

EMR and Health

Report on electromagnetic radiation, health and well-being

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New draft Australian radiation standard

The public is invited to make submissions about the new draft standard for radiation exposure.

On 31 August, The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) released for public comment a new draft standard for radiation exposure. The public has an opportunity to comment on the draft 'Standard for Limiting Exposure to Radiofrequency Fields – 100 KHz to 300 GHz' until 30 September.

The draft standard encapsulates many of the shortcomings present in the current and previous standards and to which the writer and many others have been drawing the government's attention for over twenty years—see pages 2-4.

It is based on the limits of a standard, published earlier this year, by the International Commission on Non-Ionising Radiation Protection (ICNIRP), a committee criticised by some scientists for its links with the telecommunications industry (*EMR and Health*, Aug 2020).



While the draft standard claims to protect against 'adverse health effects', it allows exposure to levels of radiation that have been shown to damage the body.

The exposure levels it allows are also above those allowed in some other countries that have used the same body of international research in their standards-setting process.

Additionally, it is based on assumptions that may well be flawed.

The Australian standard, when approved, will not supersede other legislation. According to ARPANSA CEO Dr Carl-Magnus Larsson, 'This Standard is intended to complement the requirements of the relevant Work Health and Safety legislation in each jurisdiction.'

The public can make submissions online

(Continued on page 2)

Special issue

The public can make submissions online at:

[https://
consultations.health.gov.au/
arpansa/copy-of-
revised-rf-standard/](https://consultations.health.gov.au/arpansa/copy-of-revised-rf-standard/)



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(Continued from page 1)

at: <https://consultations.health.gov.au/arpansa/copy-of-revised-rf-standard/>

Unfortunately, ARPANSA declined EMR Australia's request to provide a postal address for submissions for those members of the public too sensitive to be able to use computers.

Critique of the draft RF standard

1. The draft standard was developed primarily by government employees as well as a representative of the Mobile Carriers' Forum and a specialist in occupational health. Even though the exposure limits are intended to be applied to the general public and workers, no members of the general public or worker organisations were included. (A former Standards Australia standard-setting committee included community and union representatives.)

2. 'The standard is based on the 2020 guidelines of the International Commission for Non-Ionizing Radiation Protection (ICNIRP) for high frequency fields' (line 83).

- ICNIRP has been criticised for its links to industry (for example, <https://klaus-buchner.eu/bestimmt-die-mobilfunk-industrie-ihre-eigenen-grenzwerte/> and <https://www.spandidos-publications.com/10.3892/ol.2020.11876>)
- The ICNIRP Guidelines have been criticised by hundreds of scientists throughout the world. 'It is our opinion that, because the ICNIRP guidelines do not cover long-term exposure and low-intensity effects, they are insufficient to protect public health,' say signatories to the EMF Scientist Appeal: <https://www.emfscientist.org/index.php/emf-scientist-appeal>



Standard for Limiting Exposure to Radiofrequency Fields — 100 kHz to 300 GHz

Radiation Protection Series S-1 (Rev. 1)

3. The draft states that its purpose is to 'prevent adverse health effects' (line 206) and its limits are 'based on established health effects' (line 293).

However, the draft doesn't protect against all health effects. It only protects against those that it considers relevant, which are (section 2.4):

- electrostimulation of excitable tissue
- whole-body heat stress
- excessive localised temperature rise in



(Continued from page 2)

tissue/heating ie heating above 1 degree C.

4. The draft fails to protect against harmful effects on the body that are known to occur at levels too low to cause heating—in other words, at levels that comply with it. These harmful effects include:

- cell damage
- changes in levels of hormones and neurotransmitters
- DNA damage
- increased levels of free radicals
- brain tumours.

5. The draft's assumption that health problems are caused primarily by heating is inconsistent with mechanisms that have been proposed to account for adverse effects on the body at nonheating levels of exposure, such as:

- oxidative stress, implicated in many health problems, including cancer
- activation of calcium ion channels
- activation of mast cells.

6. The draft's claim to protect health is at odds with the fact that the International Agency for Research on Cancer has classified levels that comply with existing standards as a Class 2B carcinogen, in the same category as lead.

7. The draft's claim to protect health is at odds with the experiences of many people in the community who report unpleasant symptoms, often referred to as Electromagnetic Hypersensitivity (EHS), when exposed to radiofrequency radiation from mobile phones, WiFi routers, mobile phone towers, smart meters and other wireless devices. Scientists in many countries have documented such reports and EHS is considered by some doctors in Australia to be a diagnosable condition.

8. The reference levels in the draft are designed to protect (section 2.2) against:

- whole body exposure averaged over 30 mins
- local exposure, averaged over 6 mins
- brief local exposure, up to 6 mins
- instantaneous local exposure.

(Continued on page 4)

(Continued from page 3)

However, these levels are based on *assumptions* that averaging exposure for various periods of time (6 minutes / 30 minutes) is safe. It assumes that continuous exposure to a “smoother” signal has the same effect on the body as random signals with sharp bursts of radiation. This may not, in fact, be the case as It’s just as likely that a brief strong peak of exposure will damage the body.

9. The draft protects against exposures for short periods of time (6 minutes / 30 minutes). It does NOT protect against long-term exposure such as people receive when using wireless equipment for hours each day every day for years on end.

10. The draft allows higher levels of exposure than those permitted by standards in countries such as Russia, Switzerland, Austria and Italy, which draw on the same scientific evidence.

11. It is premature to establish safety limits for 5G frequencies as no epidemiological testing has been conducted on exposed populations.

12. In light of the uncertainty about safe levels of exposure in the scientific literature, the document must recommend a precautionary approach to exposure and include suggestions for achieving this.

It could well be argued that, in its present form, the draft standard caters more for the profitability of the telecommunications industry than the health of the Australian public and workers. If Australians are to have confidence in the ARPANSA RF standard, then the issues raised above need to be addressed before a new standard is released.

Numerous recent scientific publications have shown that EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life.

These findings justify our appeal to the United Nations (UN) and, all member States in the world, to encourage the World Health Organization (WHO) to exert strong leadership in fostering the development of more protective EMF guidelines, encouraging precautionary measures, and educating the public about health risks, particularly risk to children and fetal development.

International Appeal, <https://www.emfscientist.org/index.php/emf-scientist-appeal>

