

International EMF Project

An update

Dr E. van Deventer
IHE/PHE/HSE



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 ...





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HIGHLIGHTS



WHO/Emily Simon

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](#)

Pandemic (H1N1)

[Oseltamivir resistance, immunocompromised hospital patients](#)

[WHO advisory bodies and the pandemic](#)

[Full coverage](#)

KEY WHO INFORMATION

[Director-General](#)
Director-General and senior management

[Governance of WHO](#)
WHO Constitution, Executive Board and World Health Assembly

[Media centre](#)
News, events, fact sheets, multimedia and contacts

[International travel and health](#)
Publication on travel risks, precautions and vaccination requirements

[World Health Report](#)
Annual report on global public health and key statistics

Climate change and health



[Topical overview -](#)



[10 facts on climate](#)



[Climate change and](#)

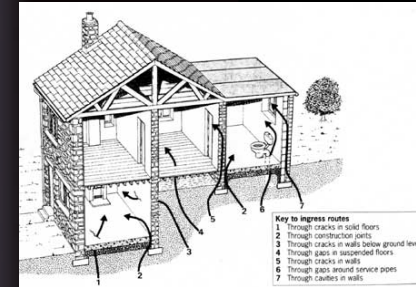
POWER LINES



RADAR



TRAINS



0 Hz 10² 10⁴ 10⁶ 10⁸ 10¹⁰ 10¹²

FREQUENCY (Hz OR CYCLES PER SECOND)



VISIBLE LIGHT



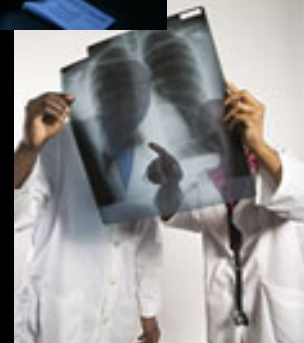
X-RAY



PERSONAL COMPUTER



CELL PHONE

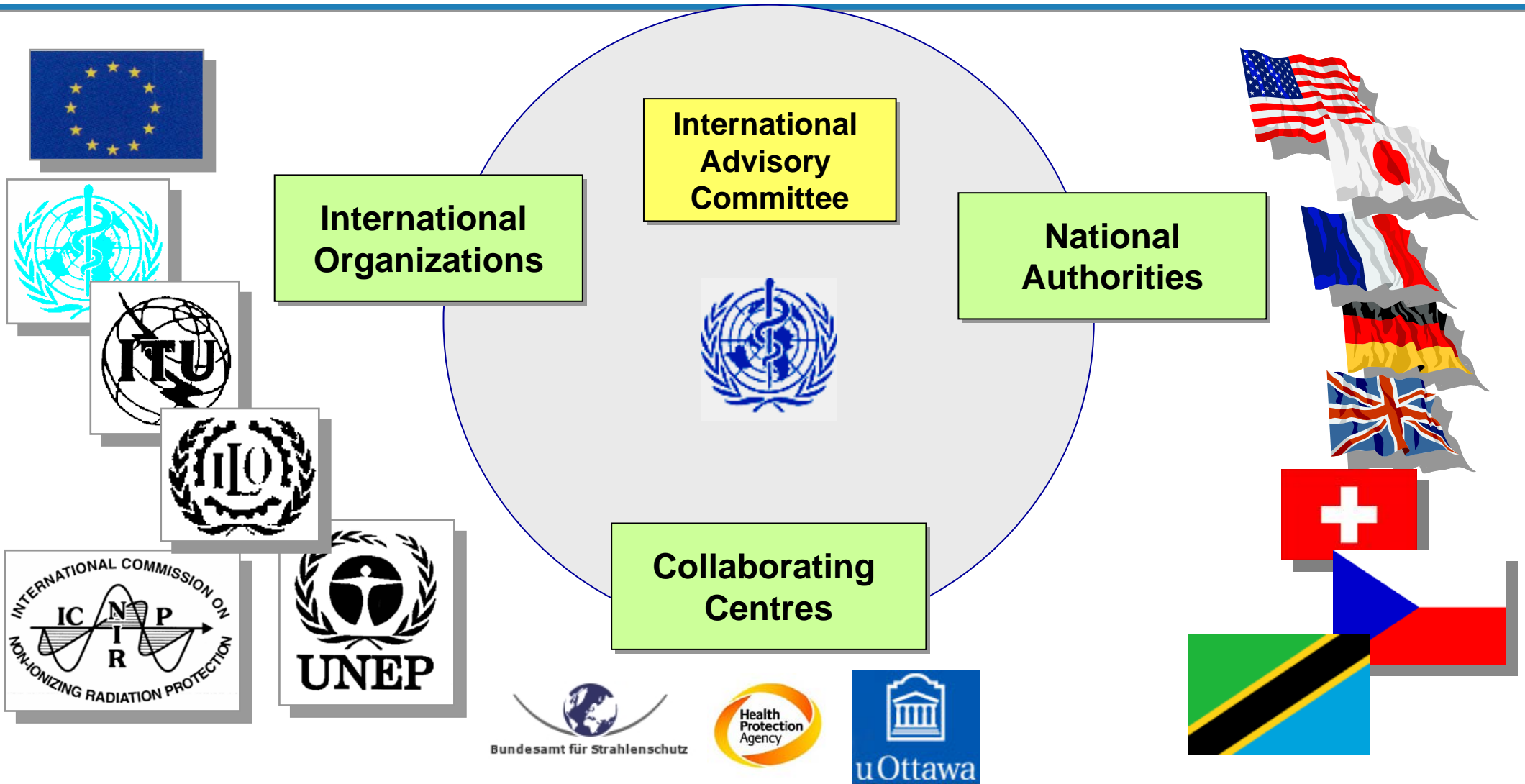


WHO International EMF Project



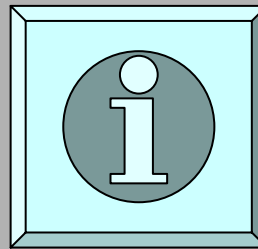
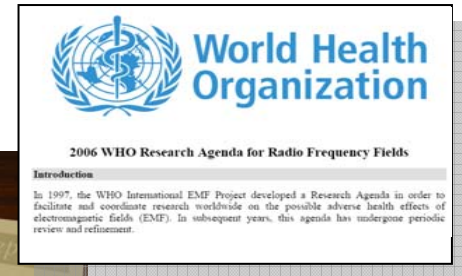
- Established in 1996
- Coordinated at global level at WHO headquarters
- Financially supported by contributing Member States

WHO Partners in Radiation



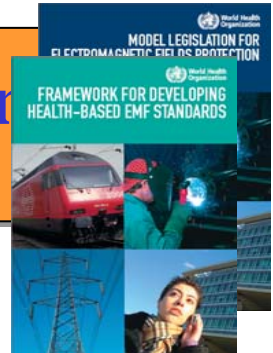
EMF: An Environmental Risk?

Risk Assessment
The Evidence



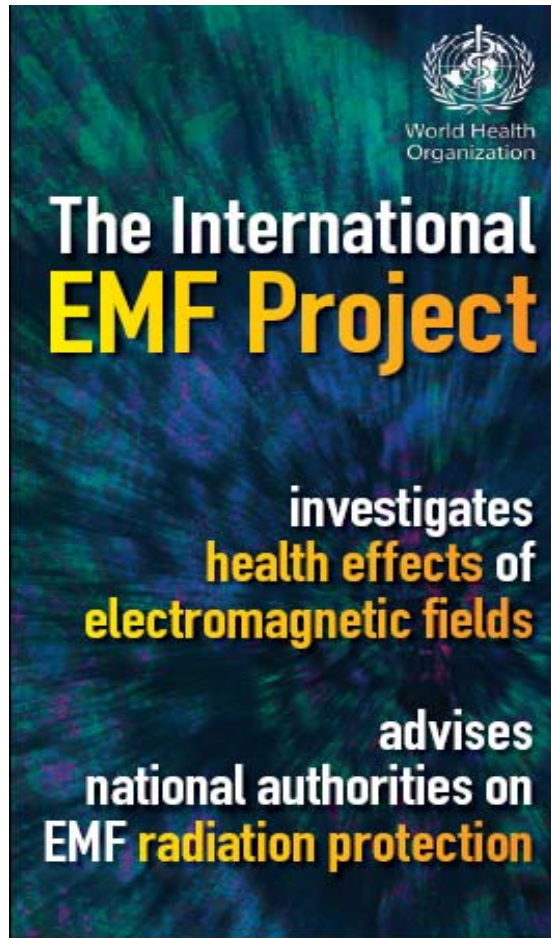
Risk Perception
The Public Concern

Risk Management
The Policies



World Health Organization

EMF Research



does not perform research

does not fund research

promotes research
– Research Agendas



EMF Research Agendas



Funding Agencies



Sixth Framework Programme
2002 - 2006

MTHR
Mobile Telecommunications and Health Research



World Health Organization

Research agenda

Introduction

This 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 carried out, including 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.



World Health Organization



World Health Organization

2006 WHO Re

Introduction

In 1997, the WHO Intern facilitate and coordinate electromagnetic fields (EMF) review and refinement.

In June 2003, a major update undertaken with the input several of the research ne necessary. Also, three spe needs in the RF range were ad hoc committee of sci supersedes all previous RF

The specialized workshops pointed out the need for focused research on children especially regarding brain cancer and cognitive function. The workshop on EMF hypersensitivity (EHS) indicated that there should be further research to characterize EHS but did not recommend further studies on the relationship between EMF and EHS since, from the studies completed so far, there was no substantiated evidence for a causal relationship. Research on potential health effects from base station RF fields was deemed of low priority since studies of cancer risk related to such exposure are unlikely to be feasible and informative because of the difficulty of reconstructing adequately long-term historical exposures.

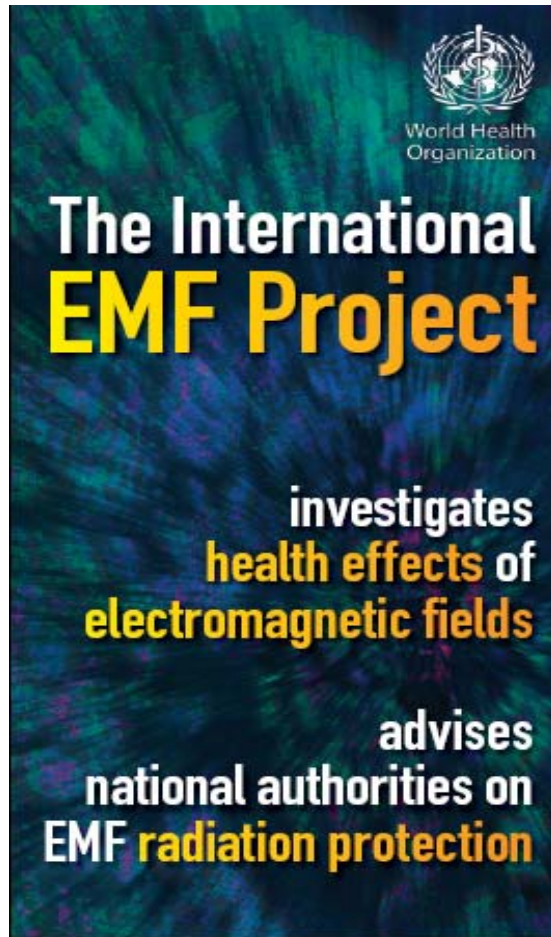
Done:

- 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

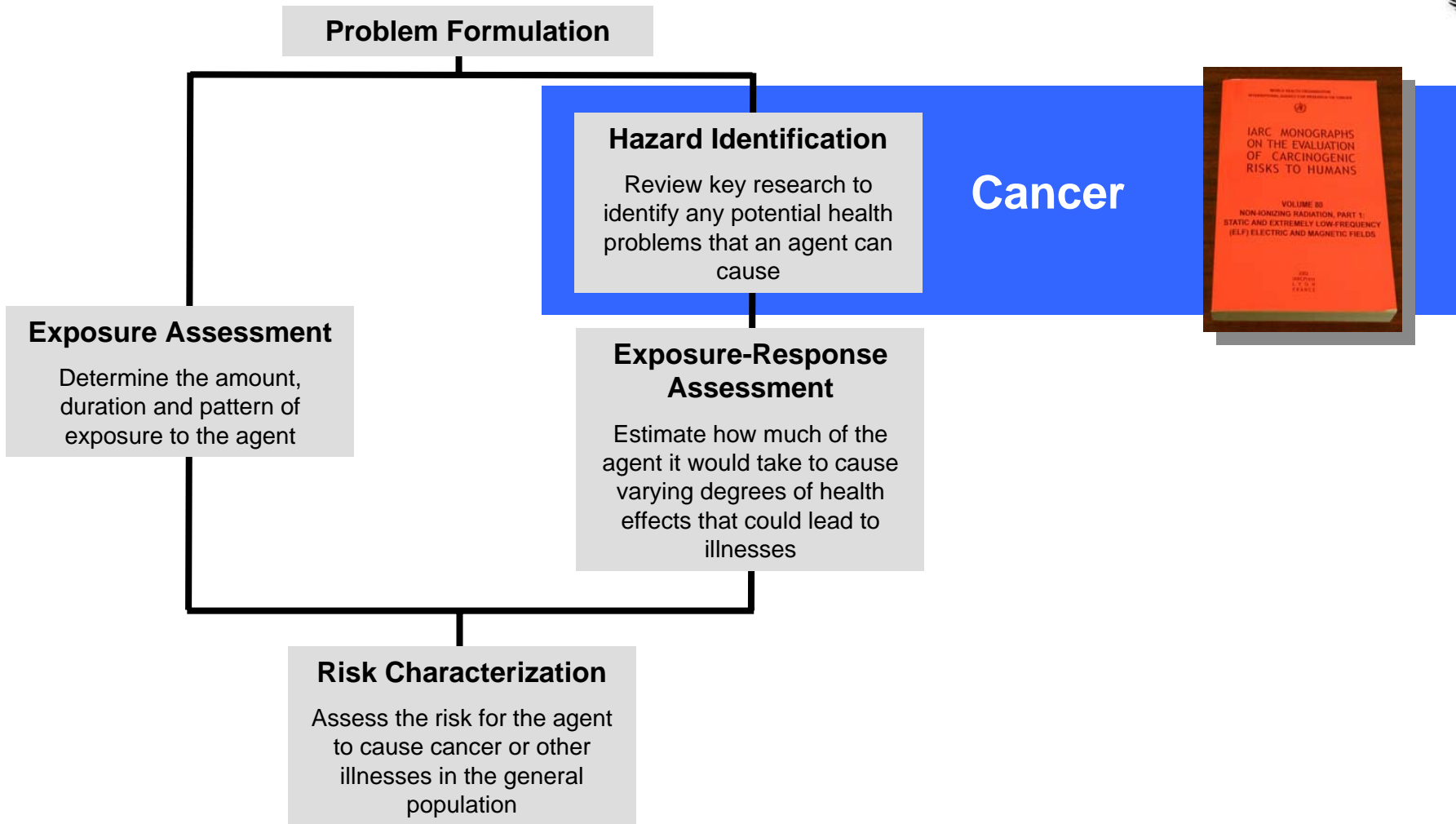
– Research Agendas

assesses research

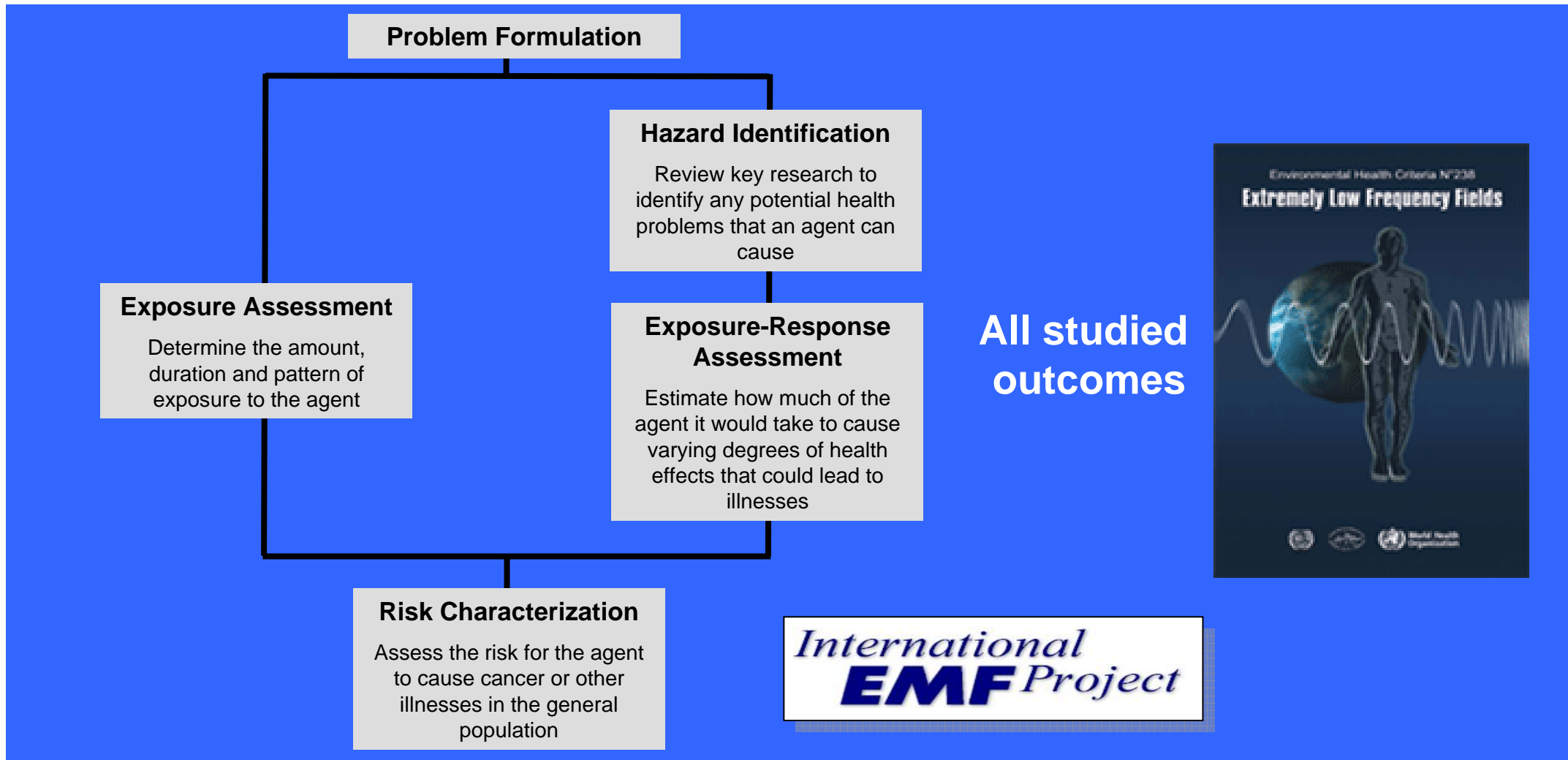
– Scientific workshops

– Health risk assessments

EMF Health Risk Assessment

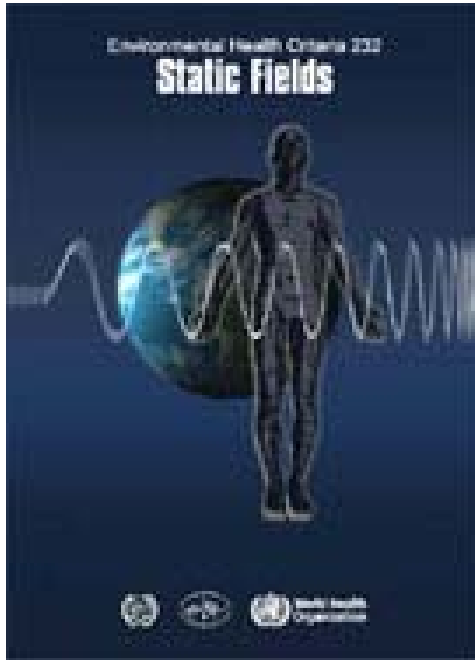


Health Risk Assessment



Health Risk Assessments

Electromagnetic Fields



2006

ICNIRP Guidelines

GUIDELINES ON LIMITS OF EXPOSURE TO STATIC MAGNETIC FIELDS

International Commission on Non-Ionizing Radiation Protection*

INTRODUCTION

THE RAPID development of technologies in industry and medicine using static magnetic fields has resulted in an increase in human exposure to these fields and has led to

ELF

Open Consultation

2009

I C N I R P

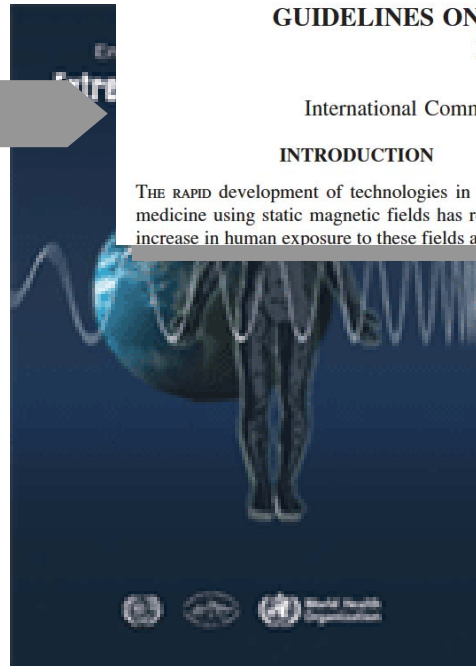
Open consultation until 31 October 2009

Guidelines on Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz to 100 kHz)
OPEN CONSULTATION

Draft guidelines: [File download](#)

ICNIRP is inviting comments on the draft "Guidelines on Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz to 100 kHz)". Besides comments on the frequency range from 0 to 1 Hz covering the issue of electric fields induced by motion in spatial gradients, time invariant magnetic fields will contribute to the guidance ICNIRP is currently developing.

The consultation process opens on 29 July 2009 and ends on Sunday 31 October 2009. After consultation, all comments will be submitted to the Commission members for finalization of the draft. Information regarding the publication date will be displayed on the ICNIRP website at due time.



2007



2012?

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***



Salzburg, Austria



Workshop on 23 & 24 Nov 2009
Risk Assessment & Terminology

Announcement
Program
Register here
shortly!
Venue

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.



**World Health
Organization**

Objectives

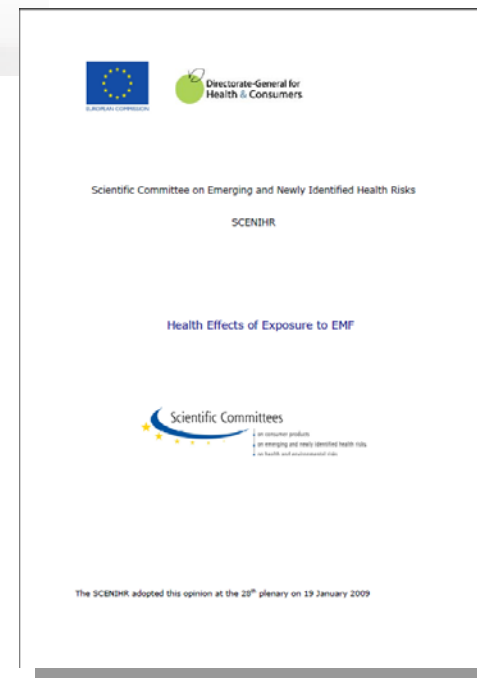
- To develop a shared vision among agencies on the approach to evaluating scientific evidence for health risks from NIR exposure



Different systems to grade evidence ...

International Agency for
Research on Cancer (IARC)

Centre International de
Recherche sur le Cancer (CIRC)



GRADE



World Health
Organization



Grading of Recommendations Assessment, Development and Evaluation

GRADE WORKING GROUP

RATING QUALITY OF EVIDENCE AND STRENGTH OF RECOMMENDATIONS



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

BMJ | 26 APRIL 2008 | VOLUME 336

CMAJ 2003, BMJ 2004, BMC 2004, BMC 2005, AJRCCM 2006, Chest 2006, BMJ 2008



World Health Organization

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





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Page last updated at 20:51 GMT, Thursday, 11 June 2009 21:51 UK

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WHO declares swine flu pandemic



00.00 / 02.58

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

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

SWINE FLU PANDEMIC

- KEY STORIES
- ▶ Swine flu vaccination under way
 - ▶ 'Lucky break' in swine flu fight
 - ▶ Fears swine flu 'on the way back'
 - ▶ Deal reached over swine flu jabs
 - ▶ Critical care flu planning 'weak'
 - ▶ Pregnant women to get flu vaccine

FEATURES AND ANALYSIS



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- Alert & Response Operations
- Diseases
- Global Outbreak Alert & Response Network
- Biorisk Reduction

Global Alert and Response (GAR)

Country activities | Outbreak news | Resources | Media centre

[WHO](#) > [Programmes and projects](#) > [Global Alert and Response \(GAR\)](#) > [Diseases covered by GAR](#) > [Pandemic \(H1N1\) 2009](#) > [Influenza A\(H1N1\): frequently asked questions](#) > [What is phase 6?](#)

What is phase 6?

Updated 11 June 2009

What is phase 6?

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

[WHO pandemic phase descriptions \[pdf 341kb\]](#)

[Pandemic influenza preparedness and response](#)

What about severity?

International Agency for Research on Cancer

ENGLISH FRANÇAIS

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MEDIA CENTRE - IARC NEWS

2009 | 2008

2009

Sunbeds and UV Radiation

29/07/2009 -

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.



Suisse

LENDI 20 JUILLET 2009 / WWW.20MINUTES.CH

30 secondes

Et sous des briques

Un ouvrier de 59 ans est défilé après un grave accident survenu à Bâle. Il a été entraîné par une palette de briques qui s'était détachée d'un camion après une collision avec un câble électrique.

Le cha fermée

MO (TI). Une crèche de nu-Bregenzano a été obligée de fermer à cause de la grippe A(H1N1). Une éducatrice de moins de 3 ans ont été atteints par le virus.

Les rôles harmonisés

En Suisse sur deux qui reviennent égaux les hommes devraient être les mêmes partout, selon un sondage effectué pour le Reader's Digest. Les Romains, les femmes et les petits revenus sont les plus favorables.

Le mal contre auto

EN (BE). Un cheval piégé à la longe s'est emballé après un mal à Staden.

Les cabines à UV aussi dangereuses que l'arsenic

BERNE. L'OMS vient de classer les cabines de bronzage parmi les plus puissantes. La Suisse veut réglementer leur usage.

Les experts en cancérologie de l'Organisation mondiale de la santé (OMS) ont décidé de classer les cabines de bronzage et l'exposition aux rayons ultraviolets dans la catégorie des cancérogènes les plus dangereux.

La nouvelle classification signifie que les cabines de bronzage et l'exposition aux UV sont des causes certaines de cancer au même titre que le tabac, l'hépatite B ou encore le ramassage des cheminées. Leur risque mortel est aussi élevé que celui de l'arsenic, selon l'étude. Le risque de cancer de la peau augmente de 75% chez les gens utilisant les cabines de bronzage avant l'âge de 30 ans.



La Suisse pourrait interdire l'accès des cabines de bronzage aux mineurs de 18 ans. www.20minutes.ch

Participez à notre sondage Solarium

En Suisse, au parlement notamment, des voix s'élèvent depuis de nombreuses années afin d'interdire l'accès à ces installations aux jeunes de moins de 18 ans. Nos recommandations ont montré leurs limites, note

Marjana Moser de l'Office fédéral de la santé publique (OFSP). Les plus problématiques sont à l'évidence les cabines de bronzage en self-service. L'OFSP a reçu finalement le feu vert pour légiférer sur ces solariums.

Actuellement, ces installations ne sont soumises qu'à des normes de production relevant de la sécurité des produits, mais il n'y a pas de base légale pour leur utilisation, at/tp Une aussi en page 18

18 Lifestyle

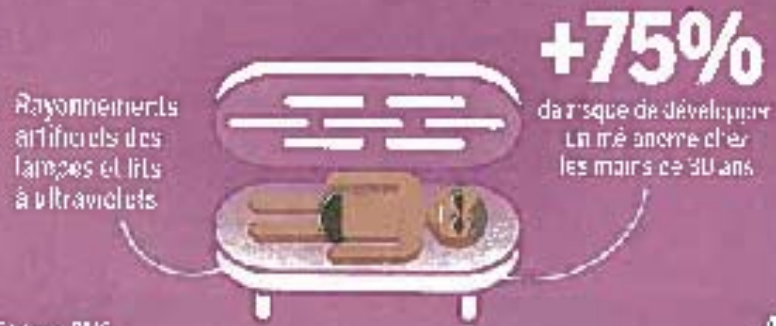
»compléter

LE DANGER DES UV ARTIFICIELS

Un groupe de 20 experts du Centre international d'analyse de recherche sur le cancer (agence de l'OMS) vient de publier une étude sur les risques cancérogènes des rayons ultraviolets artificiels. Ces derniers sont désormais classés



QUELS TYPES DE RAYONNEMENT POUR QUELS RISQUES ?



Source: CMS



World Health Organization

Topics of interest

- Mobile phones
- Base stations
- Children
- Exposure standards



Mobile phones



Eur J Epidemiol
DOI 10.1007/s10654-007-9152-z

ORIGINAL PAPER

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

Elisabeth Cardis · Lesley Richardson · Isabelle Deltour · Bruce A. Johnson · Christoffer Johansen · Monique Kilkenny · Patricia McKinney · Siegal Sadetzki · Joachim Schüz · Anthony Swerdlow · Martine Vermeulen · Gabriele Berg · Maria Blettner · Joseph Bowman · Julianne Brown · Angela Chetrit · Helle Collatz Christensen · Angus Cook · Sarah Hepworth · Graham Giles · Martine Hours · Ivano Iavarone · Avital Jarus-Hakak · Lars Klæboe · 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



World Health
Organization

HOME > TECHNOLOGY > MOBILE PHONES

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: 8:00AM BST 24 Oct 2009



Heavy users may face a higher risk of developing brain tumours later in life Photo: GETTY
 A £20million, decade-long investigation overseen by the World Health Organisation (WHO) will publish evidence that heavy users face a higher risk of developing brain tumours later in life, *The Daily Telegraph* can disclose.

The conclusion, while not definitive, will undermine assurances from the government that the devices are safe and is expected to put ministers under pressure to issue stronger guidance.

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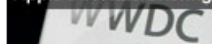
Text Size + -

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- The latest mobiles and accessories at Mobiles.co.uk
- Apple iPhone 3G on O2

Apple's WWDC briefing



Fact sheet N°193
 Revised June 2000

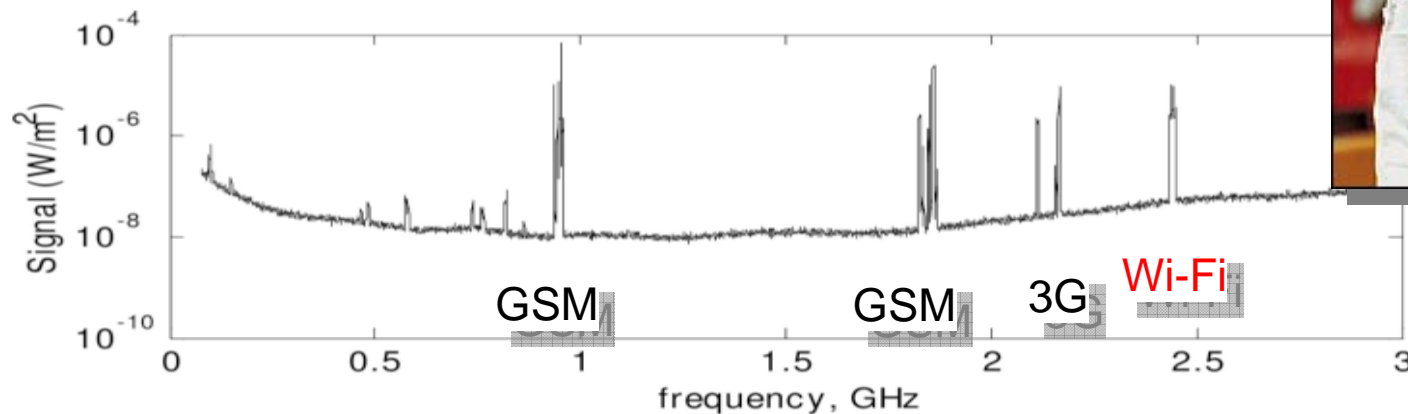
Electromagnetic fields and public health: mobile telephones and their base stations

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



Kenneth R. Foster, *Radiofrequency exposure from wireless LANs utilizing WI-FI technology*.
Health Phys. 92(3):280 –289; 2007



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Organization



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Organization**

Fact sheet N°304
May 2006

Electromagnetic fields and public health Base stations and wireless technologies

Conclusions:

“Considering the very low
results collected to date, t
scientific evidence that t
base stations and wirele
health effects”

Done

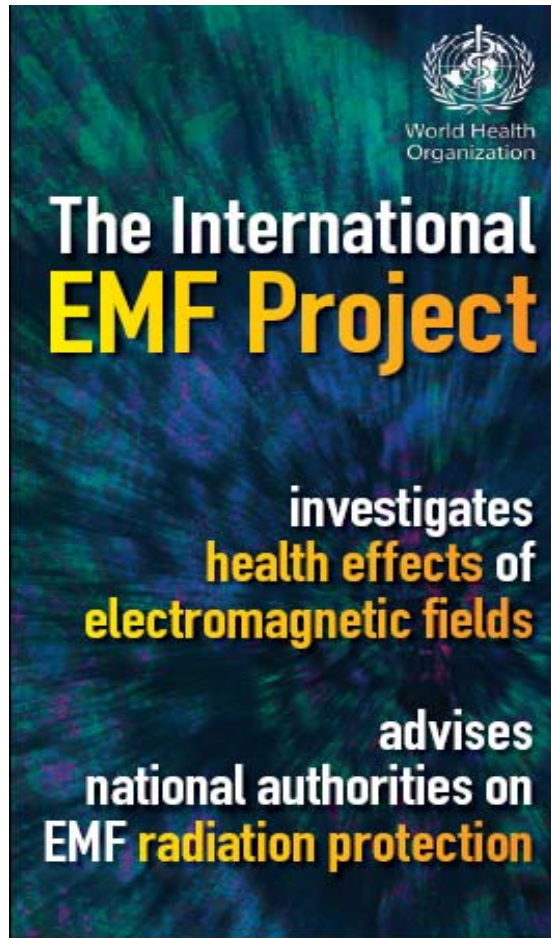
Commissioned systematic
review of health impact of
base stations

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 co-location 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...




The screenshot shows the 'Questions à la une' website interface. At the top, there is a navigation bar with the 'la une' logo and the text 'Questions à la une' and 'rtbf'. Below the navigation bar, there is a section for 'Les Emissions en Vidéo' with a sub-section for 'Les commentaires récents'. A video player is visible on the right side of the page, showing a scene from a broadcast. The video player has a timestamp of 'mercredi 20:15' and a play button icon.

Public education


Responsible authorities

RADIATION AND NUCLEAR OVERVIEWS



Radio waves and our environment

Säteilyturvakeskus
Strålskadorhögskolemyndigheten
Radiation and Nuclear Safety Authority



Domestic appliances do not cause any RF radiation that would exceed the limit values. You can however decrease unnecessary exposure with a few simple methods.

Food heated in a microwave oven does not radiate. A microwave oven is no health hazard even during the heating but it is not recommended to watch the food heating with one's face too close to the oven door.



TV and radio transmitters and the largest mobile phone base stations are installed on high masts. Therefore, the antennas are always quite far from people and can cause only minor radiation exposure.

It is sensible not to locate the baby monitor in direct contact with the baby. For example, placing the monitor at least 30 centimetres away from the baby decreases the exposure to only one hundredth of the exposure limit.



Radio and TV receivers do not send radio waves.



Exposure to mobile phone radiation decreases significantly when the connection to base station is good.

A laptop is best used so that the antenna of the WLAN card is not touching the body. Location of the internal antenna is easiest found out by asking the importer or reseller of the laptop.

Using a hands free decreases the radiation exposure. It is recommended to place the mobile phone on a table during a call.

A wireless modem (i.e. a WLAN base station) is easy to place at some distance from people. Already a distance of one metre is enough to reduce the field strength to only one thousandth of the limit value.



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

- 10
- 5

- HPA V

- E
- T

- Mobil

- M
- 8

- MoRP

- M
- P
- P

- CEFA

- C

WHO | Children's EMF Research Agenda - Microsoft Internet Explorer provided by WHO

http://www.who.int/peh-emf/research/children/en/

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WHO | Electromagnetic ... Internet Explorer cannot ... WHO | Children's EM...

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Programmes and projects	Introduction & general comments
EMF Home	The Working Group considered research recommendations for studies relevant to the risk of adverse health effects in children from exposure to electromagnetic fields (EMFs). The issues under consideration reflected and amplified the various suggestions and proposals made by the individual presenters at the preceding WHO Workshop on Childhood Sensitivity to EMFs held in Istanbul on 9 & 10 June 2004. The workshop proceedings are available in a special edition of <i>Bioelectromagnetics</i> (in press).
About electromagnetic fields	
EMF Project	
Research	
Standards	Particular issues included the role of extremely low frequency (ELF) magnetic fields in the development of childhood cancer and possible risks from mobile phone radiofrequency (RF) radiation, especially
EMF publications & information	

Agenda contents

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4. [Extremely Low Frequency Fields](#)
5. [Radio Frequency Fields](#)
6. [References](#)

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



**World Health
Organization**

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



The screenshot shows a news article on the healthzone.ca website. The article is titled "Dial back cellphone use, city officials tell parents" and is dated July 12, 2008. The author is listed as Tyler Hamilton and Robert Cribb. The article text states: "Toronto Public Health is asking parents to think twice before giving their children cellphones. In what is believed to be the first policy of its kind in Canada, the agency is advising children and teens to limit the time they spend on cellphones until more is known about potential health effects." A photograph of a young girl talking on a mobile phone is included, with a caption that reads: "Toronto Public Health says children and teenagers should limit cellphone calls to 5 or 10 minutes and use hands-free options when possible." The website header includes the healthzone.ca logo and navigation tabs for Home, Your Health, Diet & Fitness, Mind & Mood, News & Features, and Coupons & Deals. There are also utility icons for text size, email, print, and bookmark.



Guide for Local Authorities

Wireless Communications Networks

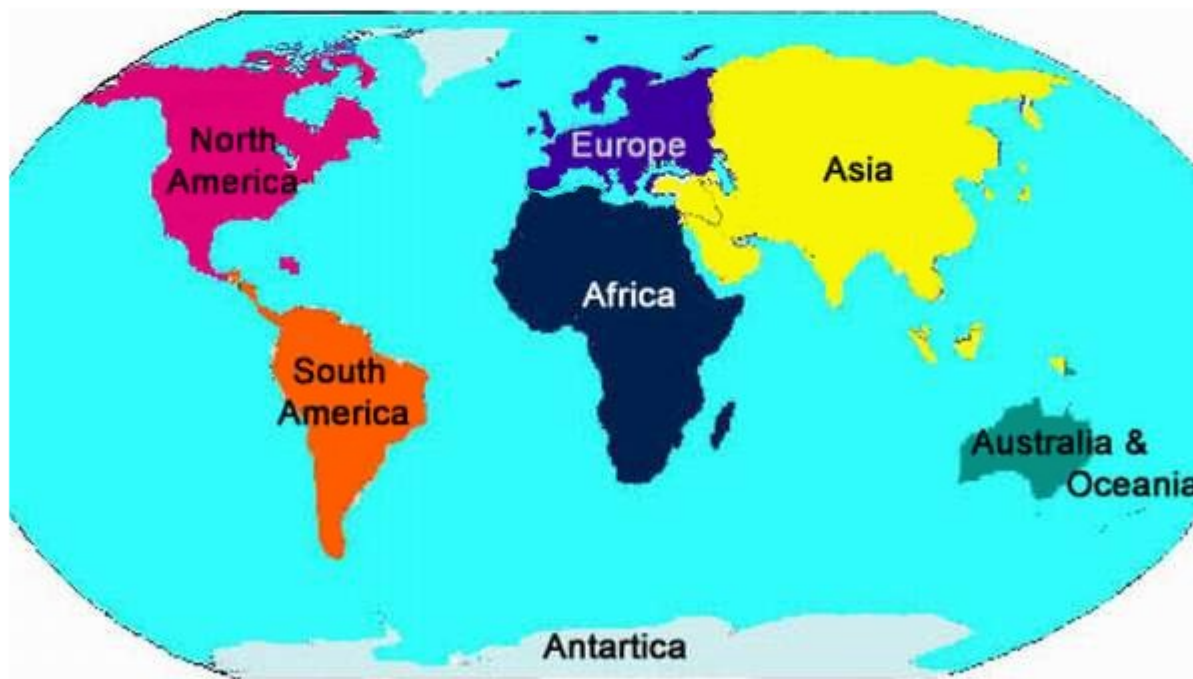
- To provide information and advice to local authorities when dealing with health related issues related to development of wireless networks
- Outline
 - EMF and wireless networks – overview
 - Health research
 - Risk perception and risk communication
 - Case studies
 - New technologies (e.g. WiMax)



International **EMF** Project



EMF WORLD WIDE STANDARDS



Global Database on Electromagnetic Field Standards an interactive tool for monitoring EMF health legislation

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](#)

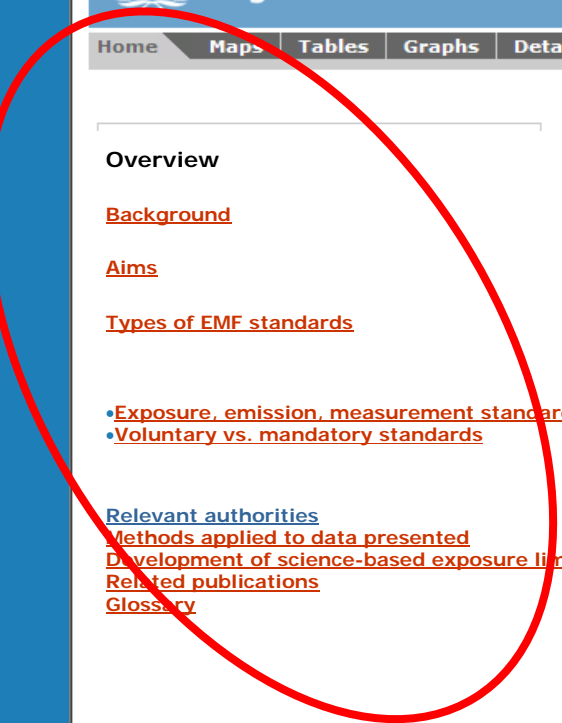
[Related publications](#)

[Glossary](#)

... of overweight and obesity - "globesity" - is rapidly becoming a major public health problem in many parts of the world. Distinct from undernutrition in developing countries, the increasing prevalence of overweight and obesity is associated with chronic diseases including diabetes mellitus, cardiovascular disease, stroke, hypertension and certain cancers.

The database provides both national and sub-national adult underweight, overweight and obesity prevalence rates by country, year of survey. Information is presented interactively as maps, tables, graphs and downloadable documents. These can be accessed by clicking the tabs above; then the data can be displayed after selecting the country, year and indicator required.

[Home](#) | [About WHO](#) | [Employment](#) | [Other UN Sites](#) | [Search](#) | [Site Map](#) | [Suggestions](#)
Copyright 2006 World Health Organization - Last update: 19/05/2009

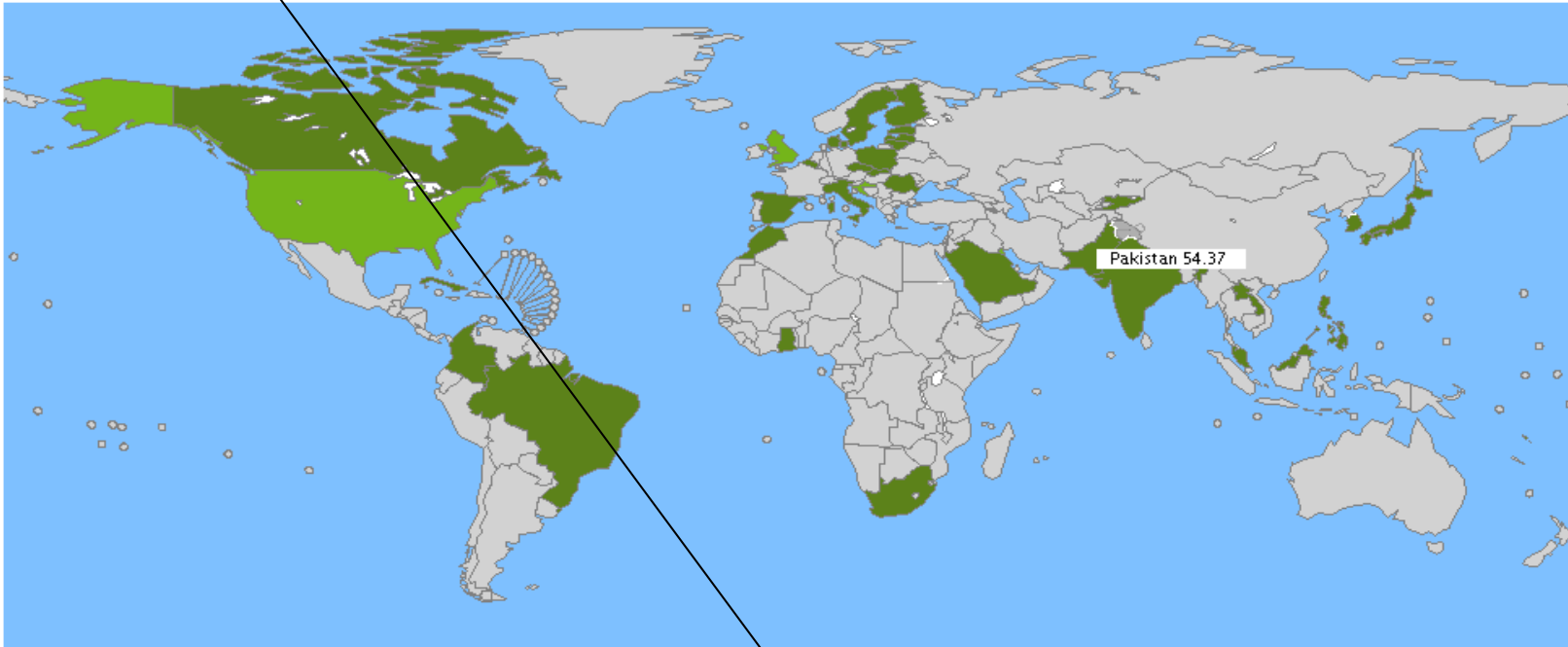


Indicator: BMI Normal Adults (%) Year: Most recent Show Comparison

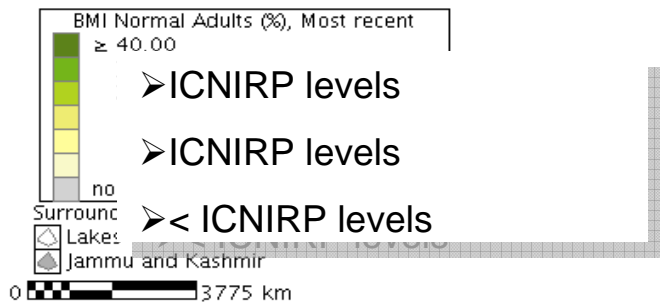
Country: Pakistan Full Map Scroll Map Legend

BMI Normal Adults (%), Most recent Notes

Caveat: The national BMI data displayed in this map are empirical and have been verified that they apply internationally recommended BMI cut-off points. However, it is important to note that the data presented are not directly comparable since they vary in terms of sampling procedures, age ranges and the year(s) of data collection.



- Static fields
- Low frequency (ELF) range
- Radiofrequency (RF) range
- Public limits
- Occupational limits



Map disclaimer

The boundaries and names shown and the designations used on this map do not imply the expression of any opinion of the World Health Organization concerning the delimitation of its frontiers or boundaries. Dotted lines on the map indicate unconfirmed or disputed boundaries.

The designations employed and the presentation of material on this site are intended solely to facilitate the understanding of the situation and do not imply the endorsement of the World Health Organization. The boundaries, geographic names and related data shown on maps and included in lists, tables, documents, and databases are for information only and do not constitute a commitment by the World Health Organization.

ber 2009

Standards worldwide

- Monitoring and advising on standard-setting
 - BRIC countries (Brazil, Russia, India and China)
 - East African Community (Tanzania and Rwanda)
 - Saudi Arabia
 - Albania
 - Oman
 - Bahrain
 -

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DIÁRIO OFICIAL DA UNIÃO

República Federativa do Brasil
Imprensa Nacional




Ano CXLVI Nº 84
Brasília - DF, quarta-feira, 6 de maio de 2009

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Atos do Poder Judiciário

SUPREMO TRIBUNAL FEDERAL
PLENÁRIO
DECISÕES

Ação Direta de Inconstitucionalidade e Ação Declaratória de Constitucionalidade

AG. REG. NA AÇÃO DIRETA DE INCONSTITUCIONALIDADE 4.071-8 (2)

PROCED.: DISTRITO FEDERAL
RELATOR.: MIN. MENEZES DIREITO
AGTE(S): PARTIDO DA SOCIAL DEMOCRACIA BRASILEIRA - PSDB

ADV(A/S): AFONSO ASSIS RIBEIRO e OUTRO (A/S)
AGDO(A/S): PRESIDENTE DA REPÚBLICA
ADV(A/S): ADVOGADO-GERAL DA UNIÃO
AGDO(A/S): CONGRESSO NACIONAL

Decisão: Preliminarmente, o Tribunal, por maioria e nos termos do voto do Relator, rejeitou a admissão do *amicus curiae*, vencidos a Senhora Ministra Cármen Lúcia e os Senhores Ministros Carlos Brito, Celso de Mello e o Presidente. E, no mérito, por maioria, desproveu o recurso de agravo, vencidos os Senhores Ministros Marco Aurélio, Carlos Brito e Eros Grau. Voto do Presidente, Ministro Gilmar Mendes. Ausente, justificadamente, a Senhora Ministra Ellen Gracie. Plenário, 22.04.2009.

FIM DE DECISÃO NA AÇÃO DIRETA DE INCONSTITUCIONALIDADE 2.791-3 (3)

PROCED.: PARANÁ
RELATOR.: MIN. GILMAR MENDES
ORIGINÁRIO

PARANÁ
ACÓRDÃO
RELATOR.: MIN. MENEZES DIREITO
EMBTE(S): GOVERNADOR DO ESTADO DO PARANÁ
ADV(A/S): PGE-PR - CESAR AUGUSTO BINDER
EMBDO(A/S): ASSEMBLEIA LEGISLATIVA DO ESTADO DO PARANÁ

Decisão: O Tribunal, por unanimidade, conheceu dos embargos. Em seguida, após o voto do relator, dando provimento aos embargos, no que foi acompanhado pelos Senhores Ministros Carlos Brito, Cezar Peluso e Ellen Gracie (Presidente), e dos votos dos Senhores Ministros Menezes Direito, Cármen Lúcia, Ricardo Lewandowski e Marco Aurélio, que os rejeitavam, o julgamento foi suspenso para colher os votos dos Senhores Ministros Joaquim Barbosa, Brandão Carrão e Celso de Mello. Eros Grau, ausente, justificadamente.

Atos do Poder Legislativo

LEI Nº 11.934, DE 5 DE MAIO DE 2009

Dispõe sobre limites à exposição humana a campos elétricos, magnéticos e eletromagnéticos; altera a Lei nº 4.771, de 15 de setembro de 1965; e dá outras providências.

O PRESIDENTE DA REPÚBLICA
Faço saber que o Congresso Nacional decreta e eu sanciono a seguinte Lei:

Art. 1º Esta Lei estabelece limites à exposição humana a campos elétricos, magnéticos e eletromagnéticos, associados ao funcionamento de estações transmissoras de radiocomunicação, de terminais de usuário e de sistemas de energia elétrica nas faixas de frequências até 300 GHz (trezentos gigahertz), visando a garantir a proteção da saúde e do meio ambiente.

Parágrafo único. Estão sujeitos às obrigações estabelecidas por esta Lei os prestadores de serviço que se utilizarem de estações transmissoras de radiocomunicação, os fornecedores de terminais de usuário comercializados no País e as concessionárias, permissionárias e autorizadas de serviços de energia elétrica.

Art. 2º Os limites estabelecidos nesta Lei referem-se à exposição:

I - da população em geral aos campos elétricos, magnéticos e eletromagnéticos; e

II - de trabalhadores aos campos elétricos, magnéticos e eletromagnéticos em razão de seu trabalho.

Art. 3º Para os fins desta Lei, são adotadas as seguintes definições:

I - área crítica: área localizada até 50 (cinquenta) metros de hospitais, clínicas, escolas, creches e asilos;

II - campos elétricos e magnéticos: campos de energia independentes um do outro, gerados por voltagens ou diferenças de





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Public Health and Environment
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Switzerland

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