMF Health Risk Assessment

**Problem Formulation**

**Exposure Assessment**
- Determine the amount, duration and pattern of exposure to the agent

**Hazard Identification**
- Review key research to identify any potential health problems that an agent can cause

**Exposure-Response Assessment**
- Estimate how much of the agent it would take to cause varying degrees of health effects that could lead to illnesses

**Risk Characterization**
- Assess the risk for the agent to cause cancer or other illnesses in the general population
Health Risk Assessment

Problem Formulation

Hazard Identification
Review key research to identify any potential health problems that an agent can cause

Exposure Assessment
Determine the amount, duration and pattern of exposure to the agent

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Risk Characterization
Assess the risk for the agent to cause cancer or other illnesses in the general population

All studied outcomes

International EMF Project

World Health Organization
Health Risk Assessment (RF) Schedule

- INTERPHONE multinational epidemiologic study
  - IARC evaluation of carcinogenic risks to humans from RF
  - WHO assessment of all health risks to humans from RF

- IARC Earliest: Feb. 2011
- EHC 2009-2012
The International Commission on Non-Ionizing Radiation Protection (ICNIRP) will be holding an International Workshop "Evaluation and Communication of Scientific Evidence and Uncertainty - Towards a Consistent Terminology in Non-Ionizing Radiation" on 23-24 November 2009 at the Old Library at the University of Salzburg, Hofstallgasse 2-4, Austria. The Workshop is co-sponsored by the World Health Organization (WHO) and the research network on the Implications of Biomedicine for the Assessment of Human Health Risks (IMBA).

Background

National and international health related agencies use different systematic approaches for evaluating scientific evidence on which to base health policy. These processes provide a structure that formalizes quantitative and qualitative assessments of the risk to health and prescribe specific language to communicate the strength of evidence. Applying quantitative evidence review to the effects of non-ionizing radiation on human health is under discussion. Another challenge is to provide an accurate translation of scientific information and terminology for the media, policy-makers and the general public.
Objectives

- To develop a shared vision among agencies on the approach to evaluating scientific evidence for health risks from NIR exposure
Different systems to grade evidence …
GRADE: an emerging consensus on rating quality of evidence and strength of recommendations

Guidelines are inconsistent in how they rate the quality of evidence and the strength of recommendations. This article explores the advantages of the GRADE system, which is increasingly being adopted by organisations worldwide.
Objectives

- To develop a shared vision among agencies on the approach to evaluating scientific evidence for health risks from NIR exposure

- To decide on a consistent terminology in NIR
  - e.g. IARC
    - Level of evidence for each type of studies (sufficient, limited, inadequate, lack of effect)
    - Overall classification
      - **Group 1**: Is carcinogenic to humans
      - **Group 2A**: Probably is carcinogenic
      - **Group 2B**: Possibly is carcinogenic
      - **Group 3**: Not classifiable
      - **Group 4**: Is probably not carcinogenic
Objectives

- To develop a shared vision among agencies on the approach to evaluating scientific evidence for health risks from NIR exposure
- To decide on a consistent terminology in NIR
- To provide a basis for translating scientific terminology for the media, policy-makers and ultimately the public
WHO declares swine flu pandemic

Dr Chan said the pandemic would be of "moderate severity".

The World Health Organization (WHO) has declared a global swine flu pandemic after holding an emergency meeting.

What is phase 6?

Phase 6 is a pandemic, according to the WHO definition.

What about severity?
An IARC Working Group has classified UV-emitting tanning devices as “carcinogenic to humans” (Group 1). The Working Group was convened by the IARC Monographs programme and the conclusions are reported in an article and press release issued today by The Lancet Oncology.

Combined analysis of over 20 epidemiological studies shows that the risk of cutaneous melanoma is increased by 75% when the use of tanning devices starts before age 30. There is also sufficient evidence of an increased risk of ocular melanoma associated with the use of tanning devices. Studies in experimental animals support these conclusions and demonstrate that ultraviolet radiation (UVA, UVB, and UVC) is carcinogenic to humans.
Les cabines à UV aussi dangereuses que l’arsenic

UNE LIGNE VIENT DE DEMONSTRER QUE LES CABINES DE BRONZAGE POURRONT S’EMPOISONNER DES PLUS PERMANENTS.

Les autorités sanitaires suisses ont décidé de classer les cabines de bronzage dans la catégorie des radicalement les plus dangereuses.

La nouvelle classification signifie que les cabines de bronzage et l’expansion aux UV sont des causes certaines de cancer au même titre que le tabac.

La nouvelle mesure vise à éviter que celui qui, par l’usage du soleil, rencontre le sens pratique des incertitudes de l’usage de l’UV.

En effet, une étude récente de l’Organisation Mondiale de la Santé (OMS) a révélé que le risque de cancer de la peau provenant des rayons UV peut atteindre 75% chez les jeunes utilisateurs des cabines de bronzage après plus de 20 ans.

Le tabac a récemment été classé par l’American Cancer Society dans la catégorie des produits cancérigènes de premier degré. Les autorités de la santé publique recommandent de réduire l’exposition aux UV en utilisant des crèmes solaires et en évitant les heures du pic de radiances solaires.

Le World Health Organization (OMS) a publié récemment une étude sur l’impact des rayons UV sur la santé humaine. Les résultats ont montré que l’exposition aux UV peut conduire à des problèmes de peau, des troubles oculaires et même des cancers cutanés. Les États-Unis et l’Europe ont largement adopté des mesures de protection contre l’exposition aux UV, mais en Suisse, la situation est différente.

Le débat sur l’utilisation des cabines de bronzage est en train de se réchauffer. Les autorités sanitaires sont en train de réfléchir à des solutions alternatives pour répondre aux besoins de bronzage des Suisses.

Le fait de bronzer en utilisant des cabines de bronzage peut être bénéfique à court terme, mais à long terme, cela peut être extrêmement dangereux. Les autorités sanitaires s’efforcent de sensibiliser les Suisses à ces risques.

Source : OMS
Topics of interest

- Mobile phones
- Base stations
- Children
- Exposure standards
Mobile phones

The INTERPHONE study: design, epidemiologic and description of the study population

Elisabeth Cardis · Lesley Richardson · Isabelle Delvoux · Bruce Armstrong · Christoffer Johansen · Monique Kilkenny · Patricia McKinney · Siegal Sadetzki · Joachim Schüz · Anthony Swerdlow · Martine Varnes · Gabriele Berg · Maria Blettner · Joseph Bowman · Juliane Brown · Angela Chetrit · Helle Collatz Christensen · Angus Cook · Sarah Hepworth · Graham Giles · Martine Hours · Ivano Iavarone · Avital Jarus-Hakak · Lars Klaebøe · Daniel Krewski · Susanna Lagorio · Stefan Lönn · Simon Mann · Mary McBride · Kenneth Muir · Louise Nadon · Marie-Elise Parent · Neil Pearce · Tiina Salminen · Minouk Schoemaker · Brigitte Schlehofer · Jack Siemiatycki · Masao Taki · Toru Takebayashi · Tore Tynes · Martie van Tongeren · Paolo Vecchia · Joe Wiart · Alistair Woodward · Naohito Yamaguchi

Cases:
- 2,765 gliomas
- 2,425 meningiomas
- 1,121 acoustic neuroma
- 109 malignant parotid gland

Controls:
- 7,658
Long-term use of mobile phones 'may be linked to cancer'

Long-term use of mobile phones may be linked to some cancers, a landmark international study will conclude later this year.

By Martin Beckford and Robert Winnett
Published: 8:00 AM BST 24 Oct 2009

Fact sheet on mobile phones currently under revision

Electromagnetic fields and public health: mobile telephones and their base stations

Fact sheet on mobile phones currently under revision
Base stations and wireless networks

- Some studies have been performed
  - Well-being and performance
  - Cancer

- Difficulty of personal exposure assessment

Conclusions:
“Considering the very low exposure levels and research results collected to date, there is no convincing scientific evidence that the weak RF signals from base stations and wireless networks cause adverse health effects”

**Done**
Commissioned systematic review of health impact of base stations

**To-do list:**
Update Fact sheet no.304
Advice to Member States

- Risk communication
  - Address public concern and public perception

- Risk management
  - Adoption of EMF radiation protection standards
  - Policy recommendations
1. Introduction
EMF Communications & the Public

In Kenya telecommunications operators are increasingly faced with the difficult task of communicating EMF information to the public. The challenges include:-

- Increased Public ‘awareness’ on EMF issues/Demand for information.
- Residents resisting construction of new BTS citing EMF radiation and visual impact.
- Inaccurate or sensational information in International Press and the Internet
- Credibility gap/mistrust of information coming from telecommunications operators
- Anxiety over EMF emissions from multiple antennas where there is heavy colocation and site sharing

EMF Communications & Telecommunications operators challenges
-Lack of clear national EMF Standards
-The policies and regulations are scattered, and do not provide sufficient comfort in addressing the genuine concerns of the citizens.
-Multiple Regulatory agencies managing EMF issues (in Kenya we have four!)
Public concern
Public education
A topic of media attention…
Public education

Responsible authorities
Different roles

- Role of WHO
  - Evidence-based recommendations
  - Global public health view
  - Prevention strategy

- Role of national authorities
  - Recommendations based on local circumstances
    - Economics
    - Values and preferences
    - Political dimension
  - Precautionary approach
Example: Recommendations regarding children's use of mobile phones
Research on Children

- MOBI-KIDS (13 countries) – 10-24 year olds – 5 year study involving 13 countries
- HPA Wi-Fi study (United Kingdom) – Exposure of children from Wi-Fi networks – To be finalized by 2010
- MobilEe (Germany) – Mobile phone use and well-being – 8-17 years old
- MoRPhEUS (Australia) – Mobile phone use and cognitive development – Phase 1: currently being finalized, for 11-14 years olds – Phase 2: starting in 2009, for 9-10 years olds
- CEFALO (DK, SE, CH, UK) – Case-control study of brain tumour risk among children and adolescents (7-19 year olds)
Policies on Children
International Advisory Bodies

- **World Health Organization**
  - WHO Fact Sheet 193 (2000)
    "Present scientific information does not indicate the need for any special precautions for use of mobile phones. If individuals are concerned, they might choose to limit their own or their children's RF exposure by limiting the length of calls, or using 'hands-free' devices to keep mobile phones away from the head and body."
  - Research on the effects of mobile phone use on children remains a high priority on its research agenda

- **ICNIRP and IEEE**
  - In their current RF exposure guidelines, no differentiation between children and adults

- **European Commission (SCENIHR)**
  - No specific recommendations concerning children
# Policies on Children

## National recommendations

- Australia
- Belgium
- Canada
- Finland
- France
- India
- Ireland
- Israel
- The Netherlands
- New Zealand
- Russia
- United Kingdom
- United States
Policies on Children
National and local level

- Health Canada
  - "currently sees no convincing evidence of increased risk of disease from exposure to RF EMF from cell phones"

- Toronto's advice on child mobile use
  - A Toronto municipal environmental protection officer advised parents to limit children/teenagers use of mobile phone to 5 or 10 minutes
Guide for Local Authorities
Wireless Communications Networks

To provide information and advice to local authorities when dealing with health related issues related to development of wireless networks

Outline
- EMF and wireless networks – overview
- Health research
- Risk perception and risk communication
- Case studies
- New technologies (e.g. WiMax)
International EMF Project

EMF WORLD WIDE STANDARDS
Overview

Background

Aims

Types of EMF standards

- Exposure, emission, measurement standards
- Voluntary vs. mandatory standards

Relevant authorities

Methods applied to data presented

Development of science-based exposure limits

Related publications

Glossary

Global Database on Electromagnetic Field Standards

an interactive tool for monitoring EMF health legislation

Global Database on Electromagnetic Field Standards

an interactive tool for monitoring EMF health legislation
- Static fields
- Low frequency (ELF) range
- Radiofrequency (RF) range
- Public limits
- Occupational limits
Monitoring and advising on standard-setting

- BRIC countries (Brazil, Russia, India and China)
- East African Community (Tanzania and Rwanda)
- Saudi Arabia
- Albania
- Oman
- Bahrain
- .....