



Submissions to Standards Australia on adopting the ICNIRP radio frequency exposure limits for Australia and New Zealand.

ICNIRP RF/MW Guidelines for Australia / New Zealand

Discussion paper (A)

By Don Maisch representing the Consumers Federation of Australia

Submission to:

Standards Australia / New Zealand Committee TE- 7: Human Exposure to Electromagnetic Fields

July 24, 1998

Comments on the Interim Standard for Committee debate

A 4W/kg "threshold level".

The the forward of the Interim Standard, a level of 4W/kg is taken as a "threshold" level, below which it is claimed there is no conclusive evidence of any harmful effects to people.

It is certainly acknowledged that there is evidence of biological effects below this level but it is generally claimed that inconsistencies in the data, questionable study design, failure to replicate and other problems mean that this evidence is of too poor quality to consider in standard setting. Therefore the level of evidence that is required in standard setting can only rely on well established and confirmed evidence. based proven adverse biological effects. In this case that pertains to disruption of learned behaviour or learning of new behaviours at a threshold thermal level .

However, if you take evidence of disruption of learned behaviour or learning of new behaviours, as found in peer reviewed and published papers, as the criteria, there is a wealth of evidence for these effects occurring at levels far below the 4W/kg level. In an analysis of 120 papers used in the IEEE C95.1-1991 Standard, which were judged as being suitable for use in standard setting, there are many reports which found adverse effects at a-thermal levels below the official threshold, including studies of disruption of behaviour. (analysis supplied upon request).

I think it would be advisable to include in discussions the reasons why this evidence is apparently dismissed in setting the interim standard, especially considering the statement of Ross Adey in 1995:

" The laboratory evidence for a-thermal effects of both ELF and RF/microwave fields now constitutes a major body of scientific literature in peer-reviewed journals. It is my personal view that to continue to ignore this work in the course of standard setting is irresponsible to the point of being a public scandal."

Having said this, I acknowledge that a-thermal thresholds may be quite difficult to determine at this stage and thus make inclusion in the current standard unlikely. In this case the limitations of the standard in this respect should clearly be stated.

In Part 1 of the interim standard under section 2, the reference to "insignificant levels" is ambiguous. It may be more to the point to plainly state that the standard is only meant to provide protection against immediate thermal hazards, such as shock and burns, and is not meant to provide any protection from possible long term, low-level exposures.(Or words to that effect.)

The case for a strong Precautionary Approach, and statement of intent, which takes into account possible non thermal effects, to be included in the Australian Standard.

Discussion paper (B)

By Don Maisch representing the Consumer Law Centre, Melbourne Australia

Submission to:

Standards Australia / New Zealand Committee TE- 7: Human Exposure to Electromagnetic Fields

Wellington N.Z. November 4-5, 1998

The following will no doubt generate significant discussion within the committee. However, it does not necessarily mean that I am against the adoption of the ICNIRP exposure limits into the Australian Standard. The following is written because, in my opinion, too much faith is being put into the ICNIRP Guidelines as the "state of the art" in Guidelines, as something Australia and New Zealand should aspire to.

As I see it, we are discussing the formation of a health standard, designed to provide an adequate level of protection for the public and workers. As such, there is a fundamental difference of opinion within some of the membership of this committee. The argument over just what constitutes **sufficient scientific evidence** to make public health decisions and take corrective action is at the core this debate. The challenge for this committee is how to reconcile this difference in viewpoints to achieve agreement as to a "Precautionary Approach" that will meet public acceptance.

There is a large difference between what constitutes causal evidence for purposes of achieving scientific consensus and what constitutes sufficient evidence for a public health policy. With most other environmental agents, dioxin for instance, a lower threshold of evidence is permissible where the weight of the evidence indicates that a risk to public may exist. Standards of evidence for triggering interim public health advisories are different than the standard for scientific certainty. However when it comes setting a health standard for exposure to RF/MW, a very high standard of evidence is insisted on before any corrective action is taken. This is inconsistent for a public health policy.

The ICNIRP Guideline values that we are currently considering for inclusion into the Australian RF/MW standard follow the line that is accepted by virtually all RF/MW exposure guidelines. They are based on the assumption that thermal effects are the only relevant biological parameters to base exposure guidelines on.

This assumption is based on an evaluation of the epidemiological evidence that claims, 1) the epidemiological findings are inconsistent, 2) have not adequately excluded the possible effects of confounders and 3) have not identified an obvious mechanism.

In my initial submission to this committee I tabled evidence for there being a wealth of peer reviewed and published papers that found adverse effects at levels far below the acceptable ICNIRP limits. I mentioned Ross Adey's view on this issue and I doubt that any of the committee members would question his knowledge of these issues. In my view, the ICNIRP Guidelines seem incapable of dealing objectively with data on population exposures to RF/MW especially in light of the three epidemiological studies that are referred to on page 11 of the latest Guidelines. The conclusions by the authors of the ICNIRP document that these three studies were 'negative' studies is a serious mis-interpretation of the facts.

On page 11 of the ICNIRP Guidelines, under the section **Cancer studies**, the following is stated:

"Studies on cancer risk and microwave exposure are few and generally lack quantitative exposure assessment. Two epidemiological studies of radar workers in the aircraft industry and in the U.S. armed forces found no evidence of increased morbidity or mortality from any cause (**Barron and Baraff 1958; Robinette et al. 1980**; UNEP/WHO/IRPA 1993). Similar results were obtained by **Lillienfeld et al. (1978)** in a study of employees in the U.S. embassy in Moscow, who were chronically exposed to low-level microwave radiation."

The Barron and Baraff 1958 study examined the radar exposed personnel at Lockheed Aircraft Corporation and concluded: "No acute, transient, or cumulative physiological or pathological changes attributable to microwaves have been revealed in this study."

The Robinette (1980) and Lillienfeld (1978) studies featured prominently in previous ICNIRP documents, notably the 1995 and 1996 ICNIRP paper *Health Issues Related To The Use Of Hand Held Radiotelephones And Base Stations*, as follows:

1) **Robinette et al , 1980**: "A large scale study of radar workers involving over 40,000 people exposed for two years and followed up for twenty years failed to identify any increased incidence of illness or mortality associated with exposure."

2) **Lilienfeld et al , 1978**: "studied 1,800 employees and 3,000 dependents of the United States embassy in Moscow who were exposed to low level RF radiation in the embassy. They did not find significant adverse health effects in that population."

On April 30, 1997 I wrote to Ms. M. Mandic, Secretary of EME Research Priorities at DOCA with evidence that the reported findings of the Robinette and Lillienfeld studies were in fact very much in question following a detailed re-analysis of these studies by Dr. John Goldsmith, from the Epidemiology and Health Services Evaluation Unit at Ben Gurin University, Isreal.

On May 10, Dr. Michael Repacholi replied to this letter, not refuting the Goldsmith analysis but stating that "reference to the Robinette and Lillienfeld studies is largely irrelevant following the recommendations by an ICNIRP/WHO International Seminar on low-level RF fields held in Munich (November 1996)."

If these two studies were irrelevant by Nov. 1996 then why are they still being referred to in the current ICNIRP Guidelines?

According to Goldsmith:

1) Robinette et al 1980 : A significant increase in leukemia in the most exposed group was diluted with a group with no increase with leukemia to give the combined group a small , but not significant increase. The abstract reports "No adverse effects....could be attributed to potential microwave exposure..."

According to Goldsmith, "The correct interpretation of this report is that among the group expected to have highest exposure there is a significant excess of hematological and lymphatic cancers' ... "The negative statement in the summary is a misrepresentation of the findings. All reviews which cite it are biased."

2) Lilienfeld et al, 1978 Moscow study: (Obtained from the US State Department under the Freedom of Information Act). Quoting Goldsmith:

"A study was done and reported Sept. 1967 of a group of 43 workers, (37 exposed and 7 not exposed) tested for abnormalities in chromosomes on stimulated division. 20 out of the 37 were above the normal range among the exposed, compared to 2/7 among the non-exposed. In a final report, the scientists urged a repeat and follow-up study which was clinically indicated for 18 persons, but was not undertaken by the end of the contract period, June 30, 1969. . .

A study of blood counts among exposed persons in Moscow, compared to comparable persons in Washington, reported to the State Department on October 7, 1976, showed the statistical comparison significantly different for Moscow subjects in almost every comparison. . .

Data on exposure and occurrence of some cases of cancer were withheld from Prof. Lilienfeld until the report was complete, and it was too late to include in the results. . .

The views of Prof. Lilienfeld were altered or deleted at the request of the contract officer. . .

Lilienfeld had urged that follow-up studies be done, since the latency period for some possible types of cancer had not yet been sufficient at the time of his survey. . .

Reviews of the work done by the contract investigators were interpreted by consultants as inconclusive because the State Department had failed to complete the follow-up work recommended by its contractors."

Prof. Goldsmith concludes about the Moscow study that evidence was suggestive for four health effects, (a) chromosomal changes, (b) hematological changes, (c) reproductive effects, and (d) increased cancer incidence from the microwave irradiation in Moscow.

Barron and Baraff, 1958:

I was unable to find the Barron and Baraff 1958 paper and e-mailed Dr. Goldsmith, requesting if his department could source it in their medical library. His reply, received on 18 October is as follows:

"Barron and Baraff 1958: "A study of the the radar exposed personnel at Lockheed. They compare 226 radar -exposed and 88 non-exposed persons, the source for which is not identified. They conclude: "No acute, transient, or cumulative physiological or pathological changes attributable to microwaves have been revealed in this study." There was an earlier report by the same team in J. Aviat. Med., Vol.122, p 442, 1955 which I believe reported some deviant blood counts. In this article [1958 study] , which also shows lower blood counts in radar-exposed than in control subjects, the deviant values are attributed to. . "a variation in the interporetation by a laboratory technician." (p1195). Table 4 shows a lot of abnormal eye examination findings, and guess what? There are no control data, merely the statement, "In our opinion not a single finding can be attributable to radar exposure" Finally in table 3, note the occurance of 7 cases of peptic ulcer in their 353 subjects, but not a single case in the 86 controls. In the casual data on mortality on p. 1197, why only one year and what did microwave-exposed persons die of?"

Recalling that this also was published during the “cold war”, hunkering down behind the “thermal only hypothesis” was the policy, and anything else was likely to be involved in a cover-up. In their summary, the word “attributable” is a fudge word, with many subjective elements.

Read carefully yourself. Ask who has reported the long-term follow-up of these workers? (No one)”

[signed] *John Goldsmith”*

I have received the Barron and Baraff 1958 paper and a careful examination clearly shows that this paper is not of the quality (that ICNIRP insists on) for inclusion in the Guidelines.

Additionally Goldsmith mentions that the Selvin study (1992), referred to in the ICNIRP Guidelines (immediately following the Lillienfeld study), used a small number of subjects and therefore had inadequate power to find an association if one were present. It was originally presented as a methodological rather than an epidemiological report and so its inclusion in the Guidelines is inaccurate reporting.

It is “not a level playing field” in rejecting the evidence, in many cases peer reviewed and published, for non thermal effects while uncritically accepting very questionable studies and claiming no effects were found. You can’t have it both ways!

This bias in the ICNIRP Guidelines very much brings into question the objectivity of the authors in arbitrarily rejecting the evidence for non thermal biological effects. However, this does not necessarily impinge upon the validity of the thermal guideline exposure limits in the Guidelines, which are well researched and widely accepted **in relation to known thermal effects**. I think we can all agree that it is vital to give proper protection against thermal effects and the new ICNIRP Guidelines seem to be the best international ones around even if they do put the 900 MHz limit from 200uW/cm² up to 450uW/cm². The rationale for this increase seems scientifically valid **when considering thermal effects only**.

However the debate over possible non-thermal effects is another matter entirely, something that is beyond the scope of all current internationally used RF/MW standards. As far as providing any protection from low-level chronic exposures, which are foremost in the public's mind, they do not adequately address this issue. This should clearly and honestly be stated at the beginning of the standard to gain some level of public credibility.

We seem to have gone backwards since AS 2772-1985, where this issue was at least mentioned in the Forward:

“It has been demonstrated that low-level, long-term exposure can induce a variety of effects in the nervous, haematopoietic and immune systems of small animals. Such exposure may influence the susceptibility of such animals to other influencing factors. Thermal influences seem inadequate to account for these and other effects.”

From the viewpoint of the industry even this type of statement is clearly not favoured, but in my opinion, speaking ‘from the other side of the fence’, a standard that plainly spells out what it does and doesn’t do . . . , would be far more accepted by the public than what we have had in the past.

There is also a danger of relegating the issue of 'low-level, long-term' exposure to simply a technical qualification tucked away in the body of the standard, in the way it was in the 1985 foreword where it lay neglected until deleted in later versions.

Considering the above, the following statement in the Forward to the current AS 2772.1:1998 is

certainly not acceptable:

“This Interim Standard provides guidance on human exposure to radiofrequency (RF) fields and sets limits intended to avoid any detrimental effects on health.”

A more truthful statement would be along the lines:

“ This Standard [Guideline] provides guidance on human exposure to radiofrequency and microwave (RF/MW) energy and sets limits intended to avoid acute and obvious detrimental effects on health from high level (thermal) exposures. It does not cover the possible chronic or long-term effects of low-level prolonged exposures (non thermal) which are outside the scope of this Guideline.

Following this line of thinking , the thermal nature of the Guidelines should be also mentioned in the title of the document, referring to **“Maximum Acute Exposure Levels”**.

October 20, 1998

References

- 1) Goldsmith J “Where the trail leads” *Eubios Journal of Asian and International Bioethics*, Vol 5, p 92- 94, July 1995
- 2) Goldsmith J “Epidemiologic Evidence of Radiofrequency Radiation (Microwave) Effects on Health in Military, Broadcasting, and Occupational Studies”, *International Journal of Occupational and Environmental Health*, Vol 1/No 1, Jan-Mar 1995.
- 3) Goldsmith J “Epidemiologic Evidence Relevant To Radar (Microwave) Effects”, *Environmental Health Perspectives*, Vol 105, Supplement 6, Dec 1997.
- 4) Dalton L “*Radiation Exposures*” , Scribe Publications, 1991.
- 5) Barron CI, Baraff AA, “Medical considerations of exposure to microwaves (radar). *J. Am. Med. Assoc.*; Vol.168 p 1194-1199, 1958.

SUBMISSION TO TE/7 COMMITTEE BY THE AUSTRALIAN & NEW ZEALAND COMMUNITY/CONSUMER COMMITTEE REPRESENTATIVES.

Don Maisch: Consumer Law Centre, Melbourne.

January 27, 1999

Dear committee members,

Why a strong precautionary approach is needed.

General Comments

From Don Maisch, representating the Consumer Law Centre, Melbourne

e-mail: emfacts@tassie.net.au

My earlier submission to the Wellington meeting emphasized the importance of a strong precautionary approach. We have certainly made significant progress in this regard but it is still not worded strong enough in my opinion. There may be far more important reasons for including a strong precautionary approach and statement of intent than just appeasing the "community/consumer" members' concerns on this committee.

It certainly is no secret that the primary reason for incorporating the ICNIRP limits into the Australian /New Zealand standard is to allow the introduction of new technology that has been designed to meet ICNIRP limits. This technology would not meet the requirements of the current current standard AS 2772.1 1990.

It is acknowledged that there are valid reasons for the higher ICNIRP limits at the higher frequencies when considering the known thermal effects of human exposure to RF/MW. It is also acknowledged that, as the "Vienna EMF Resolution" clearly states, that at this point in time we do not have enough data to set a standard to provide protection against possible long term low level exposures. To quote:

" The participants agree that the biological effects from low intensity exposures are scientifically established. However the current state of scientific consensus is inadequate to derive reliable exposure standards. The existing evidence demands an increase in the research efforts on the possible health impact and on an adequate exposure and dose assessment."

We are now at the point that the U.S. standard setters were at in 1996 when they adopted higher RF/MW exposure limits in order to accommodate new technology. One example of this technology is a new class of short-range computer communications devices that operate at 59 to 64 GHz, and could expose operators to levels in excess of 5 mW/cm². Hewlett-Packard, the manufacturer of this equipment, stated in 1996 to the U.S. Federal Communications Commission (FCC) that setting a proposed exposure limit of 5 mW/cm² would make their technology "impractical" and it was unnecessary because "scientific data simply does not exist for health effects of power levels at these frequencies". (Microwave News March/April 1996, page 9)

Also in Microwave News was a statement by a FCC spokesperson that approximately 6000 new telecommunications devices are about to come on the market. Many of these devices will be operating in the frequencies mentioned in the above paragraph. This should be of concern to Trade Unions, whose members will be using these devices as part of their employment.

By incorporating the ICNIRP limits we are in the position of opening up Australia to a large number of new devices, many of which will be operating at frequencies (GHz) where little, if any research has yet been conducted on long term, low level exposures. There are those on this committee that will argue that the chance of any low level hazards from this revolution in technology are practically nil. However in the absence of scientific data, this can only be an arbitrary opinion at best.

The American standard setting committee took a somewhat different view when they refused to vote on their RF/MW standard, stalling progress on the standard until the IEEE had to step in and indemnify all those working on the standard against future liability. (Microwave News, Mar/Apr. 1996, page 1 &12)

The possibility of future litigation also concerned the scientists working for the U.S. Wireless Technology Research (WTR). They went on strike for nearly a year until their parent body, the CTIA agreed to indemnify them against possible future claims. The WTR was paid US \$ 938,000 to fund indemnity insurance coverage. (Microwave News, March/April 1997)

We certainly do not want to go down that route. However, their actions clearly indicate that they

thought that the possible hazards from low level exposures had to be considered, at least from a personal financial viewpoint.

We are standing on the brink of a significant increase in both public and occupational exposures to RF/MW from new devices as a result of incorporating the ICNIRP limits. There is a possibility that health hazards may eventually become apparent as a result of this increase, but at this time we do not know whether or not this may be the case but the possibility cannot be ruled out. From a consumer/community viewpoint this is of concern as standards for public safety are different from those of scientific certainty. A strong precautionary approach is a must as a weak version will not sit well with the public. I would like to see the following included in the Forward of the standard:

"This Standard [Guideline] provides guidance on human exposure to radiofrequency and microwave (RF/MW) energy and sets limits intended to avoid the known detrimental effects on health from high level exposures. It does not cover chronic low level exposures whose links to health problems are currently uncertain and the topic of divided scientific opinion and ongoing scientific review."

Precautionary labelling:

Until there are some guidelines on the labelling of emissions from devices so that users can judge for themselves what are the safest (lowest emissions) then the statement on taking a precautionary approach is a somewhat empty assurance for the consumer.

All new transmitting equipment which wouldn't have been permitted under the the old standard AS/NZS 2772.1: 1998 should be subject automatically to labelling requirements as to frequency and emission levels.

Evidence suggests that pulsed power devices (TDMA, DECT, GSM, etc) may be more biologically interactive with human exposure than continuous wave transmissions. As such, while certainly not being prohibited, they should be subject to precautionary labelling.

FINAL VOTE

March 3rd, 1999

Dear Chairman TE/7 Committee - Human Exposure to Electromagnetic Fields,

After consideration of the final draft I DO NOT AGREE for the following reasons to the adoption of Document TE/7-0090 as a Joint Australian/New Zealand Standard.

My previous submissions to the committee emphasized the importance of what was termed a strong Precautionary Approach in the standard in relation to possible low-level a-thermal biological effects. From a public health perspective this is reasonable, especially as we are supposed to be dealing with a "health" standard.

The draft that was generally agreed upon at the Wellington meeting, and which was circulated for public comment, did have elements of a Precautionary Approach, although how it could be implemented was uncertain.

The final wording of both the latest Foreword and Section10 (d) is a significant departure from the concept of a Precautionary Approach as formulated at the Wellington meeting. In fact any reference to "Precautionary Approach" has been deleted in the final version.

THE SHIRLEY SCHOOL DECISION:

The decision by the New Zealand Environment court (Shirley School decision) to reject a Precautionary Approach for possible low level biological effects was an important consideration during the last TE/7 meeting. This decision was actively promoted by the industry as a reason to reject another "tier" because, to use the Judge's words:, "a precautionary approach is already implicit in the Act". (1)

The decision by the Environment Court Judge to reject a Precautionary Approach on the grounds that it is already incorporated in the standard WAS NOT relevant to the discussions in the TE/7 Committee. In the Judge's decision it is stated that the ANZ Standard "provides for a factor much greater than is required to eliminate the possibility of any thermal effects."(2)

Judge Jackson also noted from ICNIRP that "Overall, the literature on a thermal effects. . is so complex, the validity of reported effects so poorly established, and the relevance of the effects to human health is so uncertain, that it is impossible to use this body of information as a basis for setting limits on human exposure to these [a-thermal] fields." (3)

Therefore it is reasonable to conclude that the inclusion of a safety margin as a precautionary approach IS included in both the ANZ Standard and the ICNIRP Guidelines FOR THERMAL EFFECTS ONLY and it is not intended to cover possible a thermal effects.

THEREFORE BOTH THE NEW ZEALAND ENVIRONMENTAL COURT DECISION AND THE ICNIRP GUIDELINES DO NOT ADDRESS A PRECAUTIONARY APPROACH FOR POSSIBLE LOW-LEVEL ADVERSE BIOLOGICAL EFFECTS.

The judge in the Shirley decision accused the expert testimony of some of the witnesses as being biased but has uncritically accepted the industry's evidence as correct in its interpretation of the science. For instance Judge Jackson states that ICNIRP accurately portrays the general scientific view of the research (4) and also refers to the now discredited Robinette et al 1980 study. (5)

If the judge displayed the same level of critical examination with the ICNIRP Guidelines he would have found that ICNIRP makes many serious errors in its evaluation of the epidemiological evidence.

The ICNIRP Guideline exposure limits that are now being considered for Australia and New Zealand follow the line that is accepted by virtually all RF/MW exposure guidelines. They are based on the assumption that thermal effects are the only relevant biological parameters to base exposure guidelines on.

This assumption is based on an evaluation of the epidemiological evidence that claims, a) the epidemiological findings are inconsistent, b) have not adequately excluded the possible effects of confounders and c) have not identified an obvious mechanism.

In my initial submission to this committee I tabled evidence for there being a wealth of peer reviewed and published papers that found adverse effects at levels far below the acceptable ICNIRP limits. I mentioned Ross Adey's view on this issue and I doubt that any of the committee members would question his knowledge of these issues. In my opinion, the ICNIRP Guidelines seem incapable of dealing objectively with data on population exposures to RF/MW especially in light of the three epidemiological studies that are referred to on page 11 of the ICNIRP Guidelines. The conclusions by the authors of the ICNIRP document that these three studies were 'negative' studies is a serious misinterpretation of the facts.

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The Robinette (1980) and Lillienfeld (1978) studies featured prominently in previous ICNIRP documents, notably the 1995 and 1996 ICNIRP paper *Health Issues Related To The Use Of Hand Held Radiotelephones And Base Stations* (7), as follows:

1) **Robinette et al , 1980**: “A large scale study of radar workers involving over 40,000 people exposed for two years and followed up for twenty years failed to identify any increased incidence of illness or mortality associated with exposure.”

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report, the scientists urged a repeat and follow-up study which was clinically indicated for 18 persons, but was not undertaken by the end of the contract period, June 30, 1969. . .

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Prof. Goldsmith concludes about the Moscow study that evidence was suggestive for four health effects, (a) chromosomal changes, (b) hematological changes, (c) reproductive effects, and (d) increased cancer incidence from the microwave irradiation in Moscow. (8) (9) (10)

Barron and Baraff, 1958:

I was unable to find the Barron and Baraff 1958 paper and e-mailed Dr. Goldsmith, requesting if his department could source it in their medical library. His reply, and the paper, received on 18 October is as follows:

"Barron and Baraff 1958: "A study of the the radar exposed personnel at Lockheed. They compare 226 radar -exposed and 88 non-exposed persons, the source for which is not identified. They conclude: "No acute, transient, or cumulative physiological or pathological changes attributable to microwaves have been revealed in this study." There was an earlier report by the same team in J. Aviat. Med., Vol.122, p 442, 1955 which I believe reported some deviant blood counts. In this article [1958 study] , which also shows lower blood counts in radar-exposed than in control subjects, the deviant values are attributed to. . "a variation in the interpretation by a laboratory technician." (p1195). Table 4 shows a lot of abnormal eye examination findings, and guess what? There are no control data, merely the statement, "In our opinion not a single finding can be attributable to radar exposure" Finally in table 3, note the occurrence of 7 cases of peptic ulcer in their 353 subjects, but not a single case in the 86 controls. In the casual data on mortality on p. 1197, why only one year and what did microwave-exposed persons die of?

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Read carefully yourself. Ask who has reported the long-term follow-up of these workers? (No one)"

[signed] John Goldsmith" (11) (12)

Additionally Goldsmith mentions that the Selvin study (1992), referred to in the ICNIRP Guidelines (immediately following the Lillienfeld study), used a small number of subjects and therefore had inadequate power to find an association if one were present. It was originally presented as a

methodological rather than an epidemiological report and so its inclusion in the Guidelines is inaccurate reporting.

It is “not a level playing field” in rejecting the evidence, in many cases peer reviewed and published, for non thermal effects while uncritically accepting very questionable studies and claiming no effects were found. You can’t have it both ways!

This bias in the ICNIRP Guidelines very much brings into question ICNIRP's ability to evaluate prolonged low level (a-thermal) possible hazards by uncritically accepting reportedly negative studies without any reanalysis of their data.

THIS IS THE MAIN REASON WHY A STRONG PRECAUTIONARY APPROACH IS NEEDED IN RELATION TO THE POSSIBLE ADVERSE EFFECTS OF PROLONGED LOW-LEVEL EXPOSURES TO RF/MW. IN ADDITION, A THOROUGH, INDEPENDENT ANALYSIS OF THE ICNIRP DOCUMENT SHOULD BE CONDUCTED BEFORE IT IS ACCEPTED BY AUSTRALIA / NEW ZEALAND.

We seem to have gone backwards since the old Standard AS 2772-1985, where this issue was at least mentioned in the Foreword:

“It has been demonstrated that low-level, long-term exposure can induce a variety of effects in the nervous, haematopoietic and immune systems of small animals. Such exposure may influence the susceptibility of such animals to other influencing factors. Thermal influences seem inadequate to account for these and other effects.” (13)

Unfortunately what we now have in the current draft standard is a “homoeopathic” dose of PA, which has been diluted to the extent that virtually nothing is left of the original intent!

Therefore as a public /consumer representative I cannot justify any vote except the NO option.

Don Maisch

References

1) Decision No: C 136/98. Between Shirley Primary School and Telecom Mobile Communications Ltd. New Zealand Environment Court, May-June 1998. Judge JR Jackson. page 113.

2) Ibid, page 18.

3) Ibid, page 89.

4) Ibid, page 87.

5) Ibid, page 77.

6) ICNIRP Guidelines, “Guidelines For Limiting Exposure To Time-Varying Electric, Magnetic, And Electromagnetic Fields (up to 300 Ghz), Health Physics 4: 494-522, April 1, 1998.

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[Back to Main Page](#)