

EMR and Health

Report on electromagnetic radiation, health and well-being

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Wireless radiation and tumours

Radiation expert says wireless radiation 'probably' causes brain tumours.

In an Expert Report, Professor Christopher Portier has concluded that, based on human, animal and experimental studies, radiofrequency (wireless) radiation probably causes gliomas and neuroma brain tumours.

Prof Portier, from the Department of Toxicogenomics at Maastricht University in the Netherlands, is an expert in the design, analysis, and interpretation of environmental health data, especially relating to cancer. He has served on numerous US science committees and was Associate Director of the US National Institute of Environmental Health Sciences and Director of the National Toxicology Program.

In his 176-page report, written for plaintiffs in a lawsuit, Portier analysed the relevant scientific studies and concluded that:

- 'The evidence on an association between cellular phone use and the risk of glioma and/or acoustic neuroma in adults is strong.'
- 'There is sufficient evidence from laboratory studies to conclude that



RF can cause tumors in experimental animals with strong findings for gliomas, heart Schwannomas and adrenal pheochromocytomas in male rats and harderian gland tumors in male mice and uterine polyps in female mice.'

- 'There is sufficient evidence to suggest that both oxidative stress and genotoxicity are caused by exposure to RF and that these mechanisms could be the reason why RF can induce cancer in humans.'
- 'RF exposure probably causes gliomas and acoustic neuromas and, given the human, animal and experimental evidence, I assert that, to a reasonable degree of scientific certainty, the probability that RF exposure causes these cancers is high.'

The report can be found at: <http://bit.ly/PortierExpertReport>

In This Issue

German lawyer on 5G	2
Electromagnetic illness	3
Mobiles and tumours	4
5G and aircraft	4
Green Party on 5G	5
Screen time—kids	5
Wireless radiation and cancer	6
Premises Standards	7
'Prostituting Science'	8



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German lawyer on 5G

A prominent German lawyer has addressed the question of whether the widespread and unregulated roll-out of the new 5G technology should take place, given the body of research showing evidence of harm.

Writing in the January issue of 'Nature and Law', Professor Hans-Jürgen Muggenborg, a lawyer in Aachen who specialises in administrative law, documented the many concerns about this rollout.

He pointed out that, while 5G offers benefits of faster internet and higher transmission rates, it has a number of obvious disadvantages, such as the following.

Health

'There is no study that proves the safety of 5G microwave radiation, but there are numerous studies suggesting health consequences, Prof Muggenborg wrote. He referred to evidence that exposure resulted in changes to blood flow, impaired sperm viability, genetic effects, cell death and oxidative stress.

He also referred to the Ramazzini study which showed increased rates of cancer in exposed rodents.

At higher frequencies (60 GHz), exposure can damage oxygen molecules in blood, affecting blood flow, he said.

Muggenborg referred to the German newspaper 'Der Tagesspiegel', which described the International Commission on Nonionizing Radiation Protection (ICNRIP), which publishes radiation guidelines adopted by many countries as standards, as a 'cartel' and said it 'systematically discredits all studies that show possible dangers to human health'.

Environmental impacts

In addition to health impacts, the use of 5G technologies will increase the consumption of coal-based electricity, leading to higher levels of pollution, he said.

Protection of people

In his article, Muggenborg points out that 'the protection of health and human life is of high import in European law' and references the relevant legislation. He also refers to the Rio Declaration on the Environment and Development of 1992 which says that people have a right to a healthy and productive life, living in harmony with nature.

Precautionary approach

Muggenborg says that European and international law embody the precautionary principle which the Rio Declaration defines as follows: 'Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.'

Policy

Applying a precautionary approach, to 5G means introducing some restrictions on the rollout. Muggenborg says, 'The radiation must ...be prevented wherever it can be prevented and permitted where it will be predominantly beneficial.'

He says it would not be appropriate to 'pollute all houses and apartments with radio waves and to endanger the people staying there' because this would impact residents, particularly people who are electro-sensitive. Nor does he believe the benefits of smart meters used by utilities are sufficient to justify exposing the entire population.

Muggenborg suggests precautions could include reductions of signal strength to ensue that radiation does not enter neighbouring apartments.

Muggenborg HJ. Das Vorsorgeprinzip beim Ausbau von G5. *Natur und Recht*. 2021;43(1):16-20. doi:10.1007/s10357-020-3785-z; file:///C:/Users/User/Downloads/M%C3%BCggenborg2021_Article_DasVorsorgeprinzipBeimAusbauVo.pdf (German)

Electromagnetic illness

Humans are electromagnetically sensitive beings who have evolved in an electromagnetic environment (sun, lightning etc), so it is no surprise that they may react to the man-made electromagnetic fields that now surround us, according to Drs Mary Redmayne and Siobhan Reddel. In their recent paper in *Electromagnetic Biology and Medicine* they say, 'It would be most surprising if this significant change to our electromagnetic environment, in but a moment of our evolution, did not affect us.'

To describe the effects of this exposure, they suggest using the term 'ElectroMagnetic Illness' (EMI) which refers, not just to Electromagnetic Hypersensitivity (EHS), but to other negative outcomes of exposure to electromagnetic radiation, possibly triggering allergies and other diseases.

Electromagnetic hypersensitivity has been the term widely used to describe unpleasant symptoms that people experience during or after exposure. They include headaches, skin redness, heart palpitations, concentration and memory problems, sleep problems, depression, irritability and anxiety.

In their paper, Redmayne and Reddel propose a model to describe how electromagnetic radiation affects different individuals. The model suggests that the factors that influence the way a person will react to exposure are:

- a person's physical and neurological response to exposures (in this case EMR)
- awareness of their body's response (somatic awareness) - for example, a person's awareness that their body reacts in a certain way when they're exposed to EMR and
- an individual's capacity to self-repair damage to the body.

So, people who are aware that radiation affects their bodies and remove themselves from a field may avoid or minimise harm, whereas those who are not aware that their bodies are being **affected** but whose immune system can't keep up with the damage, may accumulate cellular damage which could lead to disease.

'This model proposes that modulated RFR [radiofrequency radiation] exposure is likely to be affecting everyone at the cellular level to some extent. This interference includes disruption of cellular homeostasis,' the authors say. In some cases, the body is able to repair the damage and people do not experience symptoms. The authors describe such people as 'electromagnetic-resilient'.

In other cases, people's intrinsic repair system is not able to repair the damage and these people suffer symptoms. When the symptoms reach the point of ill-health, the authors suggest that the term 'electromagnetic illness' applies.

From their review of the scientific literature, the authors suggest that radiation affects the autonomic nervous system which controls unconscious behaviours, such as heartbeat, digestion, respiration and the fight-or-flight response.

The authors suggest a number of positive actions that people can take to counter the problems of EMI.

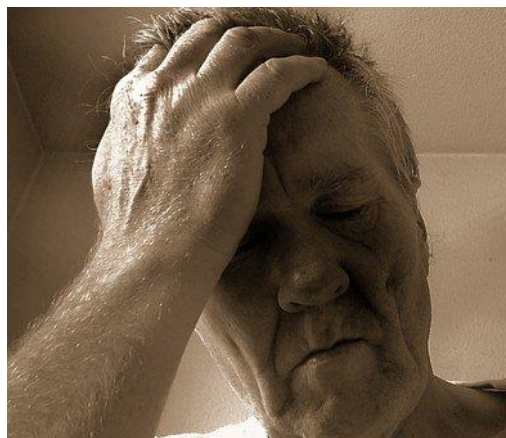
The first is to build somatic awareness so that a person is better able to perceive situations that are unhealthy for their bodies, for example, by embodied-mindfulness. Or, for those that are super-aware, to develop sensory regulation skills such as with breathing practices. The second is to improve the body's capacity for repair, for example by paying attention to gut health, which can help build the resilience necessary to cope with living in the modern world.

A third positive action is to minimise exposure, especially during sleep.

'We need a good night's uninterrupted sleep. That includes as little electromagnetic field exposure as possible. Our bodies do a lot of repair work at night, and that break from EMF exposure may make all the difference to building your repair capacity and maintaining homeostasis,' Dr Redmayne told *EMR and Health*.

Mary Redmayne and Siobhan Reddel, 'Redefining electrosensitivity: A new literature-supported model' *Electromagn Biol Med*, 2021 Jan 25: 1-9; doi: 10.1080/15368378.2021.1874971; <https://www.tandfonline.com/doi/full/10.1080/15368378.2021.1874971>

Supplementary material: <https://www.tandfonline.com/doi/suppl/10.1080/15368378.2021.1874971?scroll=top>



Mobiles and tumours

Do you use a mobile phone for more than 17 minutes a day?

If you do, you can't afford to miss this.

Mobile phone radiation can increase the risk of developing tumours, according to 'the most comprehensive study conducted to date', by researchers from Korea and the United States.

The study, a meta-analysis, analysed the results of 46 earlier studies conducted on the link between mobile phone use and tumour incidence.

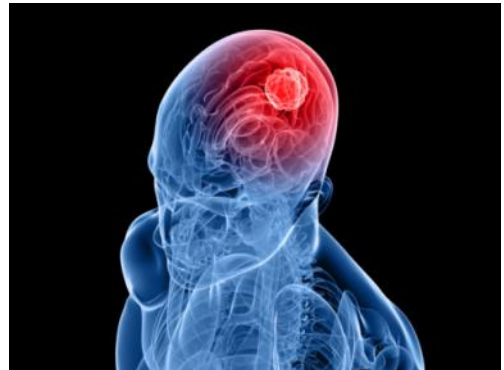
It found that just 17 minutes of mobile phone use a day—in other words, 1000 hours of mobile phone use over a ten-year period—increased a person's risk of developing tumours by 60%.

The authors also found that the results of previous studies varied according to the source of the researchers' funding. Those conducted independently by Professor Lennart Hardell's team found an increased risk of tumours from mobile phone use.

However, those studies that funded by the telecommunications industry as part of the Interphone project showed that mobile phone use 'reduced' the tumour risk. 'These studies were partly funded by the mobile phone industry, had poor methodological quality, showed larger differences in response rates between the case and control groups, and did not use blinding at interview,' the authors of the current study said.

They also pointed out that, although most health agencies support the view that only the heating effects of wireless radiation cause damage, the scientific literature tells another story. '...numerous in vitro studies and animal studies demonstrated other possible mechanisms including increasing oxidative DNA damage and altering protein structure and expression,' they said.

Choi, Y et al, 'Cellular Phone Use and Risk of Tumors: Systematic Review and Meta-Analysis', *Int J Environ Res Public Health* 2020, 17(21), 8079; <https://doi.org/10.3390/ijerph17218079>



5G and aircraft

From France there's news that 5G technology may interfere with the safe operation of planes.

In a memo sent to all airlines in February, the French Civil Aviation Authority advised that the radiation emitted from 5G smart phones may interfere with onboard instruments. Their signals are close in frequency and potentially even stronger than the aircrafts' altimeters used to gauge altitude.

The memo advised airlines to ensure that 5G phones are turned off or turned to flight mode during flights.

The Authority is also restricting the strength of signals from 5G base stations close to the airport.

<https://www.france24.com/en/live-news/20210216-5g-phones-may-interfere-with-aircraft-french-regulator>

Green party on 5G

On 1 February, the Green Party of California issued a 'Statement on 5G Wireless Technology Environmental Oversight'. It says, 'This infrastructure has already been brought to market with no safety testing, and no environmental agency has set limits to ensure safety for living organisms such as insects, birds or vegetation.'

The Party calls for all tiers of US government to take action to protect people and the environment and to:

1. 'first and foremost, apply the Precautionary Principle to the development and deployment of 5G, as a philosophical and legal lens to all innovations with the potential for causing harm and to;
2. 'require robust and independent scientific environmental review of 4G/5G wireless exposure and to halt FCC satellite networks on earth and in space in light of new findings on climate, pollution, and health impacts and to;
3. 'reduce exposures per the As Low As Reasonably Achievable principle and allow for local control over the deployment of 4G/5G and future generations of these technologies' small cell installations and to;
4. 'move forward with safer alternative technologies to 5G, following the lead of other municipalities and to;
5. 'adopt recommendations such as those put forth by the New Hampshire Commission on 5G in its comprehensive final report citing recent science on non-ionizing radiation health and 5G environmental impacts.'

<https://www.cagreens.org/green-party-california-statement-5g-wireless-technology-environmental-oversight>

Screen time—kids

High use of screen media by preschoolers could have multiple long-term risk, say researchers from Finland.

Dr Juulia Paavonen and team explored the effects of electronic media use on children aged 18 months and five years. They found that the majority (96%) of preschoolers used e-media for longer than the hour a day recommended by health professionals and paediatricians.

For five-year-olds, 'high levels of total screen time were associated with attention and concentration difficulties, hyperactivity and impulsivity, emotional internalizing and externalizing symptoms and conduct problems,' the authors wrote.

Paavonen's team said that this could be because young children learn through interaction with people and the environment.

'Although children's e-media use patterns might not seem problematic when considering use on a daily level, they do have risks in the long term', the authors concluded.

Niiranen J et al, 'High-dose electronic media use in five-year-olds and its association with their psychosocial symptoms: a cohort study', *BMJ Open* 2021; 11:e040848. doi: 10.1136/bmjopen-2020-040848; <https://bmjopen.bmj.com/content/11/3/e040848>

Books by Lyn McLean



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Wireless radiation and cancer

By ignoring scientific evidence that radiofrequency (wireless) radiation increases the risk of cancer, many more people are suffering from cancers than necessary, say Lennart Hardell and Michael Carlberg writing in the February issue of *Reviews of Environmental Health*.

'If the scientific evidence on cancer risks had been taken seriously lives could have been saved,' they wrote.

The authors refer to other agents whose cancer-causing effects were ignored for long periods of time. They include asbestos, tobacco, DDT, Phenoxyacetic acids, Dioxins and glyphosate.

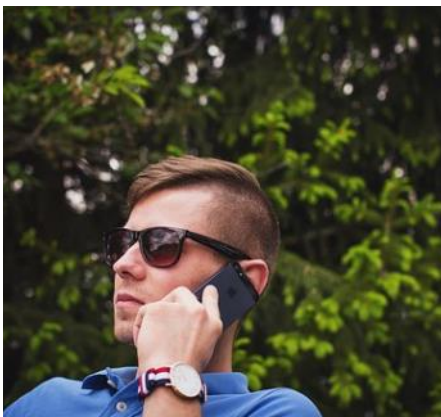
They point out that the International Agency for Research on Cancer (IARC) classified radiofrequency radiation as a Class 2B ('probable') carcinogen in 2011. '[S]ince then the evidence on RF-EMF carcinogenesis has strengthened', they say, based on studies on humans and animals and studies showing that exposure caused oxidative stress and DNA damage, both of which could contribute to cancer.

The authors believe that there is now sufficient evidence to classify radiofrequency radiation as a human carcinogen.

To explain why the risks of wireless radiation have not been properly addressed, the authors refer to vested interests in the telecommunications industry. 'Even agencies aimed at setting exposure guidelines may include pro-industry and biased scientists that obscure the true risks,' they wrote.

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) is a private organisation that publishes guidelines for exposure limits. 'Only thermal (heating) effects from RF radiation are recognized, thereby excluding all studies showing harmful effects at lower non-thermal intensities,' the paper says, even though other expert panels recommend lower levels of exposure based on non-thermal effects.

The authors analysed brain tumour data from the Swedish Inpatient Register and Causes of Death Register. They found increases in brain tumours in both men and women, particularly those aged 20 to 39. This could, they suggest, be due to heavy use of mobiles by children and teens.



'This review,' they wrote, 'gives insight into missed opportunities for cancer prevention exemplified by asbestos, tobacco, certain pesticides and low RF radiation. No doubt economic considerations are favoured instead of cancer prevention. The cancer victim is the loser in terms of suffering, life quality and shorter life expectancy.'

Lennart Hardell and Michael Carlberg, 'Lost opportunities for cancer prevention: historical evidence on early warnings with emphasis on radiofrequency radiation', *Rev Environ Health*, Feb 15, 2021, doi: 10.1515/reveh-2020-0168; <https://pubmed.ncbi.nlm.nih.gov/33594846/>

'If the scientific evidence on cancer risks had been taken seriously lives could have been saved'



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Premises Standards

Do you experience difficulties spending time in public buildings such as libraries, theatres, community centres, shopping centres, schools or hospitals?

Does the wireless radiation in these buildings trigger symptoms of electromagnetic hypersensitivity (EHS)?

Do you suffer from other environmental sensitivities that are triggered by being in public buildings?

Many of our readers have told us they do feel unwell in public buildings and often choose to stay away rather than risk the discomfort of spending time there.

Now there's something people can do about it.

The Department of Industry, Science, Energy and Resources is conducting a review of the Disability (Access to Premises – Building) Standards 2010. This document sets requirements for the construction of new and the renovation of existing public buildings. This includes rental accommodation such as hostels, boarding houses and short-term holiday accommodation.

Its aims are to 'ensure equal access to building for people with disability' and to 'help builders understand how to make buildings accessible'.

That includes disabilities such as electromagnetic hypersensitivity or other environmental sensitivities.

If you suffer from these conditions or represent someone who does, you can have input into the development of the new Standard.

Some ways that the Disability (Access to Premises) standards could better accommodate people with EHS/ environmental sensitivities are to:

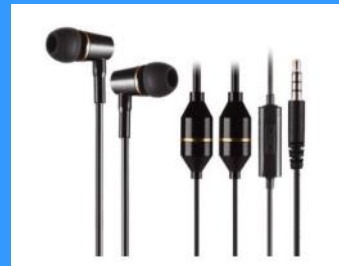
- require independent measurements of power-frequency and radiofrequency electromagnetic fields in all buildings;
- require reports of above to be accessible to the public;
- require buildings to be wired so as to mitigate low frequency magnetic fields (eg location of meter boxes, transformers, substations in relation to places where people spend time);
- require all new buildings to be hardwired for internet and landline phones;
- require avoidance of wireless technologies;
- if wireless MUST be used:
 - require restriction to areas not accessible by the public;
 - require equipment to operate at lowest possible power and for the minimum time needed;
 - require wireless equipment to be turned off when not in use;
 - ban 'free WiFi' in buildings, which increases emissions and exposure unnecessarily;
 - require wireless access points to be labelled and located away from workstations / places where people spend time.

(Continued on page 8)

Mobile phone protection



Wavewall mobile phone cases protect the head, body and the phone



Airtube headsets—no wire to conduct radiation into the head

'It aims to 'ensure equal access to building for people with disability'

(Continued from page 7)

- require easily readable signage on all entrances to buildings with WiFi / 5G/other wireless technologies advising people entering them of this fact.

In the first round of public consultation, the committee received a large number of submissions calling for changes that would allow people with environmental sensitivities to access public buildings. Among them was the following submission:

"I cannot use my public library due the high intensity radiation that exists there, if the Wi-Fi's intensity was reduced and the emitting device relocated to a more remote area it would go some way to making access more equitable."

The recommendations of the review committee will be presented to the Minister for Industry, Science and Technology and the Attorney-General in mid-2021.

Submissions close on Friday 16 April.

Feedback can be sent to the committee online, by email (PremisesStandards@industry.gov.au) by phone (02 6213 7674) or by sending a letter to:

Premises Standards Review Team,
Industry Growth Division,
Department of Industry, Science, Energy and Resources,
GPO Box 2013, CANBERRA ACT
2601

You can see more information about the review here: <https://consult.industry.gov.au/premises-standards-review-team/2020-premises-standards-review-consultation-paper/>



Special offer—book by Diana Crumpler

Prostituting Science

the psychologisation of MCS, CFS and EHS for political gain

Part personal story, part scientific backup. The anecdotal section includes the saga of descent into severe chemical, electromagnetic and light sensitivity; being placed under an involuntary treatment order for the “delusionary” belief that these afflictions are real; and eventual near full recovery courtesy of the neural protocol, dietary supplements that break the vicious cycle underlying the syndrome.

Reviewed in *EMR and Health* 2015 (“an unforgettable story”). RRP \$25. Special price \$10.50 plus postage. Further details bernie.crumpler@gmail.com

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