

**Notes on the International Conference
Mobile Communications and Health: Medical, Biological and Social Problems
Sept 20 – 22, 2004, Moscow, Russia**

October 10, 2004 (Updated December 10, 2004)

Don Maisch

Section I: WHO gets the final say?_____	1-2
Section II: The Conference Notes_____	3-16
Section III: Recommendations: An oversight committee is needed_____	17
Section IV: The final conference “Statement”_____	18-19

Section I: WHO gets the final say?

In late September I attended the International Conference: Mobile Communications and Health: Medical, Biological and Social Problems, Sept 20 – 22, 2004, Moscow, Russia.
http://www.pole.com.ru/conference/conference_eng.htm

After that meeting I compiled my notes into an informal report on the proceedings, dated October 10, 2004. This report has since been updated to include my concerns over what has been reported in the final conference statement, received on Dec.10 from a member of the Russian scientific community.

On September 22, the final day of the conference, Yuri Grigoriev, the Russian conference chairman as well as chairman of the RNCNIRP, stated the firm view that the conference committee organizers would draft a final conference statement that specifically addressed the Russian concerns on potential hazards to children from their mobile phone use. This concern was expressed at the conference by representatives from three out of the four conference organizers. These were:

- 1) The Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP).
- 2) The Russian Academy of Science.
- 3) The Russian Academy of Medical Science.

(Note: The fourth organizer, who did not share the other's concerns was the World Health Organisation (WHO), represented by Dr. Michael Repacholi)

Yuri Grigoriev, was very insistent on the importance of getting out at the conclusion of the conference a statement on children and mobile phone use. On October 2nd I sent an e-mail to Eugenia Bichelday, the conference secretary, asking if a statement had been made “specifically about the issue of children and mobile phone use”. On October 22nd she replied stating that “Yes, the statement was agreed and accepted” but that it was in Russian only. I replied with a request for the Russian version but by then she had left for other employment without managing to sending it on.

On December 10th when I received the final statement on the conference (page 18-19) it immediately was apparent from my reading of the statement that it departed substantially from what actually transpired at the conference. It DOES NOT represent the vast difference of scientific viewpoint between "East " and "West" in regards to RF standard setting that was clearly expressed at the conference. This can be seen by comparing Section II and IV. Instead

we read in the ‘final statement’ some feel-good statements about justifying actions towards harmonization¹. As the WHO was one of the conference organizers it may be surmised that they had a hand in the editing of the final version that is also posted on the WHO website.

The overall structure and wording of the final conference statement (page18-19) is very similar to PR statements previously produced by the WHO / ICNIRP and in my opinion mainly represents the viewpoints expressed by these organisations, not what was also stated by speakers from RNCNIRP, RAS and the RAMS.

We have some cheery statements about precautionary actions that fail to include the words of ICNIRP’s Paulo Vecchia at the conference when he said that “Precautionary actions... constitutes a health detriment and should be prevented as other adverse effects of EMF” (page 15). SO much for precautionary actions!

Even though much of the conference was about Russian concerns over children’s use of mobile phones, absolutely nothing is mentioned about this in the final statement. Yuri Grigoriev’s hope for a strong statement on the children's issue with mobile phone use was entirely left out.

Contrary to what the statement claims, the Russian scientists at the conference did not agree that the so called ICNIRP "international guidelines" ensure adequate protection against all established health effects – in fact their view was just the opposite - that ICNIRP did not provide adequate health protection. This also got edited out.

The final statement boldly says: "Independent and scientifically qualified institutions should be identified and made legally responsible for providing unbiased information". This may sound good but if the omissions and un-truths in the “final statement” are examples of "unbiased information" then who can we really trust to give legally "unbiased" information? AND then what happens to all alternative scientific viewpoints deemed not to be “unbiased information”? Are they therefore illegal? Then what? - Shades of Orwell’s Oceania and the thought police!

All viewpoints presented at the conference that departed from the WHO / ICNIRP paradigm have been ‘sanitized’ out of the final statement but I suppose that the Russians and their WHO/ICNIRP counterparts had to spent long hours hammering out a compromise statement. A pity that the Russians didn’t use a bigger hammer (and perhaps a sharp sickle) but perhaps this sanitation is just an example of what happens with harmonization.

Such distortion is not science but spin doctoring at its worst. If anything, the final conference statement is more akin to Orwell's "Newspeak"² than anything you could remotely call science. This is a trend that unfortunately seems to have become ‘science’ in Western RF standard setting.

¹ Harmonization basically means that all nations should accept ICNIRP’s “international” guidelines as the final say in RF exposure standards. Dare we call it a one way street?

² In George Orwell’s novel 1984, the purpose of Newspeak was not only to provide a medium of expression for the world-view and mental habits proper to the devotees of IngSoc, but to make all other modes of thought impossible. It was intended that when Newspeak had been adopted once and for all and Oldspeak forgotten, a heretical thought -- that is, a thought diverging from the principles of IngSoc-- should be literally unthinkable, at least so far as thought is dependent on words. Its vocabulary was so constructed as to give exact and often very subtle expression to every meaning that a Party member could properly wish to express, while excluding all other meaning and also the possibility of arriving at them by indirect methods. This was done partly by the invention of new words, but chiefly by eliminating undesirable words and stripping such words as remained of unorthodox meanings, and so far as possible of all secondary meaning whatever. Taken from: <http://www.newspeakdictionary.com/ns-prin.html>

Section II: The Conference Notes

Note: The following was prepared from conference notes, discussions, and the conference book of abstracts. In some cases I have summarised the presentations for clarity, in others I have tried to make as little changes as possible. Exact quotes are in quotation brackets. Photocopies of the book of abstracts (English section only) and my handwritten notes are available upon request.

This being my first conference in Russia I cannot comment in detail on the earlier three conferences in the series of meetings except for what has been reported on the conferences. What is apparent from people who have attended the previous meetings is an ongoing conflict between the differing rationale between the Russian (and Chinese) radiofrequency/microwave (RF/MW) exposure limits and those of the International Commission on Non-Ionizing Radiation Protection (ICNIRP).

ICNIRP has long sought “harmonization” with the Russian RF standards but the Russians have maintained that ICNIRP’s thermal effects only approach is not protective of workers and the public. Their preferred approach is to also take into account possible long term-low level (non-thermal) adverse biological effects (including immunological) from RF exposure – something ICNIRP steadfastly refuses to acknowledge. As such, Russia’s RF standard is far stricter than those of most Western countries and is set at levels that are less than levels emitted by most cell phones.

The very existence of the Russian and Chinese RF standards brings into question the scientific validity of ICNIRP’s guidelines and the ongoing series of meetings has been, and is, an attempt to resolve the differences.

This latest Russian conference centred around a possible way to resolve the barriers to harmonization. – a joint Russian / French study to try to verify the basis for the Russian RF standard (Section 3).

At this latest conference the Russian and ICNIRP opposing viewpoints quickly came to the forefront of discussion, with the following main players:

Russia: Represented by roughly 2/3 of the conference attendees. Spokespersons included: Yuri Grigoriev, Chairman of the Russian National Committee on Non-Ionizing Radiation Protection (RNCNIRP); Dr. O.A. Grigoriev, Deputy Chairman RNCNIRP; Dr. N.B. Rubtsova, Russian Academy of Medical Science, RNCNIRP; Dr. N. Izeerov, Russian Academy of Medical Science and Institute of Occupational Health; Dr. E. Bichelday, RNCNIRP; DR. G. Onischenco, Federal Service for Consumer’s Rights and Social Welfare, Russian Academy of Medical Science, Johnson Liakouris Ana PhD (USA), etc. (See book of abstracts for full listing)

Though numerically the larger side, the Russian viewpoint was hampered by the inevitable language barrier. The majority of their presentations and Powerpoint displays were in Russian with a live headphone translation service available. Unfortunately many of the finer points of their presentations were difficult to follow in the translation process even though the translator did an excellent job under the circumstances. Of course, from the Russian’s viewpoint they could say much the same about the English only speakers! However it being an International conference to help bring the Russian scientific expertise to the “West” the language gap was an unfortunate barrier to fuller understanding, especially for technical texts. To their credit the Russians are going to publish their research in English soon in the future.

ICNIRP/WHO: Represented by Dr. Michael Repacholi, WHO's EMF Project., Paulo Vecchia, ICNIRP, Dr Bernard Veyret, ICNIRP, Professor Lawrence Challis, AGNIR/NRPB, and Mays Swicord, Motorola.

Although a smaller number, the ICNIRP/WHO team were well organized and supported each other with a well practiced precision. They expressed an unwavering conviction that ICNIRP was the best science had to offer – while at the same time being careful not to offend their Russian hosts.

IIa) Some of the translated Russian viewpoints:

FIRST DAY

“With the rapid roll out of telecommunications technology [globally] officials not prepared and unaware – unawareness deeper than awareness in respect to health”. *Dr. G. Onischenko*

“Important to separate myth & reality in regards to preventing harmful effects – progress must be used for our benefit – and harmful effects are not to our benefit” *Dr. S. Pugacher*

Urgent need to address the EMF health issue, especially great attention must be made to overall effects on the population and children. The effects on children are of concern to the Ministry of Health.

Dr. N. Izmerov

“Assessment on possible risks of EMF from cellphones on health and communication to the public must guarantee complete safety of cellphones. It is a new situation for safety with high profits and mass advertising with no consideration of our advice [RNCNIRP] on children and cell phone use. Medical and sanitary situation for cell phones sees a sizable gap between adults and children who voluntarily subject themselves (brain-neural track-vestibular apparatus) to damage. Possibility of damage to the inner ear a concern because of its complexity.” *Dr. Yuri Grigoriev*

“For the first time in the history of humans we have a mass EMF effect on the human brain [from cellphones] which cannot be compared to other sources, such as ionizing radiation”. *Dr. Yuri Grigoriev*

“Children are more sensitive to EMF than adults”. *Dr. Yuri Grigoriev*

Serious disagreement with WHO and ICNIRP on determining health effects of EMF pathology on daily, long-term use of cell phones (chronic low intensity) leading to somatic diseases, somatic response changes on exposure. *Dr. Yuri Grigoriev*

Cellphones – modulated fields - effects grows – the lower the intensity the higher the role of modulation. This is not being considered internationally in standards. Considering modulation effects the thermal effects only school is doubtful. *Dr. Yuri Grigoriev*

“The thermal effects for criteria or standards is not a suitable approach” *Dr. Yuri Grigoriev*

“Important to limit time talking and proximity to antenna. . . Limit strictly the use of mobile phones by children and limit advertising - Educate the population”. *Dr. Yuri Grigoriev*

[From presentation titled: **Progress of Mobile Phone EMF Effects on Human Nervous System**] *Nikitina V.* , pages 111-112.

CNS sensitive to EMF resulting in clinical effects: headache, sleep disorder, heartache, irritability, dizziness, memory disturbances, sweating, epigastric pains, disorders in menstrual cycles, memory retention, increased level of lipids, gynaecological diseases, vegetative dysfunction. EMF considered as a “regulation disease”.

From: [**Approaches to studies of mobile communication equipment effects on users' health**] *Budyanskaya E., Rezinkina M., Nikolenko E.*, pages 84-86.

: This study looked at long term VDU computer operators 1hr. per day/40 hrs week/60/80/160 calculations on different types and levels of EMF exposure. Long term effects: stress observed on main life support systems, CNS, cardiovascular and immune system. First years of VDU work: Reduction of the adaptive capacities, reduction of anti-oxidant systems – free radical oxidation, suppression of immune reactivity. Calls for research into effects on brain activity with cell phones.

From: [**The Radiowave Sickness Syndrome: The Question of Medical Entity vs. Non-existent Illness**] *Liakouris A* , pages 103-104.

“The recognition of the RF sickness syndrome as a medical entity is relevant to concerns about environmental EMF safety. The syndrome was first identified in the USSR as an occupational illness and named the Neurotic Syndrome. It was defined as a pathological condition resulting from chronic exposure to radiofrequency (RF) radiation, consisting of signs, symptoms and clinical manifestations mostly of neurological and endocrine origin. Substantive, modern research on the biological effects of RF radiation in the Russian Federation has not changed the scientist’s views on RF Sickness as a medical entity.

In the USA, there is a limited, but potentially important level of recognition. The US Congress adopted the “Radiation Control for Health and Safety Act of 1968’, PUBLIC LAW 90-602. This law was later transferred to Chapter 9 of the Federal Food, Drug and Cosmetic Act of 1994. Furthermore, the New York Appellate Court, relying in part on the studies performed for the United States government, by Dr. Milton Zaret, recognizes an occupational disease identified as “microwave radiation sickness”. Nevertheless, researchers disregard RF Sickness on the basis of three main objections. First, there is no specific clinical picture attributable to the syndrome. Second, epidemiological studies do not show a statistically significant correlation between exposure to specific RF and the manifestation of the syndrome. Third, when a statistically significant correlation is attained, it is explained by an “awareness bias”. This author has addressed the issue of epidemiological studies in a previously published work.

The objection addressed in this paper is the first one. The data comes from a small sample of clinical reports by physicians, available in the English literature. The patient’s exposure to RF radiation was confirmed. The clinical reports include short-term acute and long-term occupational exposures as well as non-lethal and lethal exposures. The period covered is 34 years, starting in 1957.

The methodology is adapted from interdisciplinary case studies. The literature on other medical syndromes also lacking a specific clinical picture is taken into account. Then, the

clinical reports are cross-referenced for regularities or the lack of it. If regularities are found, a rationale is presented for testing these in the laboratory, using modern tools and methods.

The broader context for analysis indicates that the lack of a conventional clinical picture is also characteristic of syndromes involving immune system responses. The analysis of the data indicates that one symptom is consistently reported in all cases of non-lethal exposures. . . The clinical reports answer Western objections.

From: [**Psychophysiological Analysis of EMF Effects From Cellular Communications Equipment on CNS Function**] *Polyakova S.P.* pages 112-113

Study using 20 healthy professional users of mobile phones.

10 men, average age of 38, 10 women, average age of group 34. Average of 4 years use, approximately 20 minutes daily. Tested an assessment of mental functions – memory, intellection, attention, definition of biological age, etc. – significant changes in brain EEG activity – dropped intellection, attention. long term use of mobile phone gives trend in build up of biological age. “It is possible to assume, that the long-term using a mobile communication can give in a trend to a build-up of biological age with increase the period of using mobile devices of cellular communication”. . . It is low grade hypoergia, a low-grade parasympathotonia, a strain of immunodefence, restricted type of an organism regulation, break-down of adaptation with a parameter 4,3, incomplete adaptation, stress – reaction and reaction of an activation.

Note: Yuri Grigoriev mentions from the chair that “The mobile phone studies are lagging behind the roll-out of the technology and designers and technocrats are defining the meaning of a ‘safe’ mobile phone”.

Round Table Discussion “Mobile phones and children”

Yuri Grigoriev started off deriding the cell phone industry for “placing quick money and profits as paramount, using mass advertising techniques”. Yuri stated that “we cannot ignore the potential of damage to children’s health because of quick profit”. He expressed his (and RNCNIRP) concern over the possibility of “long term loss”- meaning for children. Yuri said’ “Corporations talk about absence of health effects, these scientists are conduits of the corporate line”.

Yuri sees the WHO as being “insufficient on the precautionary principle” and went on to mention much of the information why children are a special case for precaution, as detailed in < http://www.emfacts.com/papers/children_mobiles.pdf >This paper was compiled by this author in 2003 with the help of Vladimir Bindi and sent to Yuri Grigoriev.

Yuri then accused Michael Repacholi of avoiding the issue of children and mobile phones. He went on to list studies and the microwave sickness symptoms, which he said depend on duration and number of calls. “Children are at high risk – cut down sharply their use”.

Later that day Yuri makes the point that children are more sensitive than adults to RF exposures and it should be possible to protect children by making recommendations limiting their duration of calls and making calls only when necessary. He wanted to see a joint statement on children and mobile phone use by the conference committee at the end of the

conference but as of this writing it is unknown if such a statement was given. It would be unlikely given the involvement of ICNIRP.

SECOND DAY

Speakers Yuri Grigoriev , O. Gregoriev, Dr. G. Onischenco

Yuri starts by comparing the cell phone industry with the tobacco industry, where the industry disguised the hazards of tobacco and hid the cancer connection.

The Ministry of Health and Social Development aims to devise practical objectives to eliminate hazards and provide society with reliable, scientifically sound information on health issues. Develop information for the public with basic documents and develop educational program. Develop standards for safety / technical regulations for participation of developers [industry] in safety for the public. Russian research sees direct effects on the immune system. Need for studies on chronic exposure of mobiles.

Yuri: “For the first time in history children are at risk from EMF technological development”

From: [**News in Russian Hygienic Standardization of Mobile Communications**] Rubtsova N., Pal'tsev, pages 114-115.

In 1994 Russia developed its “temporary permissible levels (PL) for mobile phone communications in the frequency range 400 to 1200 Mhz. , including a system of EMF evaluation for power density measurements of near zone of cellular phone antenna radiation. This document can no longer be considered correct as it does not reflect the real picture of electromagnetic energy radiation.

The Russian Federation therefore carried out development of new hygienic norms (standards) which included complex researches on mobile communication permissible level substantiation including: experimental studying of intensity and time dependencies of modulated EMF biological effects; computer modelling of mobile phone EMF interaction with bioobjects (rat) character; development of an adequate technique of mobile phone EMF measurement; physiological evaluation of cardiovascular and nervous systems parameters in volunteers before and after using a mobile phone. Experiments used 450, 900 and 1800 MHz with 0.5 and 2.0 mW/cm² (rats, 1 hour per day – 40 sessions exposure, and 2-weeks after exposure) to body weight changes, CNS (on parameters of free behaviour and morphology of a brain), cytogenetic parameters, eye lens crystalline epithelium (cataracts) and specific and non-specific effects on immunity.

Results have allowed us to establish a threshold of unfavourable effect under EMF exposure, equal to 0.5 mW/cm² power density. With application of hygienic safety factor of 5 this gives 0.1 mW/cm² PD accepted as mobile phone EMF temporary permissible level. (for mobile phone base stations) This value is recognized in new sanitary norms and regulation 2.1.8/2.2.41190-03 “Hygienic requirements to siting and maintenance mobile radio communication means”, commissioned on 01/06/2003.

For an estimation of mobile phone EMF levels (handset exposures) as the most adequate is accepted a method of their measurement on the distances appropriate to far field zone with return recalibration in sizes in a near zone. For maintenance of this principle of EMF level control at sanitary and epidemiologic examination of cellular phones the calculations

establishing (installing) distances from the device on which *EMF controllable levels* providing established Permissible Levels in far field zone should not be exceeded were carried out. The distances, appropriate to far field zone were determined, allowing EMF levels adequately estimate in >300-2400 Mhz frequency range with return recalibration in values in a near zone. Power density controllable level to 100uW/cm² Permissible Level, on these distances has made 3.0 uW/cm².

Use of this principle of EMF levels estimation created by mobile phone near to user's head shows, that the overwhelming majority of cellular phones delivered on the Russian market and made in conformity with requirements of standard ENV 50166-2, do not satisfy our country's hygienic requirements that causes complexities with their sanitary-and epidemiologic examination on parameters of safety.

The unique way of the decision of this question represents the further realization of modulated in accordance with cellular communication standards EMF biological effects dependence researches. with the purpose of an opportunity of a principle of protection by time definition of realization for case of enough a powerful modulated EMF source exposure near to a head of the person (structures of the brain, eye).

The special attention is deserved with questions of categories of persons of the increased risk safety: children, ill, pregnant women. It also has found reflection in new sanitary norms and regulations 2.1.8/2.2.4.1190-03. For these contingents the following actions are recommended the greatest possible reduction of mobile phone using time; restriction of an opportunity of mobile phone use by the persons younger than 18 years, women during pregnancy, people having different types of pacemakers.

From: [**Threshold of hazardous effects of EMF**], Research Institute of Hygiene.
Use criteria to minimise EMF at levels that effect human disability. Russian standards recognize "compensatory responses",

Standard limit-----→ Compensatory response-----→ Health effect.

Strongly advise against raising the limits to above the compensatory response levels.

From: [**Russian Information project for population "Mobile communications and Health**]
Dr. Eugenia Bichelday

Mobile communications electromagnetic safety a priority. 40 million subscribers in Russia. Lack of data available – risk of unfavourable effects – and lack of assurance of either risk or safety. Economic and social benefits increases risks. The primary exposure overall is at the head. "A precautionary policy may be insufficient without fully rejecting the technology". Precautionary approach must include community awareness – society should know the implications as an involved partner. When communication fails between stake holders and communities distrust arises over all technologies.

Aims (RNCNIRP):

- * Awareness and joint involvement.
- * Education necessary for all users and those involved.

Developing an education program (involving)

*Adequate societal perception of risk

* Conflict resolution

*Internet resources

*Books

*An information centre that will have the results of scientific studies made freely available, various scientific measures [to reduce exposures], and organisations such as RNCNIRP, IEEE, WHO , ICNIRP, etc.

“There is a constitutional right of Russian population for factual information to protect health from cellular technology”.

Yuri Grigoriev: Mentioned that the Moscow city RF standard for Cell sites is 3 uW/cm². He listed three Russian web sites for information:

<http://www.tesla.ru/> (English version: <http://www.tesla.ru/english/index.html>)

<http://www.pole.com.ru/> (Russian only)

<http://www.ecopole.ru> (Russian only)

From: [**The Forecast of Ecological-Economic Development of Networks of Mobile Communication at Introduction of the Tax for Influence of Electromagnetic Radiation** , Somov A *et al* , pp118-119

In this rather contentious presentation Somov proposes a possible way to solve the problem of cellular technology emissions being in excess of the Russian standard. For all transmitting facilities, even if not exceeding the allowable limits, authorities would charge an ‘ecological tax’ for using a “national resource” (the electromagnetic spectrum). If it was then found that any facility was exceeding the allowable limits, charge them an excess fee for the breach of the limits! (Perhaps 5 times the base rate). It was claimed that this would encourage the operators to increase the amount of base stations therefore reducing each facility’s emission levels.

This presentation provoked a heated argument amongst the Russians because, as one speaker interjected, it was allowing economic considerations to take precedence over health. Two other comments were:

“ We see a very nasty presentation that has been made” and, “Its like legalising law breakers”.

Grigoriev’s concluding remarks at the conference

* “Agreement amongst colleagues that the standards must be grounded properly and we will do all we can in that direction.”

* Grigoriev said that “for children and mobile phones the picture is perfectly clear” – he then suggested drafting a memorandum concerning children’s use of mobile phones that called for restrictions on children’s use of mobile phones.

Iib) WHO and ICNIRP representative's viewpoints

WHO update on the EMF Project, Health Effects of Radiofrequency Fields from Mobile Telecommunications and Recommendations to National Authorities, Michael Repacholi, Pages 66- 69.

The EMF Project evaluates health impacts from 0 to 300 GHz. It includes:

- * Creates and disseminates info on health impacts from EMF exposure,
 - * Includes standards harmonization on national standards to that of ICNIRP,
 - * Conducts scientific reviews,
 - * Studies risk perception - A handbook on risk soon available on web site,
 - * Psychosocial impacts of EMF exposure (Graz 1998),
 - * Child sensitivity to EMF (Prague 2004),
- Mobile phone base station impacts (Geneva),
- * TNO study.

Harmonization

“One of the major initiatives of the EMF Project is to provide a framework for standards that should lead to their harmonization world wide. Many countries are considering new EMF standards and globalization of trade and the rapid introduction of mobile telecommunications worldwide have focused attention on the large differences existing in national standards. Differences in the EMF limit values between standards in some Eastern European and Western countries are, in some cases, over 100 times. This has led to increased public anxiety about EMF exposures from new technologies. The objective of this activity is to work towards, and hopefully achieve, international agreement on a framework for developing guidelines on protection of the public and workers from exposure to EMF. The framework is now complete and being edited prior to posting on the EMF Project web site.”

Repacholi mentioned that approx 12 Russian studies on RF exposure that reported effects on the CNS, immunological effects serve as a main basis for the Russian RF standard (and the Chinese one as well). He stated that there is the need to evaluate these studies in light of modern methods. He said that there was a necessity of doing good research – design and quality criteria- peer reviewed and published. If studies pass this criteria then they are of the quality to be incorporated into a health risk assessment. . .

“WHO promotes research that is useful”

“Single studies cannot set policy” Mentions his Adelaide study as a (+) study but then the Utteridge one as a (-) one. Suggesting that one cancels out the other?

Repacholi mentioned the INTERPHONE study of 13 countries studying head and neck cancers.

Note: A major lack of the INTERPHONE study is that the criteria for inclusion starts at 30 years of age, so it has absolutely no relevance to the issue of children and mobile phone use

WHO criteria for study evaluation

- * In depth – weight of evidence is crucial
- * Review – world wide review of research by WHO
- * Detailed description of methods used
- * Replication
- * Assess both + and _ studies for quality.

Repacholi on base station emissions

- * Under 1 uW/cm² – usually lower than radio and TV emissions
- * Difficult to distinguish individual sources of emissions
- * Pregnant women not at risk because microwaves do not penetrate deeply.
- * Children – more research needed on cell phone use.

ICNIRP is a useful partner with WHO – ICNIRP exposure standards (guidelines) based on known health effects (including IEEE) . Emission standards based on the need of the device (such as microwave ovens @ 5 cm = 5 mW/cm²).

Limits set should not be lower than the exposure standards. There should be international agreement on emissions (harmonization).

“WHO recommends ICNIRP, which uses WHO methods.”

The EMF project is developing a Precautionary Framework (Page 67). A case study for ELF fields has been done and one is being developed for RF fields – case studies in other areas of scientific uncertainty will also be drafted.

When dealing with the public – minimise risk but there can never be zero risk.

Risk publications available on WHO web site.

Mentioned EMF effects on children – Stewart report and then the Health Council of the Netherlands – COST – dosimetry on absorption - Istanbul workshop.

“ RF exposure from base stations involves aesthetics and public sensibilities – need for “open communication” and “effective communication”.

“WHO is developing model legislation for base stations. . .”

Repacholi / WHO on RF health effects:

“ Hazards of exposure to high levels of RF fields, which result in tissue heating, are basically understood and form the basis for current international standards (ICNIRP, 1998). Thermal hazards are associated with acute exposures and are thought to be characterised by threshold exposures, below which no health effects occur. There is no confirmed evidence that exposure to RF fields has any long-term health consequences.”

Overview of mobile telephony and Health, Dr Bernard Veyret

Most people’s concerns are about base stations not the phones themselves – half the energy from a phone is absorbed by the head,

ICNIRP SARS = 2 W/kg/10 Gram averaged / 0.08 W/kg for whole body.

Typical base station is 1/10,000 the ICNIRP limit. Cell phones 1/10 the limit.

Veyret mentioned the various phone studies, such as Perform, A&B, Reflex, Cemfec, Ramps, Guard, EMF-NET, Interphone.

- * Veyret supports heating effects only but other effects investigated.
- * Exposure systems are now adequate.
- * Western research shows no overall evidence of genotoxicity from RF exposure.
- * All observed effects are due to thermal increases.
- * SAR effects only seen above 4 W/kg.
- * With human studies there are no conclusive evidence of effects.
- * Supports WHO / ICNIRP.
- * No impact on health below ICNIRP guidelines.

“ The weight of scientific evidence does not support health concerns or indicate any health risks from mobile phones in normal use”.

However there is yet “no answer to the children’s issue on phones”.

Studies in the RF Data Base Relevant to the Use of Mobile Phones by Children. Swicord M, Elder J, page 88 –89

After the authors list a number of animal studies that it was claimed found no evidence of ill health effects they conclude that “The RF literature does not provide support for the developing animal, as a surrogate for the developing human, being more sensitive than adults to RF exposure. This conclusion is in agreement with the 2004 report from the health Council of the Netherlands stating that there is “...no reason for recommending limiting the use of mobile phones by children” and advice from the O.S. Food and Drug Administration (FDA) stating that “The scientific evidence does not show a danger to users of wireless phones, including children and teenagers”.

AND:

A Review of the Western In Vivo and Epidemiological Literature Related To Immunological Effects of Radiofrequency Exposure, Swicord M, Morrissey J, Elder J, Chou C, Page 120

Extensive evaluation of the published radiofrequency biological effects literature is necessary to determine the health risk and levels of safe exposure. Standard setting organizations must begin such a health risk assessment by considering all possible adverse health outcomes before providing guidance to the public. This paper considers only one endpoint, immunological effects, due to health questions raised in Russia. This report concentrates on the 70 or more in vivo and epidemiological studies in the Western literature addressing immune effects. In vitro studies are not reviewed because adverse health outcomes cannot be established through in vitro studies although in vitro studies can serve to generate hypotheses for further analysis.

A number of the studies report no change in immune response to RF exposure or report effects only at thermal levels. A few studies in the Western literature, however, do report changes at exposure levels that would not cause temperature elevation; however, the results of the studies reporting effects at low-level exposures are generally inconsistent with each other as well as with the larger body of evidence reporting no effects at similar RF exposure levels.”

Health Implications of TETRA, Challis L pages 86-88.

“... The view of the UK’s Advisory Group on Non-Ionizing radiation (AGNIR) that was published in 2003 is broadly in line with the views of many other groups. It believes that the weight of evidence does not suggest there are adverse health effects from RF exposures below ICNIRP guidelines. However, since mobile phones have only been in widespread use for a relatively short time, the possibility remains open that there could be such effects. So for TETRA we need to ask whether there is any reason why exposure from TETRA signals should be more likely to produce adverse health effects than those from GSM signals at 900 or 1800 MHz or those from analogue radios previously in use. . . The emission from TETRA phones (though not base stations) is pulsed at 17.6 Hz. . . There is no reason to suppose that pulsing-switching the RF on and off-should lead to additional biological effects unless it can be demodulated to produce electric fields at 17.6 Hz greater than around 2 mVm² (ICNIRP guidelines) . . . A review of TETRA by the UK’s AGNIR Group (2001) concluded that “it is unlikely that the special features from the signals from TETRA mobile terminals and repeaters pose a hazard to health, Furthermore research is desirable however to establish this more firmly. . .”

- * Challis said that he accepts Bernard Veyrets conclusions.
- * He is of the Calcium Efflux studies (Adey, Blackmore 1979, 1992, Kettel 1996) that would indicate that the 17.6 Hz pulsing may be hazardous.
- * He thought that demodulation in biological tissue was unlikely .
- * Health complaints are psychosomatic illness only – worrying can make you sick.

Challis later mentioned that he supports ICNIRP because “we need to depend upon good science”. He blamed both the UK government and industry for not getting the proper information out to the public.

From the **Round Table Discussion “Mobile phones and children”**

Michael Repacholi: Children identified as stage 1 for health protection. – Identified when the evidence for health risks is judged suggestive, but insufficient to meet the criteria for assessing health risks. – established on the basis of unconfirmed effects having applications for health – and replication of studies essential.

Why children?

- * Children are generally more sensitive to many environmental agents.
- * EMF magnetic fields classified as a 2B possible carcinogen, based on childhood leukaemia studies – weak evidence according to Repacholi.
- * IEGMP – Repacholi mentions the precautionary recommendations on children’s extra sensitivity in that report but then goes on to state the:
- * US FDA advice on children and mobile phones (no effects at all)
- * Health Council of the Netherlands (no effects at all)

Repacholi mentioned that it was unethical to test for EMF effects on children.

Repacholi said that the WHO has not recommended any precautionary advice to children and cell phone use. Current studies not suggestive of any special sensitivity of children from exposure to EMF.

Repacholi claims that the current evidence is not sufficient for conclusions to be made.

Repacholi on the WHO

- * Precautionary measures being looked at.
- * Research agenda being developed.
- * Workshop reports almost complete.

Shortly later Repacholi stated that “ children in-utero receives more microwave radiation from the mother than all artificial sources of EMF”.

*Repacholi said that they (the WHO) don't have the science to make recommendations based on science, not fantasy. (in regards to children & mobile phone use)

International Standards for Children, Paulo Vecchia, ICNIRP.

ICNIRP uses a two level protection system, basic restrictions and reference levels.

“ Only solid science taken into consideration in setting guidelines” . . . “quality of study and consideration of results”.

ICNIRP process and children? (questions)

- * Are there any health effects or biological effects relevant for health (RF exposure) that is specific for children?
- * If so, do they occur at lower levels than for adults?
- * Is the threshold for any given effect lower for children than adults?
- * Is dosimetry for children different from adults?

My comment: These questions were conveniently answered by Motorola in the negative.

Vecchia then claimed that children are taken into account by ICNIRP but in regards to children and mobile phone use it is not the responsibility of ICNIRP.

“Therefore there is no need or justification for a special approach to children”.

Second Day

Future developments in ICNIRP , Paulo Vecchia

“ICNIRP only considers acute effects in its precautionary principle approach. Consideration of long term effects not possible”.

Then Vecchia made the astonishing statement:

“Precautionary actions to address public concerns may increase rather than mitigate worries and fears of the public. This constitutes a health detriment and should be prevented as other adverse effects of EMF”

My comment: I suppose from this we could conclude that ICNIRP considers precautionary actions as a thermal effect!

Vecchia’s conclusion: “There are no reasons on present evidence to revise existing guidelines”.

Later that day Repacholi called on Russia to publish their research that the Russian RF standards are based on so that the WHO and ICNIRP could do an assessment on the data. He said that it was important to have their standards based on “good science”.

In reply Yuri Grigoriev stated that Russia will soon start publishing its data in English.

Repacholi pointed out what is the use of the Russian standards if the millions of phones sold in Russia met the ICNIRP guidelines but not the Russian ones? And later he asked: “How can you tell the public to give up their phones because they are in excess of the standards?”

Repacholi’s concluding remarks at the conference

- * The conference seen as a sharing of information between East / West scientists.
- * WHO wants to make sure people are properly protected from all forms of radiation.
- * WHO wants all information Russia has for their rationale their standards – we want to know all information through the WHO.
- * WHO will help translate key studies.
- * Countries at this point are getting their national authorities to review their standards.
- * Russian authorities urged in a full way to also review their standards as it is important to maintain “scientific credibility”. . . “Science must be the basis for developing health based standards”.
- * Russian colleagues must recognize we live in a global community – “we” (WHO, ICNIRP) can “help your national authorities”.

IIc) Joint Russian – French Study

The basis for both the Russian and Chinese RF standards are largely based on 9 (or possibly 12) RF studies (1975 to 1986) that examined semi-chronic, low intensity RF effects on the immune system. It is claimed by the Russians that the results of these studies found a statistical significance for an unfavourable process in the immune system of rats exposure at pulsed microwaves at levels 50 to 500 uW/cm². Effects were seen on brain tissues, blood serum, and effects on the foetus. Exposure times were 30 days, with some at 15 days.

It is claimed that long term exposure can cause adverse health effects in the population at levels 50 – 500+ uW/cm². Heating effects do not play a role, which is in direct contradiction to both WHO and ICNIRP’s thermal-effects-only doctrine and is the fundamental stumbling block in the ongoing series of conferences between Russia and ICNIRP / WHO, etc.

In this latest conference discussions centred around a planned joint Russian – French study to confirm (or not) the Russian RF studies that their standard is largely based upon. The French effort will be under the guidance of Bernard Veyret, The main topics which he has addressed recently concern the effects of pulsed low-power microwaves on the immune system of mice; the effects of strong pulsed magnetic fields on the proliferation of tumour cells in culture; and on the growth of tumours in vivo. He is currently investigating the effects of mobile telephones on biological systems. He has been an ICNIRP member since May 2000.

The Project will be animal studies using chronic low intensity microwaves at 2450 MHz. Repacholi expressed the importance of confirming the Russian studies “WE want to know if this effect exists”. Repacholi said that RF immune system studies in the US and Europe are uniformly negative. The WHO is not interested in exact replication but use the best available dosimetry to determine if immune responses to RF from mobile phone use are real.

Veyret favours a confirmation study because they consider a confirmation as more realistic as the Russian exposure systems used in the time frame of 1975 to 1986 are now antiquated with far more accurate systems now used in the West. Yuri Grigoriev favours an exact replication.

Objectives of study

- 1) Evaluation of 30 day low-level 2450 Mhz microwave exposure at 0.6 W/kg. On rats, using immunological parameters.
- 2) A determination of mechanisms.

Exposure

Phase 1= Dose assessment on mode of exposure.

Phase 2= Design of a new exposure system or use available whole-body exposure systems.

Phase 3= Exposure of animals – protocol to be established.

Biology

- 1) Russian studies – Assay level of antibodies against various antigens. Opening of the BBB? Inflammation of the microglia?
- 2) Infiltrating lymphocytes, Lymphocyte sub populations, use ELISA Assays (1/2) and (2/2).
- 3) Schedule funding: Scheduled to start in 2005 and run for two years. Funding from: National Institutions, Industry, USAF in Europe, Swiss Research Foundation on Mobile Communication.

Personnel for study

Michael Geffard, Isabelle Lagroye, (slide then removed) through Barnard Veyret’s PION labs in France.

External advice to the Project by the WHO, Brookes AFB, Rosa Sypniewski (?)

Yuri Grigoriev mentioned that CW not pulsed microwaves will be used for the study. CW at 2450 MHZ. However with sufficient funding pulsed microwaves could be used as well.

END OF CONFERENCE

Section III: Recommendations: An oversight committee is needed

October 10, 2004

Russian Roulette

Consider the two possible outcomes, and implications for the Russian-French study.

1) The study fails to confirm the Russian studies, ie. no effects are found on immune system function from RF exposures:

It would then be argued by WHO and ICNIRP that this invalidates the main basis for both the Russian and Chinese RF standards and therefore if they wanted to maintain any scientific credibility they should accept ICNIRP and the thermal effects only paradigm. A likely victory for ICNIRP's global harmonization. - A fantastic outcome for ICNIRP

2) The study does find an adverse effect on the immune system that re-confirms the Russian studies:

This would give a great boost to the Russian non-thermal viewpoint, and give worldwide credibility to their standards. At the same time it would be a serious blow to ICNIRP and its long-standing acute effects only mantra, and its global push for harmonization. It would also bring the credibility of all those Western thermal-effects-only scientists into question and the entire basis for many national RF exposure standards that follow ICNIRP, IEEE, etc. Additionally any assurances of safety from telecommunications would be out the window and provide a great boost for community activists campaigning over health grounds.

Of course ICNIRP could then state that one study cannot set policy and that this finding now has to be replicated – giving some years time to do damage control. Even so, the process of harmonization would be dead in the water for some time to come.

For ICNIRP this would be a disastrous outcome.

Therefore, it is my opinion that ICNIRP has too much at stake to be impartial in this study, while at the same time it will be deeply involved in designing the criteria and conduct of the study.

What is urgently needed is an “oversight committee” a small group of independent radiation experts not tied to WHO, ICNIRP, the telecommunications industry, or the RNCNIRP, and having the expertise to ensure that all is above board so that the results of the study cannot be questioned. They would not take part in the study but act as external monitors, similar to what we see the UN do in some country's national elections.

Members of this committee should only be included if they meet with the approval of both the Russian and French teams. This process should take place in the public arena.

The Russian scientific community should insist upon such an oversight committee for their scientific credibility may ultimately depend upon it. (October 10,2004)

Section IV: The final conference “Statement”

Received December 10, 2004

Mobile Communication & Health: medical, biological & social problems

Moscow, Russia

20-22 September 2004

Electromagnetic safety of mobile communication base stations

The conference “Mobile Communication and Health: medical, biological, and social problems” was held in Moscow on September 20-22, 2004. It was jointly organized by the Russian National Committee on Non-Ionizing Radiation Protection within the World Health Organization's (WHO) International EMF Project. Representatives of WHO, the International Commission on Non-Ionizing Radiation Protection (ICNIRP), and scientists from 14 different countries discussed the topic of "Electromagnetic safety of base stations of mobile communication."

The development of mobile communications, and the consequent need for global coverage networks has led to the installation of large numbers of mobile communication base stations. As a result there has been a need to fully characterize exposure levels around base stations, to check compliance with national and international exposure standards, and to assess possible health risks of public exposure.

These issues were debated within the conference and experience on the handling of base stations in some of the participating countries was also discussed.

After comprehensive discussion, the following conclusions were agreed by the participants:

- The level of safety of electromagnetic sources, including base stations for mobile communication, should be evaluated with reference to accepted, science-based standards;
- From a comprehensive review of the large body of scientific literature, a consensus exists that international guidelines, as well as Russian national regulations, ensure adequate protection against all established health effects of radiofrequency fields according to current knowledge level;
- However, large discrepancies exist between Russian and international standards – in particular in the frequency region of interest for mobile communication – that justify actions towards harmonization;
- To this purpose, participation of Russian scientists in the actions for world-wide harmonization of standards promoted by WHO’s International EMF Project, is highly recommended;
- In view of the continuous development of telecommunications – and of mobile telephony in particular – it is recommended that further research be promoted and international collaboration and information exchange be encouraged;
- In setting research needs and priorities, reference should be made to WHO’s research agenda; active contribution of Russian scientists to the periodical update of such agenda is sought;

- Residential exposure to electromagnetic fields radiated from base stations are well below limits recommended by international and national standards; this has been supported by the results of surveys conducted in various countries, and presented at the Conference;
- Noting the public sensitivity towards base stations, it is recommended that mobile communication operators, as well as national agencies, consider the possibility of precautionary actions; the Precautionary Framework suggested by WHO provides useful guidance for such actions;
- It is imperative that open and transparent communications occur between all parties involved and easy access of the public to the relevant information be provided;
- Independent and scientifically qualified institutions should be identified and made legally responsible for providing unbiased information, checking compliance with the standards, and providing advice in cases of controversy.

The above recommendations should be brought to the attention of all parties interested in the development of mobile communication, including international organisations, national authorities, manufacturers and operators, and the public.