

# EMR and Health

Report on electromagnetic radiation, health and well-being

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## Doctors call for action on RF radiation EMR

**International doctors and medical experts endorse statement on RFR precaution.**

Medical experts, practitioners and scientists from around the world are calling for action to protect the health of humans and wildlife from radiofrequency radiation (RFR).

The '2020 Consensus Statement of UK and International Medical and Scientific Experts on Health Effects of Radiofrequency Radiation (RFR)' is an initiative of the Physicians Health Initiative for Radiation and Environment (PHIRE) and the British Society for Ecological Medicine (BSEM). It has so far been signed by medical groups representing over 3,500 medical doctors, including the Australian College of Nutritional and Environmental Medicine (ACNEM).

The document states, 'The main risks associated with exposure to such (wireless) non-ionising radiation in the peer-reviewed scientific literature include: increased cancer risk, cellular stress, increase in harmful free radicals, genetic damage, structural and functional changes of the reproductive system,



learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans.'

It discusses the fact that there is abundant research on the harmful effects of this radiation and the International Agency for Research on Cancer (IARC) has classified it as a Class 2B carcinogen.

'Mounting human epidemiological evidence of increased cancer has now been corroborated by "clear evidence" of carcinogenesis from animal studies. These include the two largest investigations ever undertaken globally, from the widely respected National Toxicology Program (USA) and Ramazzini Institute (Italy),' the statement says.

*(Continued on page 2)*

## In This Issue

Swiss doctors recommend precautions	3
Dutch Health council recommends precaution	3
Smart phones & breast cancer	4
Mobiles & thyroid cancer	4
Radiation & brain function	4
Mobiles & DNA	5
Mobiles & immune cells	6
Honey bees	6
Australian Government: 5G	7
Turn off your Camera	8



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Further, insurance companies and courts are taking the risks of exposure seriously and awarding compensation.

The Statement says that current safety levels are inadequate and highlights some of the disease processes linked with exposure. It points out the vulnerabilities of children and other hypersensitive groups, whose symptoms may include sleep problems, impaired concentration, headaches, and mood disturbance. It also highlights the contravention of Human Rights and Equalities acts and requests urgent responses from governments and health authorities to halt further deployment of radiating technology and address current public health failures.

'In my lifetime our exposure to radiofrequency radiation has increased by up to a billion billion times. There is no excuse any more for pretending this is not harmful – to us and to all life on the planet. Radiofrequency radiation is the new tobacco. Anybody sincerely reading the science should be deeply, deeply concerned,' said Dr. Damien Downing, President of The British Society for Ecological Medicine.

Dr. Erica Mallery-Blythe is the Founding Director of PHIRE and author of the Consensus Statement. She says

*' There is sufficient evidence to now classify radiofrequency radiation as a human carcinogen'*

'Progress is not progress when the cost to be paid is our health and the health of our children ... Let us stop, take a breath and use our human genius for true evolution that enhances our lives rather than sabotages them.'

'This is an important statement that should be read by all concerned with public health. Those responsible for exposing children to non-ionising radiation, especially in schools, should take immediate action to reduce exposure to non-ionising radiation of the children entrusted to their charge. There is sufficient evidence to now classify radiofrequency radiation as a human carcinogen. Action must be taken now to reduce human exposure to non-ionising radiation to as low as can be achievable, including a moratorium on the introduction of 5G,' said Anthony B. Miller, MD. Professor Emeritus, Dalla Lana School of Public Health, University of Toronto.

The statement is now open for signing by further experts, medical doctors and scientists in agreement, together with members of wider society who wish to register their concern.

PHIRE provides the following recommendations for people to reduce their exposure to RFR. Some of these recommendations are less relevant for Australians and you can see our comments and recommended solutions below in blue.

1. Mobile phones: Do not use mobile phones except for emergencies. Store them in 'airplane' or 'flight' mode (with all wireless services disabled) and switched off. They can also be used to connect to the internet via wired Ethernet adaptors whilst in airplane mode. If you feel you must use them wirelessly then using speakerphone or an air tube headset will allow you to keep the phone at a greater distance from your body, reducing the intensity of radiation exposure. [\[Some mobile phones continue to emit radiation when in airphone or flight mode.\]](#)
2. Wireless internet: Swap your wireless internet for a hardwired system by using wired Ethernet connections (adaptors are available for tablets also). Remember that because RF radiation is emitted from both devices and routers, you'll need to disable all wireless services on your router, as well as your devices. [\[In most NBN-compatible routers/modems, it's not possible to disable the wireless. Turning it off on the router/modem generally does NOT stop it emitting radiation. A better option is a radiation-free, nbn-compatible modem/router: <https://emraustralia.com.au/collections/radiation-free-equipment/products/radiation-free-nbn-network>\]](#)
3. You can reduce emissions from computers by disabling the wireless card in the device manager, by using airplane/flight mode, or by turning off wireless services (e.g. Wi-Fi and Bluetooth) in network settings.
4. Landline phones: Swap your cordless landline for a corded speakerphone. If you must have wireless capability, get an ECO DECT phone with a good quality speakerphone, so that it can be used away from your brain, and use ECO mode. This will at least ensure that wireless radiation is emitted only when the phone is in use, rather than continuously, as with other models. [\[We recommend against using a wireless landline phone at all.\]](#)
5. Smart meters: Request a hardwired (non-RF emitting) smart meter or analogue meter to ensure you and your neighbours are not subject to additional wireless radiation.

(Continued on page 8)

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## Swiss doctors recommend precautions

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Swiss Doctors for Environment Protection (AefU) have not given mobile phone radiation the all-clear and are calling for precautions to reduce people's exposure.

In an article published in *Swiss Physician*, doctors who have been monitoring relevant research, say they have been calling for lower standards, more research and public information about safer use of mobile technology.

'We regularly see people in our practices who attribute their complaints to mobile phone radiation', they wrote.

A Swiss expert group known as BERENIS said that mobile phone radiation affects the electrical activity of the brain and produced free radical damage in cells and animals. It, too, recommended precautions, including not holding mobile devices close to the body.

Not only does mobile phone radiation affect the body, but it 'leads to a massive change in lifestyle and behavior with the corresponding relevant health risk (addictive behavior, sleep disorders, depression, postural defects, myopia, developmental disorders)', the doctors wrote.

Children are most at risk because they use digital devices from a young age, while their body and brains are still growing.

The doctors conclude with the following advice.

- The AefU is concerned about the effects of mobile communications.
- It demands that precautions are applied.
- There should be more objective discussion about the risks of radiation exposure and blue light.
- People's concerns are justifiable and should not be dismissed as scare tactics, hostility to technology or ignorance.
- Children and teens are particularly vulnerable and should be protected because they use mobile devices often, for long periods of time and from an early age.

Steinera, E et al, *Swiss Physician* 2020, 101(46): 1534—1536; 1927

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## Dutch Health Council recommends precaution

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The Health Council of the Netherlands has published the report *5G and Health* which recognises the possibility of harmful effects from exposure and recommends precautions to reduce exposure.

In the document, recently translated into English, the committee made the following recommendations to the Dutch parliament:

1. Because the lower frequency bands for 5G (up to 3.5 GHz) have already been used for telecommunications applications and Wi-Fi for years without resulting in any proven adverse health effects, the committee sees no reason to stop or restrict the use of these frequency bands. It does however recommend that the exposure should be monitored before, during and after the rollout of the 5G systems. This will show to what extent exposure to radiofrequency electromagnetic fields changes as a result of the introduction of 5G and any long-term health risks can then be estimated better. ...
2. ...doing more research ...
3. ...not to use the 26 GHz frequency band for 5G for as long as the potential health risks have not been investigated
4. ...using the latest guidelines from the International Commission on Non-Ionizing Radiation Protection (ICNIRP) as the basis for exposure policy in the Netherlands. Because it cannot be excluded that exposure under the latest ICNIRP standards also has the potential to affect health, the committee recommends to take a cautious approach and keep exposures as low as reasonably achievable.

Health Council of the Netherlands, '5G and Health', file:///C:/Users/User/Downloads/Advisory-report-5G-and-health.pdf

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## Smart phones & breast cancer

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Heavy use of smart phones can increase the risk of breast cancer, say researchers from Taiwan.

The team collected information from over 200 Taiwanese patients with breast cancer and a group of healthy controls.

They found that several aspects of smartphone use increased the risk of breast cancer.

- People addicted to smart phone use had 1.4 times the normal risk.
- Those who used a smart phone for more than 4.5 minutes before bed had 5.2 times the normal risk.
- People who carried a mobile phone close to the breasts had 1.59 times the normal risk.
- Those who carried one close to the chest or waist had 4 and 5 times the normal risk.

‘Our results suggest that people with smartphone addiction could have massive radiofrequency exposure compared to people without smartphone addiction, therefore increasing their risk of developing breast cancer,’ the authors wrote.

Shih, et al, ‘The Association Between Smartphone Use and Breast Cancer Risk Among Taiwanese Women: A Case-Control Study,’ *Cancer Management and Res* 12 10799-10807, 2020

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## Mobiles and thyroid cancer

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Thyroid cancer is on the increase and mobile phone radiation could be a reason why, according to a new study from Sweden.

Michael Carlberg and team obtained data about thyroid cancer rates from cancer registries in Sweden and Nordic countries from 1970 to 2017. They found increasing rates of these cancers in both men and women. This included a 7% annual increase in thyroid cancer rates in women aged 20 to 39 and 40 to 59.

A ‘good candidate is no doubt the use of wireless phones, especially the handheld smartphone that due to the antenna position gives RF exposure to the thyroid gland. This organ is one of the highest exposed aside from the brain during the use of smartphones,’ the authors wrote.

The link between mobile phone use and thyroid cancer has been seen in several studies, including the multi-million dollar National Toxicology Program which found increased rates of C cell hyperplasia in exposed rats and mice. This is a precursor to familial medullary—and possibly other types of—thyroid cancer.

Carlberg, M et al, ‘Is the Increasing Incidence of Thyroid Cancer in the Nordic Countries Caused by Use of Mobile Phones?’ *Int J Environ Res & Pub Health*, 7 Dec 2020.

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## Radiation & brain function

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### Study 1

Does exposure to radiofrequency radiation affect the brains of children and teens?

To answer this question, researchers from five countries conducted a study on children aged 9 to 11 and teens aged 17 to 18 from the Netherlands and Spain. From information they received about the subjects, the authors calculated the amount of exposure to their brains. They also assessed how well the volunteers performed on a number of brain functions tests.

‘Our results suggest that overall estimated whole-brain RF-EMF dose and specific dose from phone calls were related to lower non-verbal intelligence in preadolescents,’ the authors said. Non-verbal intelligence includes the ability to recognise and recall visual information.

The researchers did not find any impacts on processing speed, attention, visual attention and cognitive flexibility in younger children or working memory and semantic fluency in either group.

Alba Cabre-Riera et al, ‘Association between estimated whole-brain radiofrequency electromagnetic fields dose and cognitive function in preadolescents and adolescents’, *Int J Hygiene & Environ Health*, 231 (2021), 113659.

## Study 2

Another study from Saudi Arabia looked at brain function in 251 adult mobile phone users, most of whom used their phones for more than two hours a day.

The researchers showed that cognitive performance declined with increased use of mobile phones. It also decreased when subjects kept their mobile phones near their pillow as they slept.

Based on their findings, the researchers concluded that, in order to protect against the harmful effects of mobile phone radiation on cognition, ‘strict policies must be implemented to control the use of smart phones.’

Thamir M. Al-Khlaiwi et al, ‘The association of smart mobile phone usage with cognitive function impairment in Saudi adult population’, *Pakistan J Med Sciences*, 36(7), 1628-33, 2020, DOI: <https://doi.org/10.12669/pjms.36.7.2826>

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## Mobiles and DNA

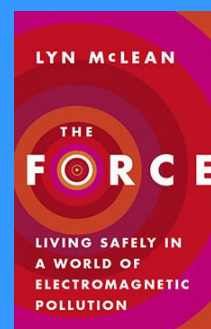
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A Greek scientist has spilt the beans on mobile phone radiation.

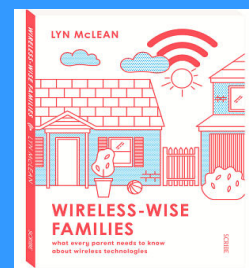
Dr Dimitris Panagopoulos, a biophysicist from Athens University, has compared the effects of mobile phone radiation to the effects of drinking too much coffee.

In a study published late last year, he tested human two groups of peripheral blood lymphocytes, white blood cells important for immunity, from six healthy volunteers. The first group of cells, he exposed to radiation from a 3G mobile phone in talk mode. The next group, he exposed to a dose of caffeine that was 290 times above the recommended limit.

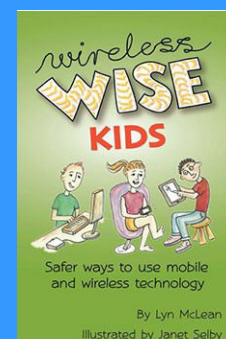
### Books by Lyn McLean



*The Force*



*Wireless-wise Families*



*Wireless-wise Kids*

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know about keeping  
your family EMR-safe

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Both exposures caused chromosome damage to the cells.

Next, he exposed cells to both the mobile phone radiation and high dose of caffeine. These cells showed a 'dramatic' increase in chromosome damage.

He concluded that exposure to levels of mobile phone radiation that were 136 times lower than international standards (ICNIRP Guidelines) caused even more damage than excessive levels of caffeine.

Based on his observations, he recommended that the standards for mobile phone radiation be lowered.

Panagopoulos, DJ, 'Comparing chromosome damage induced by mobile telephony radiation and a high caffeine dose: Effect of combination and exposure duration', *Gen Physiol Biophys* 39(6):531-544, Nov 2020, doi: 10.4149/gpb\_2020036.

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## Mobile phones and immune cells

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Another study on human lymphocyte cells, this time from the Slovak Republic, also showed damaging effects from exposure to mobile phone radiation.

Sachin Gulati and team exposed human lymphocytes cells to radiation at 1923, 1947.47 and 1977 MHz, the frequency channels used by 3G mobile phones. Exposures lasted for 1 or 3 hours.

The researchers found that frequency affected the way the lymphocytes responded, suggesting that future research should test each frequency used by a technology.

They also found a 'small but statistically significant' increase in DNA damage, with greatest effects at the 1977 MHz carrier frequency.

Sachin Gulati, S et al, 'Effects of different mobile phone UMTS signals on DNA, apoptosis and oxidative stress in human lymphocytes', *Environ Pollut* 267, 115632, Dec 2020, <https://doi.org/10.1016/j.envpol.2020.115632>

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## Honey bees

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Honey bees pollinate most of the foods we eat, so are vital for human survival. But bees, and other insects, are under threat and there is evidence that their numbers are reducing.<sup>1</sup> Daniel Favre and Associate Professor Olle Johansson hypothesises that a key factor is exposure to electromagnetic radiation.

To test this hypothesis, a transmitter was placed inside a honeybee hive. The bees began to emit strong piping sounds that usually suggest the colony is about to swarm or it is disturbed. He suggests further research regarding this connection is needed.<sup>2</sup>

1. ABC news: <https://abcnews.go.com/US/40-decline-honey-bee-population-winter-unsustainable-experts/story?id=64191609>;
2. Favre, D and Johansson, O, 'Does Enhanced electromagnetic radiation disturb honeybees' behaviour? Observations during New Year's Eve 2019', *Int J Res* 8 (11), Nov 20.

*'levels of mobile phone radiation that were 136 times lower than international standards (ICNIRP Guidelines) caused even more damage than excessive levels of caffeine.'*



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## Australian Government: 5G

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Late last year, the Australian Government released a discussion paper on 5G and invited public comment.

The paper is part of its 5G initiative to support businesses by providing grants for them to trial 5G technology. This is intended to create the commercial incentive for other businesses to adopt 5G technology and for carriers to accelerate their rollout of 5G infrastructure.

'2021 will be the "Year of 5G", and our investment in these 5G trials supports this' said Minister for Communications Paul Fletcher.

According to the Minister, 5G will bring economic benefits. '5G will have an economic effect well beyond any short-term commercial return. 5G is estimated to add \$1,300 to \$2,000 in gross domestic product per person after the first decade of the rollout,' he said.

However, there is no indication of whether, in making this claim, the Ministry has considered costs associated with the potential health impacts of exposing people to largely untested 5G radiation.

There will be two rounds of funding for this project over three years and guidelines for the grants will be developed based on feedback to the discussion paper.

### Considerations

- Why is the Ministry encouraging the rollout of 5G technology being before research has been conducted to determine that exposure to 5G signals is safe?
- Has the Minister, in making claims of 5G's economic benefit, considered the potential impact of health care and legal costs in the event that exposed workers develop health problems?
- All trials should incorporate measurements of exposure levels before and during the trial by independent experts.
- All trials should incorporate surveys of workers' symptoms before and after the trial, to be devised and undertaken by independent researchers.
- Does the Ministry have insurance cover in the event that 5G technologies that it have harmful effects on workers, the public or environment?

### More details

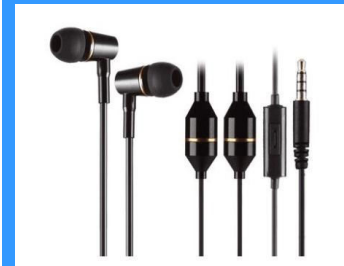
Media release: <https://minister.infrastructure.gov.au/fletcher/media-release/australias-5g-innovation-initiative>;

Discussion paper : <https://www.communications.gov.au/have-your-say/consultation-australian-5G-innovation-initiative>

### Mobile phone protection



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



Airtube headsets—no wire to conduct radiation into the head

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*Why is Ministry encouraging the rollout of 5G technology being before research has been conducted to determine that exposure to 5G signals is safe?*

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(Continued from page 2)

6. Other sources in the home: Other common household exposures may come from wireless: baby monitors and security systems, headphones/earphones, smart speakers and virtual assistants, smart TVs, TV boxes, and sticks, media players and printers, games consoles and controllers, and smart watches and fitness monitors – among various other ‘smart’ appliances, IoT devices, and wearables. In most cases there are hardwired alternatives which can be used instead, or flight modes which disable emissions when desired. [Flight mode does not prevent radiation in all devices. You will need to measure to see whether it does or doesn’t: <https://emraustralia.com.au/collections/meters-rf-radiation>]
7. Sources outside the home: Emissions from publicly placed antennas and neighbours’ homes might be possible to shield against, but expert advice and metering is recommended to best help reduce exposures.

The statement is available at: <https://phiremedical.org/2020-nir-consensus-statement-read>; <https://phiremedical.org/2020-nir-consensus-statement-sign/>

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## Turn of your camera

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A new study estimates the environmental footprint of each hour of data use. Researchers found that just one hour of videoconferencing or streaming emits 150-1,000 grams of carbon dioxide, requires 2-12 liters of water and demands a land area adding up to about the size of an iPad Mini.

But leaving your camera off during a web call can reduce these footprints by 96%. Streaming content in standard definition rather than in high definition while using apps such as Netflix or Hulu also could bring an 86% reduction.

The study, conducted by researchers from Purdue University, Yale University and the Massachusetts Institute of Technology, is the first to analyse the water and land footprints associated with internet infrastructure in addition to carbon footprints.

A number of countries have reported at least a 20% increase in internet traffic since March. If the trend continues through the end of 2021, this increased internet use alone would require a forest of about 71,600 square miles – twice the land area of Indiana – to sequester the emitted carbon, the study found.

The additional water needed in the processing and transmission of data would also be enough to fill more than 300,000 Olympic-size swimming pools, while the resulting land footprint would be about equal to the size of Los Angeles.

The team estimated the carbon, water and land footprints associated with each gigabyte of data used in YouTube, Zoom, Facebook, Instagram, Twitter, TikTok and 12 other platforms, as well as in online gaming and miscellaneous web surfing. As expected, the more video used in an application, the larger the footprints.

Because data processing uses a lot of electricity, and any production of electricity has carbon, water and land footprints, reducing data download reduces environmental damage.

“Banking systems tell you the positive environmental impact of going paperless, but no one tells you the benefit of turning off your camera or reducing your streaming quality. So without your consent, these platforms are increasing your environmental footprint,” said Kaveh Madani, who led and directed this study as a visiting fellow at the Yale MacMillan Center.

<https://www.purdue.edu/newsroom/releases/2021/Q1/turn-off-that-camera-during-virtual-meetings.-environmental-study-says.html>

## Protect your family from wireless radiation



Shielding singlets for kids

Head protection



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*‘just one hour of videoconferencing or streaming emits 150-1,000 grams of carbon dioxide, requires 2-12 liters of water and demands a land area adding up to about the size of an iPad Mini’*

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