



## **A White Paper on 5G from EMR Australia PL**

What is 5G?

How will it affect your family, your business, your learning environment, your clients?

What are your legal responsibilities?

What can you do about it?



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## What is 5G?

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5G technology is the newest way of using radiofrequency radiation to provide phone and internet connections.

Telecommunications companies advise that it offers:

- better connectivity
- greater network capacity
- lower latency
- and faster speeds.

In other words, it will allow us to do what we're already doing, but do it faster.

Initially 5G will work in connection with 4G technologies.

5G will operate at frequencies of 600-700 MHz, 3-4 GHz, 26-28 GHz and 38-42 GHz. In the future, it is expected to operate at much higher frequencies again, around 86 GHz.

5G technology will differ from previous generations of technology in other ways.

- It will use what's called 'massive MIMO' (multiple input, multiple output) antennas that allow more people to connect at the same time.
- Antennas will use 'beam steering' technology. This directs the radiofrequency signal to users and devices rather than transmitting it in all directions.

5G will be used for existing technologies, such as mobile phones and smart meters and for new technologies, such as driverless cars and virtual reality.

## 5G transmitters outside the home, school and office

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5G will be transmitted from by different types of infrastructure, including satellites, large mobile phone base stations and small base stations, such as antennas located on electricity poles.

5G networks will require more antennas than any previous network.

Because the millimetre waves of this technology don't travel very far, antennas will be located much closer together, generally from 10 metres to several hundred metres apart. That means they will be located on nearly every street, often on lampposts just outside people's homes.

Australian legislation allows telecommunications carriers and their agents to install small 5G antennas as 'low-impact facilities' without state government, council or community approval. Communities have no say about where this radiating infrastructure is to be located, even if it's planned to be installed right outside their homes, schools or office.

The Telecommunications Act 1997 (Part 1 of Schedule 3) authorises a carrier to enter on land and install a facility if the facility is a low-impact facility.

Facilities that are classified as 'low impact' are listed in the Telecommunications (Low-impact Facilities) Determination 2018. This document was updated in 2018 to include the types of antennas that will be used for 5G. You can see the Low-impact Facilities determination at <https://www.legislation.gov.au/Details/F2018L00170>.



## 5G transmitters inside the home, school and business

Whereas previous generations of wireless radiation connected people to people, 5G will connect devices to devices, known as the Internet of Things (IoT).

Literally billions of everyday devices will be able to connect with one another – the kettle to the electricity meter; the fridge to the laptop; the mobile phone to the light globe and so on. In other words, billions of devices will emit radiofrequency radiation.

This means that, if you are not discerning, there could be multiple sources of 5G radiation inside your home, school or workplace, exposing everyone within.

The decisions that you will need to make are:

- How many devices emitting 5G radiation will you allow inside your home, school or workplace?
- Is the introduction of additional sources of radiation to your home, school or business likely to affect wellbeing, performance or safety of anyone within?
- If you administer a school or business,
  - does your insurance to cover the risks of this additional exposure?
  - how will you deal with the risks?
  - how will you fulfil your legal obligations to provide a safe environment for staff and students?
- Does your school or business have a policy dealing with exposure to 5G devices?



## 10 concerns about 5G

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No one yet knows the full impacts of exposing all sectors of the population to new and different frequency bands of radiofrequency radiation. However, there are some indicators that it may not be safe and many doctors and scientists are calling for a moratorium on the rollout until more investigation has been done.

Here are some of the concerns that have been expressed about how 5G will affect people's health.

### Concern 1: There is no evidence that 5G is 'safe'

There is no science to show that exposing all sectors of the population – including pregnant women, foetuses, young children, the sick and elderly – is 'safe'.

There is no way that this radiation can be demonstrated to be safe until sufficient people have been exposed for a sufficient time to see how they react and the funding be made available so that data can be collated and published by independent researchers.

There is no guarantee that complying with Australian or international radiation guidelines guarantees that exposure is safe because concerns have been expressed about the adequacy of these documents (see point 3 below).

The Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) says that 'Current research indicates that there are no established health effects from the low exposure to the RF EME from mobile phone base station antennas' and that 'No adverse health effects are expected'. <https://www.arpansa.gov.au/understanding-radiation/radiation-sources/more-radiation-sources/mobile-phone-base-stations>) This is far from an assurance that the technology is 'safe' and no one can really be sure till much more research has been done.



## Concern 2: There is a large body of evidence that radiofrequency radiation is not safe

Thousands of peer-reviewed scientific studies show that exposure to levels of radiofrequency radiation that comply with international standards produced harmful effects on the body, including serious health problems, damaging biological changes that could potentially lead to health problems and unpleasant symptoms. They include:

- brain tumours
- sperm damage
- genetic damage
- oxidative stress
- breaches of blood-brain-barrier
- changes to hormones (melatonin)
- changes to cells, including calcium ion efflux
- headaches
- sleep problems
- depression
- fatigue
- stress
- skin problems
- memory and concentration problems
- nausea/loss of appetite
- irritability
- anxiety
- low libido
- behaviour problems /AHDH-like symptoms.

### Radiofrequency radiation and cancer

In 2011, the International Agency for Research on Cancer (IARC) classified radiofrequency radiation as a Class 2B carcinogen, in the same category as lead.

'Non-ionizing Radiation, part 2: Radiofrequency Electromagnetic Fields volume 102', IARC Monographs on the Evaluation of Carcinogenic Risks to Humans', 2011, <https://monographs.iarc.fr/wp-content/uploads/2018/06/mono102.pdf>

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*The evidence, while still accumulating, is strong enough to support a conclusion and the 2B classification. The conclusion means that there could be some risk, and therefore we need to keep a close watch for a link between cell phones and cancer risk.*

Dr Jonathan Samet, Chairman of the IARC Working Group

*Given the potential consequences for public health of this classification and findings, it is important that additional research be conducted into the long- term, heavy use of mobile phones. Pending the availability of such information, it is important to take pragmatic measures to reduce exposure such as hands-free devices or texting.*

**Christopher Wild, IARC Director**

IARC, media release, [https://www.iarc.fr/wp-content/uploads/2018/07/pr208\\_E.pdf](https://www.iarc.fr/wp-content/uploads/2018/07/pr208_E.pdf)

## 5G radiofrequency radiation and health

It's clear that at least some 5G frequencies have adverse effects on the body because these frequencies are used for military weapons (see below).

Research has shown that the millimetre waves used in 5G technology had had harmful effects on the body, as the findings of this review show.

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*Preliminary observations showed that MMW increase skin temperature, alter gene expression, promote cellular proliferation and synthesis of proteins linked with oxidative stress, inflammatory and metabolic processes, could generate ocular damages, affect neuro-muscular dynamics.*

**Di Ciaula, A, 'Towards 5G communications systems: Are there health implications?'**

Int J Hyg Environ Health. 2018 Apr;221(3):367-375. doi: 10.1016/j.ijheh.2018.01.011. Epub 2018 Feb 2, <https://www.ncbi.nlm.nih.gov/pubmed/29402696>



### Concern 3: Standards do not protect sufficiently

The Australian standard and Guidelines of the International Commission on Nonionizing Radiation Protection (ICNIRP) are based on a number of premises or assumptions that may or may not be correct. Certainly, many of these premises have been challenged by scientists based on the results of their research.

- Premis: Radiation only causes health problems if it heats the body to 1 degree Celsius.
- Premis: Risks can be calculated by averaging the impact of signals over a six-minute period.
- Premis: There is no need to protect against the occurrence of harmful biological effects.
- Premis: Nonionizing radiation does not cause chemical changes in the body.

There is evidence that the standards do not protect against the harmful effects of radiofrequency radiation:

- Harmful effects occur at levels that comply with the Australian and ICNIRP limits.
- The IARC classified the radiofrequency radiation found in the everyday environment as a Class 2B carcinogen.
- 248 scientists from 42 nations have called on the World Health Organisation and European Union to develop stricter standards for radiation protection.

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*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>

- Some countries have stricter radiation standards than the Australian standard and ICNIRP Guidelines, including
  - Russia
  - Italy
  - Switzerland

- Belgium
- Vienna
- Salzburg
- China.
- The Australian Radiation Protection (RPS3) standard is located on the website of the Australian Radiation Protection and Nuclear Safety Agency (ARPANSA) which has the following disclaimer:

ARPANSA provides this website free of charge to disseminate for the benefit of the public regulatory information and general information on the impact of radiation on health. This website is not a substitute for independent professional advice specific to your personal circumstances. Nothing contained in this site is intended to be used as medical advice and, in particular, it should not be used to diagnose, treat, cure or prevent any disease in individual cases, nor should it be used for therapeutic purposes or as a substitute for your own health practitioner's professional advice. ARPANSA does not accept any liability for any injury, loss or damage incurred by use of or reliance on the information provided on this website. ...

Users should carefully evaluate the accuracy, currency, completeness and relevance of information on this site as it relates to their own circumstances, and should obtain personalised advice from relevant professionals to ensure the guidance is appropriate to their particular circumstances before relying on it for any purpose other than the advancement of knowledge on this subject. ARPANSA cannot guarantee, and assumes no legal liability or responsibility for, the relevance, accuracy, currency or completeness of the information.

## Concern 4: Doctors and scientists are concerned about 5G radiation

### The 5G appeal

Scientists and doctors warn of potential serious health effects of 5G:

We the undersigned scientists and doctors recommend a moratorium on the roll-out of the fifth generation, 5G, for telecommunication until potential hazards for human health and the environment have been fully investigated by scientists independent from industry. 5G will substantially increase exposure to radiofrequency electromagnetic fields (RF-EMF) on top of the 2G, 3G, 4G, Wi-Fi, etc. for telecommunications already in place. RF-EMF has been proven to be harmful for humans and the environment.

<http://www.5gappeal.eu/scientists-and-doctors-warn-of-potential-serious-health-effects-of-5g/>

### International Society of Doctors for Environment

In 2018, the International Society of Doctors for Environment called for a moratorium to health the rollout of 5G networks in European Countries.

Previous evidences led the IARC in the year 2011 to classify the RF-EMF as possibly carcinogenic to humans (Group 2B). After the year 2011, more recent studies strengthen the link between RF-EMF and cancer onset and highlighted new possible health risks mainly in terms of reproductive, neurologic and metabolic diseases.

Furthermore, specific preliminary evidence showed the exposure to frequencies over 30GHz could alter gene expression, increase the temperature of the skin, stimulate cell proliferation, alter the functions of cell membrane and neuro-muscular systems and are able to modulate the synthesis of proteins involved in inflammatory and immunologic processes, with possible systemic effects.

Further studies are certainly needed in order to better and fully explore the biological effects caused by the exposure to these specific RF-EMF frequencies accompanied by high exposure density.

The available evidence, however, is sufficient to justify the possibility of health effects (in particular on the more vulnerable subjects, as children and pregnant women) secondary to a technological “experimentation” conceived with commercial aims.

We believe it should be unethical to ignore the available evidence waiting a possible “a posteriori” demonstration of health damages in the presence of a present and potentially manageable risk for public health. Thus, in the respect of the precautionary principle and of the WHO principle “health in all policies”, we believe suitable the request of a standstill for the “5G experimentations” throughout Europe until an adequate and active involvement of public institutions operating in the field of environmental health (health ministry, environmental ministry, national environmental and health agencies) will be effectively planned.

International Society of Doctors for Environment, ‘5G networks in European Countries: appeal for a standstill in the respect of the precautionary principle April 2018’, [http://www.isde.org/5G\\_appeal.pdf](http://www.isde.org/5G_appeal.pdf)

### Cyprian medical practitioners

The Pancyprian Medical Association and the National Committee on Environment and Child Health have called on their government to implement precautions to protect people from 5G. In a joint statement, published in September 2019, the agencies expressed ‘deep concern’ about the amount of additional exposure 5G will bring and the potential additional health problems it could cause.

One of the major problems associated with 5G, they said, is the lack of reliable studies showing that it is safe and the lack of data about how the population will be exposed.

The statement calls on Parliament to:

- provide estimates of exposure, documentation that guarantees health and effective methodology for measuring, reporting and controlling exposure
- establish legislation to reduce people’s exposure and protect children
- create 5G-free zones in kindergartens, schools and playgrounds
- use fibre optics for essential high-speed uses, such as medical applications
- ban the use of wireless internet and wireless devices such as tablets and mobile phones in kindergartens and primary schools, following the example set by the French government.
- conduct an educational (‘Right-to-Know’) campaign informing the public about the potential health impacts of exposure and encouraging them to curb exposure.

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*We are particularly concerned about abusing IoT (Internet Of Things) with unnecessary applications (eg mobile home screening, baby diaper change constantly irradiating the child). The public MUST be informed that this will be done with significant additional radiation in the home...*

<http://paidi.com.cy/common-positions-5g-2019/> (in Greek)

## Concern 5: Insurers have identified risks from 5G networks

In a recent report, insurer Swiss Re identified a number of risks from the use of 5G technologies that could affect insurance. The report stated:

‘An update in liability claims could be a potential long-term-consequence ... potential claims for health impairments may come with a long latency.’

‘Cyber exposures are significantly increased with 5G, as attacks become faster and higher in volume.’

The report stated that heavy internet use & social media means that people are being constantly observed, analysed, compared & rated.

Swiss Re, ‘SONAR’, New Emerging Risk Insights’,

<https://www.swissre.com/institute/research/sonar/sonar2019.html>

## Concern 6: Governments and councils are saying no to 5G

### Brussels

On April 1 2019, *The Times* reported that the government of Brussels will not relax its standards of 6V/m, much lower than international standards, to accommodate 5G.

### Switzerland

In Geneva, politicians called for a moratorium on the rollout of 5G. *Le Temps* 11.4.19



They also called for a ban on construction of more 5G antennas by freezing permits for carriers. *Le News* 2.5.19

Politicians in Vaud called for a moratorium on installation of 5G antennas until they receive the results of a study by the Federal Office for the Environment. *Le Temps*, 9.4.19.

### USA

In October 2019 the city of Encinitas in San Diego introduced restrictions on locations where 5G antennas can be placed. 5G antennas are not to be installed in residential zones, parklands, fire risk areas and within 500 feet (152 metres) of a day care centre, school or residence in a non-residential zone.

However, telecommunications companies will have the right to apply to council for an exemption to the policy. *San Diego Union Tribune*, 31.10.19.

### Ireland

In 2019 the Irish county of Clare approved the following motion:

‘Clare County Council In light of a recent appeal to the EU from 180 scientists and doctors from 36 countries warning about the danger of 5G, which will lead to a massive increase in involuntary exposure to electromagnetic radiation, that Clare County Council in exercising its responsibility to protect the environment and the public from harm:

1. Opposes the roll-out of 5G in the County; and
2. Calls on CommReg to deny licensing for its roll-out; and
3. Calls on the Minister for Communication, Climate Change and the Environment, to establish a working group to establish the facts about the radiation impact of 5G on the environment & human health due to the current questionable scientific knowledge.’

<https://www.clarecoco.ie/your-council/meetings/minutes/clare-county-council-minutes/2019/june-monthly-meeting-2019-33830.pdf>, p 14.

### Australia

Randwick Council resolved that TPG’s ‘proposed roll out came at a time when international research reported a link between cell tower radiation and the development of cancer. Accordingly, Council called on the federal Government to intervene and suspend the roll out, pending a review of the relevance of the international findings to the safety of residents in urban Australia.’

Randwick City Council, 'TPG small cell towers will not roll out' Media Release 18.03.19,  
<http://www.randwick.nsw.gov.au/about-council/news/news-items/2019/march/tpg-small-cell-towers-will-not-roll-out>

## Concern 7: 5G frequencies are used for military weapons

Frequencies above 20 GHz are used for military weaponry such as the Active Denial System, used to disperse crowds.

- <http://www.australiandefence.com.au/2252AF20-1DAF-11DE-919D0050568C22C9>
- <https://www.smh.com.au/world/active-denial-ray-gun-20070125-gdpbpc.html>
- <https://jnlwp.defense.gov/About/Frequently-Asked-Questions/Active-Denial-System-FAQs/>
- <https://www.youtube.com/watch?v=yJdl4cPVL0Y>



## Concern 8: Some people are more vulnerable to radiation than others

Foetuses and children are generally thought to be much more vulnerable to radiation than adults because:

- they have thinner skulls, so that radiation penetrates further into their brains
- their brains still developing
- their developing cells are more vulnerable
- their bone marrow more vulnerable
- they have a greater lifetime of exposure
- they can't make informed decisions about use.



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*Children are more vulnerable than adults to environmental risks because of a number of factors.*

*WHO, Children's Environmental Health, Environmental Risks,*  
<https://www.who.int/ceh/risks/en/>

Some adults are more vulnerable to radiation than others.

Studies show that 3% or more of the population is sensitive to electromagnetic radiation and this condition is often called Electromagnetic Hypersensitivity.

Other vulnerable adults include the sick, the elderly and pregnant women.

The International Classification of Diseases (ICD-10), a global standard for diagnostic health information for health practitioners, lists exposure to radiofrequency radiation as a classifiable condition.

(ICD-10-CM Code W90.0 'Exposure to radiofrequency', <https://icd.codes/icd10cm/W900>)

## Concern 9: 5G contravenes legislation

In a legal opinion commissioned by the Danish Institute for Public Health, the Council for Health-Safe Telecommunications, the EHS association and the Danish Health Association May Day, Danish attorney Christian F Jenson states that activating the 5G telecommunications network would contravene a number of laws and could well cause harm.

After reviewing the scientific evidence, he concluded that there is clear evidence that radiofrequency radiation, even at levels that comply with the country's standard:

- causes DNA damage to humans and animals
- can be carcinogenic
- can damage birds and their habitats
- can harm insects
- causes damage to plants.

Children, he said, are particularly vulnerable and exposure has been linked to behavioural problems, autism and 'reduced perception'.

Jensen also concluded that 'the 5G system ... poses a danger to humans' and that, as this information is known to the Danish government, it 'would incur liability'. It can be inferred that the same would apply to other governments.

The paper states, 'It is the conclusion of this legal opinion that establishing and activating a 5G-network, as it is currently described, would be in contravention of current human and environmental laws enshrined in the European Convention on Human Rights, the UN Convention on the Rights of the Child, EU regulations, and the Bern- and Bonn-conventions. The reason is the very significant body of scientific documentation available, showing that radiofrequent electromagnetic radiation is harmful and dangerous to the health of humans (particularly children), animals and plants. This also applies when the radiation remains within the limits recommended by ICNIRP and currently used in Denmark as well as broadly within the EU. The exact damaging effects to health from 5G are not known, since the system is not exactly defined, though given the background of the current research on the effects of radiofrequent electromagnetic radiation on, e.g. the bodies of humans and animals, including the provocation of DNA damage and oxidative stress, it appears highly unlikely that it would not lead to similar harm as the current systems, particularly since it is based on the same basic form of radiation.'

[https://drive.google.com/file/d/1ArfyCrCD\\_ZFb1gp0OhuTBdZSC9t9tj9R/view](https://drive.google.com/file/d/1ArfyCrCD_ZFb1gp0OhuTBdZSC9t9tj9R/view)

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*'one thing is certain: 5G will generate a great deal of work for lawyers'*

**Tad Simons, Legal Executive Institute**, 'The Great Rollout: Will 5G Be a Boon for Lawyers?' 23 July 2019,

<https://www.legalexecutiveinstitute.com/5g-lawyers-boon/>

## Concern 10: 5G contravenes the 'precautionary approach'

A large body of legislation in Australia and overseas requires the application of a precautionary approach to potential risks.

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*The principle states that in the case of serious or irreversible threats to the health of humans or the ecosystem, acknowledged scientific uncertainty should not be used as a reason to postpone preventive measures.*

**WHO, The precautionary principle: Public health, protection of children and sustainability,**

<https://www.who.int/hia/examples/overview/whohia076/en/>

There are many situations where authorities have considered agents to be safe that were later proven to be harmful. They include, PCBs, CFCs, asbestos, medical x-rays, benzene and cigarettes.



Taking action to reduce the obvious risks of radiofrequency radiation is a common-sense approach endorsed by many authorities worldwide.

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*In our judgement, the human and experimental evidence, taken together, is "clear" enough to support using the precautionary principle to justify reducing exposures, where feasible, and to review the evidence for the existing exposure limits, which, as you know, are based on thermal effects only.*

**Professor Jacqueline McGlade, Director of European Environment Agency, 2007, Precaution in Action – Global Public Health Advice**

Following BioInitiative 2007 Dr. Gerd Oberfeld, MD,

[https://bioinitiative.org/wp-content/uploads/pdfs/sec22\\_2012\\_Precaution\\_in\\_Action\\_Global\\_advice.pdf](https://bioinitiative.org/wp-content/uploads/pdfs/sec22_2012_Precaution_in_Action_Global_advice.pdf)

## Other concerns about 5G

The rollout of 5G technology will allow people to send and receive more data faster than ever before. This poses a number of significant risks for society as a whole.

### Cyber risks

Insurer Swiss Re analysed the potential risks of 5G networks and concluded 'Cyber exposures are significantly increased with 5G, as attacks become faster and higher in volume.'<sup>1</sup> In other words, because of faster network speeds, more damage can be done in a shorter timeframe.

### Reduced privacy

Wireless devices, such as 'smart' meters, can be hacked. A report by Nigel Phair from the Centre for Internet Safety at the University of Canberra said that smart meters that send information both to and from the household, as is the case with smart electricity meters, can reveal information about whether occupants are home, household activities, and even what television program the family is watching.<sup>2</sup> This is a risk for privacy and security.

### Other social problems

The use of wireless technology has been associated with a wide range of social problems<sup>3</sup>, that 5G technology is likely to amplify, including:

- addiction
- reduced happiness
- increased depression
- anger
- cyber bullying
- easy access to pornography
- reduced interpersonal relationship skills
- disconnection from nature.

### Educational risks

The use of wireless technology has been shown to have negative effects on learning, that 5G technology is likely to amplify, such as:

- impaired memory and changes in emotional learning<sup>4</sup>
- reduced comprehension
- reduced attention/concentration
- reduced creativity

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<sup>1</sup> Swiss Re, 'SONAR', New Emerging Risk Insights', <https://www.swissre.com/institute/research/sonar/sonar2019.html>

<sup>2</sup> ABC News, 27.04.17

<sup>3</sup> Mari Swingle, 'I-Minds-how cell phones, computers, gaming, and social media are changing our brains, our behaviour, and the evolution of our species', Canada, New Society Publishers, 2016 and Lyn McLean, 'Wireless-Wise Families', Melb, Scribe, 2017.

<sup>4</sup> Narayanan, SN et al, 'Radiofrequency electromagnetic radiation-induced behavioural changes and their possible basis', *Environ Sc and Pollution Research*, 2019 Aug 28. doi: 10.1007/s11356-019-06278-5

- learning disabilities.

## Behaviour problems

The use of wireless technology has been linked with behavioural problems that 5G technology is likely to amplify, such as:

- hyperactive behaviour
- autistic behaviours.<sup>5</sup>

## Mental health problems

The use of wireless technology has been associated with mental health problems, that 5G technology is likely to amplify, such as:

- addiction
- reduced happiness
- increased depression
- increased anxiety.

## Financial costs

If all Australians are exposed to radiating 5G infrastructure and if that radiation is ultimately harmful, then the costs to society will include:

- increased health care costs
- increased insurance costs<sup>6</sup>
- reduced income for affected workers
- litigation costs
- costs of replacing unsafe with safe technology.

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<sup>5</sup> Sage C and Burgio E. 'Electromagnetic Fields, Pulsed Radiofrequency Radiation, and Epigenetics: How Wireless Technologies May Affect Childhood Development', *Child Dev.* 2018 Jan;89(1):129-136. doi: 10.1111/cdev.12824. Epub 2017 May 15.

<sup>6</sup> Swiss Re, 'SONAR', New Emerging Risk Insights', <https://www.swissre.com/institute/research/sonar/sonar2019.html>

## How can you protect your home from 5G radiation?

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There are a number of ways you can protect yourself and your household from 5G radiation.

Most people who contact us want to shield their home from 5G signals generated from antennas in their neighbourhood.

However, that is **NOT** the place to start and this is why:

1. If you were to completely shield your home, you would block out external 5G signals **BUT** you would trap the radiation from all your wireless devices inside your home. These would reflect on the shielded surfaces, potentially increasing your exposure.
2. The **MAIN** source of 5G radiation is likely to be the appliances **INSIDE** your home. Because 5G is intended to power the Internet of Things, your modems, your routers, your wireless devices and many of your electrical appliances will emit 5G signals.

So, to protect your home and family from 5G radiation, these are the steps to take.

1. Measure the wireless radiation in your home to identify **ALL** sources. You can do this with our [Acoustimeter](#) or [Acousticom 2](#).
2. Replace wireless routers and modems with [radiation-free, nbn-compatible equipment](#). (Don't just turn off the 'Wifi' function on your modem. This doesn't always stop the radiation.)
3. Turn off all other sources of radiation.
4. When all internal sources of radiation have been dealt with, measure the fields in your home again to identify the walls, windows or ceilings with the highest exposures. This is where the radiation is entering your home.
5. You can shield these areas with [shielding paints](#), [curtain fabrics](#) and [window films](#).

## What else can you do about 5G?

If you're concerned about the risks of 5G radiation, there are a number of positive things you can do.

### 1. Tell your friends

When you find reliable, referenced material about 5G, let your friends and contacts know about it.

Forewarned is forearmed.





## 2. Tell your politicians

If you don't want to be exposed to radiofrequency radiation from 5G infrastructure or devices, let the decision-makers know how you feel.

You could write to:

1. Your local federal MP
2. The Minister of Communications
3. The Shadow Minister of Communications
4. Your local council (general manager and all councillors)
  - asking for their support
  - ask them to write to federal politicians and authorities.
5. Your local electricity distributor,
  - Let them know you don't want their poles used to support radiating 5G infrastructure
  - You can find a list of the electricity distributors throughout Australia at <https://www.energybilldoctor.com.au/electricitydistributors>

You may feel that your comments won't make a difference, but remember that one letter represents the opinions of 100 people.





### 3. Choose radiation-free options for home, school or business

If you're like most people, the majority of the radiation in your home, school or business is likely to come from your own wireless equipment:

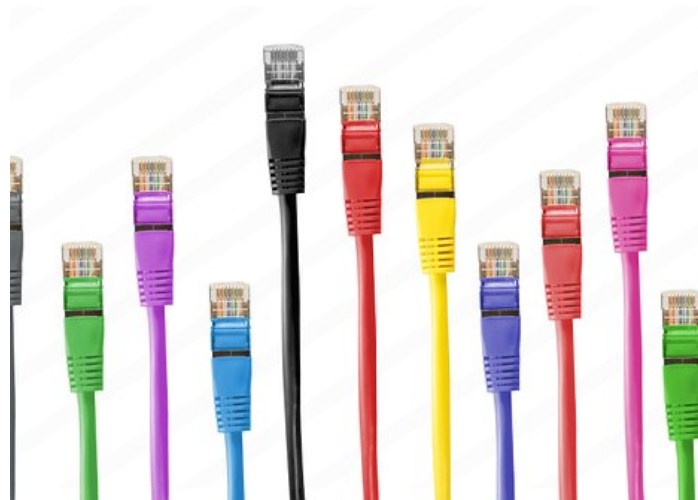
- mobile and cordless phones
- wireless modems
- tablets
- baby monitors
- smart or 'remote' appliances (eg smart meters)
- and other wireless devices.

Ultimately, all this technology – and more – will be operating at 5G.

If you don't want 5G in your home, you can choose to have radiation-free networks. EMR Australia provides radiation-free desktop and laptop computers and network packages for nbn that enable the use of a landline.

You can see how EMR Australia can help you establish these networks [here](#).

Once your home, school or business is radiation-free, you can shield radiation from external 5G sources and EMR Australia can help you with this, too.



## 4. Don't buy 5G

If you don't want 5G antennas irradiating your home, don't buy the 5G devices, including mobile phones, that the 5G network supports.

As we saw earlier, there are plans to create an Internet of Things (IoT) both inside and outside the home. This means that many household and office appliances – fridges, washing machines, light globes and so on – will be transmitting radiation so as to connect with each other or with your mobile phone.

As a consumer, you can choose not to buy them.

Whenever you buy any new appliance, check to see whether it will emit radiation. Clues to radiation-emitting appliances are terms such as:

- MHz
- GHz
- smart
- remote
- wireless.

Manufacturers respond to consumer demand, so help create a demand for safe technologies.

Don't buy 5G. Buy zero G!



## Other resources on 5G

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This site shows you where 5G is being rolled out in cities across the world: 5G map

<https://www.speedtest.net/ookla-5g-map>

‘Appeals that matter or not on a moratorium on the deployment of the fifth generation, 5G, for microwave radiation’, by Lennart Hardell and Rainer Nyberg, *Mol Clin Oncol*. 2020 Mar; 12(3): 247–257, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7016513/>

‘Effects of 5G wireless communication on human health, Briefing to the European Parliament’ [https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/646172/EPRS\\_BRI\(2020\)646172\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2020/646172/EPRS_BRI(2020)646172_EN.pdf)

‘5G - is it safe?’ - A presentation given by Professor Dariusz Lezczynski in New Zealand, November 2019.

<https://betweenrockandhardplace.files.wordpress.com/2019/11/leszczynski-hawkes-bay-new-zealand-november-2019.pdf>

‘5G: The unreported global threat’, RT America, <https://www.youtube.com/watch?v=PqWpDIQ2Vuk>

‘5G Beware’, Greater Earth Media, <https://www.youtube.com/watch?v=W2EyQp7GP68>

‘Eight Repeatedly Documented Findings Each Show that EMF Safety Guidelines Do Not Predict Biological Effects and Are, Therefore Fraudulent: The Consequences for Both Microwave Frequency Exposures and Also 5G Second Edition’, May 23, 2019 Martin L. Pall, PhD, Professor Emeritus of Biochemistry and Basic Medical Sciences, Washington State University, <https://www.ahava528.com/wp-content/uploads/2019/05/SafetyGuidelineFraud2.pdf>

Professor Olle Johansson, ‘5G: Johansson O, "To bee, or not to bee, that is the five "G" question’, Newsvoice.se 28/5, 2019, <https://newsvoice.se/2019/05/5g-question-olle-johansson/>

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<https://emraustralia.com.au/pages/5g>

And you can subscribe to EMR Australia's regular news updates [here](#):

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## About the Author

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EMR Australia PL is Australia's leading resource for creating EMR-safe homes, businesses and learning environments.

Established in 2003, EMR Australia helps Australians, no matter where in Australia they live or work, to understand and reduce their exposure to this Class 2B carcinogenic environmental pollutant.



### Lyn McLean, founder and Managing Director

Lyn McLean is Australia's foremost expert on understanding and reducing exposure to electromagnetic exposures in homes, businesses and learning environments.

She has been working in this field since 1996 and brings a commitment to helping people and over two decades of experience to her work.

Lyn has been involved in or commented on the major political and regulatory developments of the last two decades.

- She is the author of four books on electromagnetic radiation:
  - 'Wireless-wise Families', Scribe, 2017
  - 'The Force - living safely in a world of electromagnetic pollution', Scribe, 2011;
  - 'Wireless-wise Kids - safer ways to use mobile and wireless technology', 2013.
- She is co-author of the paper 'Measurement and analysis of power-frequency magnetic fields in residences: Results from a pilot study', Malka N Halgamuge and Lyn McLean, *Measurement* 125(2018):415-424.
- She has published a regular report, 'EMR and Health', since 1996.
- She was Executive Officer of the EMR Association of Australia and Secretary of its forerunner, the EMR Alliance for nine years.
- She was Deputy Chair, of the ACIF Committee that developed the Code for the Deployment of Radiocommunications Infrastructure - and Deputy-Chair of the Communications Alliance committee that revised this Code in 2010-2011.
- She was a member of the Department of Health's EME Reference Group, hosted by ARPANSA, for over 15 years.
- She was a member of the local government committee that developed the Model Telecommunications and Radiocommunications DCP.
- She was a member of the Consultative Group for the development of the Australian Standard for ELF 2004-2011.
- She is a qualified trainer and educator; who has presented at conferences, Senate Inquiries, committees and numerous public meetings.
- She has written extensively for newsletters and magazines and given media interviews.