

EMR and Health

Quarterly report on electromagnetic radiation, health and well-being

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Reinventing wires

Wired networks have advantages over wireless networks, according to a new report from the US.

A report released in late January by the National Institute for Science, Law and Public Policy says that wireless infrastructure does not provide reliable, long-term and affordable internet accessibility and will not support people's data needs of the future. 'Re-Inventing Wires: The Future of Landlines and Networks', by Timothy Schoechle, PhD, argues that wired connections need to be installed to meet the future needs of our society.

Dr Schoechle says, 'This report asserts that first and foremost, the public needs publicly-owned and controlled wired infrastructure that is inherently more future-proof, more reliable, more sustainable, more energy efficient, safer, and more essential to many other services. Wireless networks and services, compared to wired access, are inherently more complex, more costly, more unstable (subject to frequent revision and "upgrades"), and more constrained in what they can deliver.'

Schoechle says that wired networks are superior to wireless networks in terms of cost and performance. He says that the best option for phone and internet connections is to bring fibre optic cables directly to the home or business. The next best option is to bring these cables as close to the user as possible and to complete the connection with a copper 'tail'. Wireless connections, he said, should only be used as a 'last resort or an ancillary



service'.

The building of infrastructure to support wireless networks is questionable, according to Schoechle. He says, 'At least a third, and possibly more than half of the traffic on the Internet has come to be characterized as worthless or bogus, yet increasingly more infrastructure must be built to support it and increasing amounts of energy are wasted by it.'

The report raises concerns about the health impacts of wireless technology. 'There is growing evidence that our society's growing addiction to wireless technologies could bring a lurking health time bomb such as was the case historically with tobacco, lead, and asbestos,' it says.

The report is also critical of the way in which the internet is being used for commercial purposes. "The Internet has become one of the defining technologies of our society. It is our central medium for commerce and communication—but more importantly—for our public discourse, engagement, and democratic governance. However, it has been hijacked by the commercial motivations that have come to re-define and constrain the availability, quality, content, and media of high-speed access in the United States."

The report is available online at: <http://electromagnetichealth.org/wp-content/uploads/2018/01/ReInventing-Wires-1-25->

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Authorities say reduce exposure

The Cyprus Medical Association, the Vienna Medical Chamber and the Cyprus National Committee on Environmental and Children's Health released a Common Position Paper, also known as the Nicosia Declaration on Electromagnetic Fields/Radiofrequencies, advising members of the public to reduce exposure to wireless radiation because of the risks it poses to health.

'Potential health Impacts of nonionizing radiation ... include carcinogenicity (class 2B, IARC 2011), developmental neurotoxicity, effects on DNA, on fertility', the Paper states. It also refers to evidence that exposure increases oxidative stress, causes DNA breaks, impairs learning and memory and can affect the developing brain and nervous system of the young. 'We believe that substantial scientific evidence of risks for foetuses and children does exist, indicating damages that could be serious and in some cases irreversible. This evidence is strong enough to support precautionary actions and to establish activities and rules for a careful handling.'

'Potential health Impacts ... include carcinogenicity (class 2B, IARC 2011), developmental neurotoxicity, effects on DNA, on fertility.'

The Paper lists five recommendations for addressing the risks of exposure.

1. '...guidelines and regulatory standards need to be revised and strengthened to reflect current scientific knowledge, usage patterns, exposures and the special children's vulnerability.' This, they say, will encourage manufacturers to design safer technologies.
2. 'Decision makers especially in Education and the Health Sector need to be aware of risks and safe alternatives of the Technology, must consider adequately Health concerns, children's vulnerability and support safe environment in schools, day-care and paediatric units.'
3. 'Exposure at home and schools (where children depending on their age spend at least 60—90% of their time) can and must be reduced by minimising the use of mobile phones and other wireless devices. By applying safer technologies, like wired (ethernet) connection to Internet or optical fibers instead of Wi-Fi, there will be no loss of conform. Schools should avoid Wi-Fi.'
4. Medical professionals, especially paediatricians and obstetricians should be adequately educated about the biological effects ... of electromagnetic radiation and advise their patients on how to minimize their exposures.'
5. The public have the right to be fully informed about potential health risks from all wireless and EMF transmitting devices/infrastructures and educated on risk reduction strategies. Parents need to be educated and empowered to demand and make personal choices, to minimize their fetus and child exposures especially in homes and schools.'

The Paper presents 16 practical rules for helping to achieve these outcomes, advising people:

- that children under 16 should use mobile phones only for emergencies.
- that wireless devices are not toys and should not be used for entertainment. They should only be used in flight mode with all wireless functions turned off.
- to limit calls—text or use a landline instead of a mobile.
- to keep the phone away from the body—use speaker function or a headset.
- not to use mobile phones in vehicles (car/bus/train) without an external antenna.
- not to text while driving.
- to use wired phones and internet connections.
- to turn off wireless function on phones as much as possible.
- to reduce the number of phone apps.
- not to call in low reception areas.
- to choose phones with a low SAR rating.
- to protect pregnant women by keeping phones at least 1 metre away from them.
- to beware of wireless baby monitors.

California's mobile phone warning

The California Department of Public Health has released a 'guidance document' with information about radiofrequency radiation, its potential health effects and advice about how to reduce exposure.

Entitled, 'How to Reduce Exposure to Radiofrequency Energy from Cell Phones', it offers the following advice.

Keep your phone away from your body. Keeping your phone just a few feet away from you can make a big difference.

- When you talk on your cell phone, avoid holding it to your head—use the speakerphone or a headset instead. Wireless (Bluetooth) and wired headsets emit much less RF energy than cell phones.
- Send text messages instead of talking on the phone.
- If you are streaming or if you are downloading or sending large files, try to keep the phone away from your head and body.
- Carry your cell phone in a backpack, briefcase, or purse; NOT in a pocket, bra or belt holster. Because your phone's antenna tries to stay connected with a cell tower whenever it's on, it emits some RF energy even when you are not using it. It does not emit RF energy when it's in airplane mode. (Airplane mode turns off cellular, Wi-Fi, and Bluetooth.)

Reduce or avoid using your cell phone when it is sending out high levels of RF energy. This happens mainly when:

- You see only one or two bars displayed. Cell phones put out more RF energy to connect with cell towers when the signal is weak. If you must use your phone when the signal is weak, try to follow the other guidance on this page.
- You are in a fast-moving car, bus, or train. Your phone puts out more RF energy to maintain connections to avoid dropping calls as it switches connections from one cell tower to the next unless it is in airplane mode.
- You are streaming audio or video, or downloading or sending large files. To watch movies or listen to playlists on your phone, download them first, then switch to airplane mode while you watch or listen.

Don't sleep with your phone in your bed or near your head. Unless the phone is off or in airplane mode, keep it at least a few feet away from your bed.

Take off the headset when you're not on a call. Headsets release small amounts of RF energy even when you are not using your phone. Don't rely on a "radiation shield" or other products claiming to block RF energy, electromagnetic fields, or radiation from cell phones. According to the U.S. Federal Trade Commission, products that interfere with the phone's signal may force it to work harder and emit more RF energy in order to stay connected, possibly increasing your exposure.

What about children?

Children may be more at risk for harm from exposure to RF energy because:

- RF energy can reach a larger area of a child's brain than an adult's brain.
- A child's brain and body grow and develop through the teen years. During this time, the body may be more easily affected by RF energy and the effect may be more harmful and longer lasting.
- A child who uses a cell phone will have many more years of exposure to RF energy in his or her lifetime than someone who started using a cell phone as an adult.

There is not a lot of research about the effects of cell phone RF energy on children or teenagers, but a few studies have shown that there may be hearing loss or ringing in the ears, headaches, and decreased general well-being.

The full text can be found at: <https://www.cdph.ca.gov/Programs/CCDPHP/DEODC/EHIB/CDPH%20Document%20Library/Cell-Phone-Guidance.pdf>

Magnetic fields and miscarriage

A pregnant woman's exposure to high magnetic fields may increase her risk of miscarriage, according to a study from the Kaiser Foundation Research Institute in California, led by De-Kun Li (pictured).

'In this study, we found an almost three-fold increased risk of miscarriage if a pregnant woman was exposed to higher MF [magnetic field] levels compared to women with lower MF exposure,' the authors wrote. ¹



Magnetic fields are emitted by all electrical equipment, including power lines, wiring, meter boxes and sometimes conductive pipes. To find out whether these fields had an adverse effect on pregnancy, the authors asked 915 pregnant women to carry a magnetic field meter with them and keep a diary of their activities for a 24-hour period. They also interviewed the women to see whether the measurement day was typical and, therefore, whether the measurements represented normal exposures.

Based on the measurements the women recorded, the authors allocated them to a four exposure groups: less than 2.5 mG; 2.5 – 3.6 mG, 3.7 – 6.2 mG and over 6.3 mG. All these fields are well below the 2000 mG general

public exposure set by ICNIRP (International Commission on Nonionizing Radiation protection), endorsed by the WHO and accepted by Australia and many other countries around the world.

The study showed that women in the highest three exposure groups had almost 48% more risk of miscarriage, compared to women in the lowest exposure group.

The findings are in line with several other published studies, including a 2002 study by De-Kun Li, which found a link between magnetic field exposure and miscarriage. In that study, involving 969 pregnant women, Li's team found an increased risk of miscarriages when the women were exposed to magnetic fields of 16 mG and the likelihood of miscarriage was increased among women in the early stages of pregnancy or who had suffered previous miscarriages. The paper concluded, 'Our findings provide strong prospective evidence that prenatal maximum magnetic field exposure above a certain level (possibly around 16 mG) may be associated with miscarriage risk.' ²

The benefit of the present study over much previous research is that it measures actual exposure levels, rather than relying on estimates of exposure, based on wiring configurations or job title. 'This, it is not surprising that many of the past studies failed to detect MF health effects,' the authors wrote.

The study not only illustrates the importance of pregnant women reducing exposure to magnetic fields, but also the necessity to revise international exposure guidelines.

'We hope that the finding from this study will stimulate much-needed additional studies into the potential environmental hazards to human health, including the health of pregnant women,' Dr Li said.

1. De-Kun Li et al, 'Exposure to Magnetic Field Non-Ionizing Radiation and the Risk of Miscarriage: A Prospective Cohort Study', *Scientific Reports*, 2017; 7 (1) DOI: [10.1038/s41598-017-16623-8](https://doi.org/10.1038/s41598-017-16623-8); Kaiser Permanente, press release, 13.12.17
2. De-Kun LI et al, 'A population-based prospective cohort study of personal exposure to magnetic fields during pregnancy and the risk of miscarriage,' *Epidemiology* 13(1):9-20, 2002.

'In this study, we found an almost three-fold increased risk of miscarriage if a pregnant woman was exposed to higher MF [magnetic field] levels compared to women with lower MF exposure'



RESEARCH UPDATES

ELF fields (from electrical sources)

Amyotrophic lateral sclerosis

Researchers from the Netherlands reviewed relevant research and found that an increased risk of Amyotrophic lateral sclerosis (ALS) occurred in workers who were occupationally exposed to higher magnetic fields. (Huss A et al, *Bioelectromagnetics* Jan 19, 2018.)

Alzheimer's Disease

Workers exposed to high magnetic fields, including welders, electric utility workers, train drivers and sewing machine operators, may also have a higher risk of Alzheimer's Disease. To evaluate the connection, scientists from Iran and Switzerland conducted a review of 20 papers and found that people with higher exposures had 1.4 to 1.8 times the normal risk of Alzheimer's Disease. (Jalilian, H et al, *Neurotoxicology*, Dec 24, 2017.)

Memory and learning

Researchers exposed mice to a 7.5 kHz magnetic field for five weeks and found some evidence of learning and memory impairment, possibly caused by inflammation in the hippocampus. (Kumari, K et al, *PLoS One*, 12(12) Dec 4, 2017.)

RF/wireless radiation

Breast cancer

Women who are susceptible to breast cancer 'should avoid using their smartphones, tablets and laptops at night,' according to researchers from Iran. The authors said that the blue light and RF radiation from these devices can interfere with circadian rhythms, suppressing melatonin and amplify the risk of breast

cancer. (Mortazavi, SAR and Mortazavi, SMJ, *Iranian Journal of Basic Medical Sciences*, 30 Dec 2017.)

Stress

Research from Turkey has shown that long-term exposure to mobile phone radiation can be damaging. The scientists exposed 24 mice to a 900 MHz or an 1800 MHz signal for 1 hour a day for 5 days a week for a year. They observed oxidative stress, cell death and influx of calcium into cells and concluded that exposure caused a stress response related to activation of TRPV1 channels. (Ertlav K et al, *Metab Brain Dis*, Jan 13, 2018.)

Testes

Mobile phone radiation had a harmful effect on reproductive function in male rats in a study from Turkey. The scientists found exposed rats had adverse effects on testicular weight, tubule diameter, germinal epithelium height and cortisol. (Cetkin, M et al, *Andrologia* 49(10), 2017.

In a similar study from Nigeria, scientists exposed male rats to mobile phone radiation for 28 days. They observed degenerative changes in testicular physiology, reduced levels of sex hormones and increased levels of oxidation. (Oyewopo, AO et al, *Andrologia*, 49(10), Dec 2017.

Wireless technologies

In a review of studies on wireless radiation, US researchers from noted that symptoms included reduced memory, learning, cognition, attention and behavioural problems that may result in autism and ADHD. Genetic and epigenetic damage may contribute to the problems, they said. (Sage C and Burgio, E, *Child Dev* 89(1):129-36, 2018.)

Thyroid

Researchers from India found that students who were highest users of mobile phones had increased levels of the TSH hormone, which could indicate thyroid problems. (Baby NM et al, *Indian J Endocrinol Metab* 21(6):797-802, 2017)



' Mobile phone radiation had a harmful effect on reproductive function in male rats'

Abbreviations

RF radiofrequency radiation (including mobile technology)

ELF extra-low frequency radiation (including electrical sources)

EMF electromagnetic fields (often used alternatively for ELF)

mG milliGauss (measurement of magnetic field)

T Tesla - alternative measurement of magnetic field; also milliTesla (mT) and microTesla (μ T)

0.1 mT = 1000 mG

0.01 mT = 100 mG

1 μ T = 10 mG

Hz Hertz - a measure of frequency (cycles per second).

Megahertz (MHz) - million Hz

GigaHertz (GHz) thousand million hertz

Mobiles and brain tumours

A recent report shows that the link between mobile phone radiation and brain tumours has strengthened in the last five years.

The BioInitiative Report of 2012, by a group of independent researchers, included a review of studies on the link between mobile phone radiation and brain cancer. In a supplement released late last year, Professor Lennart Hardell and Michael Carlberg, both from the Department of Oncology at University Hospital in Sweden, reviewed evidence for the association from studies published between 2010 and 2017.

The review found that mobile phone radiation is linked with glioma, meningioma and acoustic neuromas.

Gliomas

Gliomas are the most common malignant brain tumours. The review found that using a mobile phone for a long period of time (generally 1640 hours or more), almost doubled the risk of gliomas and that use on the same side of the head increased the risk by approximately 2.5 times. They also showed that people with glioblastoma multiforme, a type of glioma, who used mobile phones survived for less time than those who didn't.

Meningiomas

There was also a link between heavy mobile phone use and meningiomas, a common benign brain tumour. Hardell and Carlberg found that using a phone on the same side of the head as the tumour resulted in a 'somewhat, but not statistically significant, increased risk'.

Acoustic neuroma (or vestibular schwannoma)

Heavy mobile phone use increased the risk of acoustic neuromas, a benign tumour of the cranial nerve between the ear and the brain, more than two and a half times.

Hardell and Carlberg say that the research on human studies is now supported by studies on animals, particularly the results of the National Toxicology Project, which found tumours and genetic damage in exposed rodents. The damage could, they suggest, be the result of oxidative stress which can cause DNA damage.

The authors say that the results of these studies suggest that radiofrequency radiation should be upgraded to a Class 2A carcinogen ('probably' carcinogenic), from its current Class 2B ('possibly' carcinogenic) status.

The authors expressed concern about fifth generation (5G) mobile phone technology, which will increase public exposure to radiofrequency radiation.

The review is available at: <http://www.bioinitiative.org/report/wp-content>



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Phone addiction makes kids sad

Teens might love their mobile phones; but using them doesn't necessarily make them happy.

Psychology professor Jean Twenge of San Diego State University, looked at media use and happiness in more than a million teens from 8th, 10th and 12th grades in the US. She found that teens who spent more time in front of screen devices—playing computer games, using social media, texting and video chatting—were less happy than those who were involved in other activities, including face-to-face interactions.

Twenge advised that teens should use digital media for less than an hour a day. After that, unhappiness levels rose steadily, she said.

She also found that young people's life satisfaction and happiness plummeted after 2012. 'The advent of the smartphone is the most plausible explanation for the sudden decrease in teens' psychological well-being,' she said.

https://www.eurekalert.org/pub_releases/2018-01/sdsu-pta011818.php

Internet addiction affects brain

People who are heavy online gamers have changes in the brain that are similar to those of other addiction disorders, according to a study published recently in 'Addiction Biology'. The authors compared the brains of people with and without gaming disorders and found that excessive gaming was linked with less gray matter in the lower right orbitofrontal cortex of the brain. This is also the case in people with alcohol or substance use disorders.

The prefrontal cortex of the brain is important for decision making and behavioural control.. (Zhou F et al, *Addiction Biology*, 10.1111/adb.12570)

Phone addiction changes brain chemicals

Young people who are addicted to smart phones and the internet may have chemical imbalances in their brains, according to a study by Dr Hyung Suk Seo, professor of neuroradiology at Korea University. Seo's team studied brain chemistry in 19 internet-addicted teens and 19 healthy controls using magnetic resonance spectroscopy.

The study found that the teens with internet addiction were more anxious, depressed, impulsive and had more insomnia than nonaddicted teens. They also had higher levels of gamma aminobutyric acid (GABA), which can cause anxiety. Treating addicts with cognitive behavioural therapy helped normalise their brain chemistry.

(Society of North America. "Smartphone addiction creates imbalance in brain, study suggests." ScienceDaily. ScienceDaily, 30 November 2017. <www.sciencedaily.com/

Toy tech collects kids' data

VTech Electronics, maker of smart toys for kids, has agreed to pay US\$650,000 to settle charges that it collected personal information from kids without their parents' consent. (Chicago Tribune 15.01.18) While there is ongoing debate about whether or not the company did inform parents, the case highlights the need for parents to be vigilant about what information is collected by electronics companies from their children.

'People who are heavy online gamers have changes in the brain that are similar to those of other addiction disorders'



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Operating theatres

A Hospital in Pakistan has made the news by banning the use of mobile phones in operating theatres. On 20 November, the Medical Director of Lady Reading Hospital in Peshawar sent a notification to all staff stating:

'...there will be a complete ban on use of mobile phone in Operation Theatres (regular OTs/ Emergency Department OTs) and all kind of staff have to keep their mobile in the lockers. Anyone found violating the order, their mobile will be confiscated and disciplinary action will be initiated against him/her.'

Research has shown that 66 per cent of surgeons use mobile phones in hospitals and sometimes in operating theatres. (Geonews, 07.12.17.)

Residents 'move' NBN tower

Residents from a small farming community in Queensland have scored a small victory against the National Broadband Network (NBN). Residents of Wamuran objected to NBN's plans to locate a 45m-high transmission tower close to residences. They suggested a number of alternative locations, to one of which NBN agreed. (*Courier Mail*, 08.12.17)

Note: EMR Australia advises that locating a transmission tower further from a residence does not guarantee reduced exposure from EMR. If the power of the transmissions is increased, the amount of exposure can be as much as it would have been had the tower been located closer.

France bans mobile phones

France's Minister for Education, Jena-Michel Blanquer, has announced plans to ban the use of mobile phones in schools based on concerns about health. The ban is to commence in 2018 and to apply to schools and colleges.

'It is good that children are not too much, if at all, in front of screens before the age of 7', he said.

<http://www.rtl.fr/actu/politique/blanquer-sur-rtl-les-portables-seront-interdits-a-l-ecole-et-au-college-a-la-rentree-2018-7791345944>

Smart parking metes, Melbourne

The City of Melbourne has begun rolling out new smart parking meters that allow drivers to pay parking phones using their credit cards. The meters use 3G mobile wireless technology and, at the time of writing, utilise the Optus network.

A spokesman from the Council was uncertain how much radiation the meters emitted but said that emissions complied with the Australian standard. He advised that the City's parking meters have been using wireless technology for at least the last five years.

The rollout of the new meters, which began in November, is expected to be completed by the end of June 2018. (City of Melbourne, correspondence)

Mobile phone protection



Blocsock mobile phone pouches block 96% radiation



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



Echo Tubez airtube headsets keep the phone away from the head

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Wireless radiation a risk to wildlife, says expert

Electromagnetic radiation is responsible for the loss of valuable wildlife from the Mt Nardi area of the World Heritage-listed Nightcap National Park in NSW, according to Australian botanist Mark Broomhall.

In a report to the United Nations, Broomhall documented the decline of various animal species from 200 to 2015, correlated to the introduction of telecommunications transmitters in the park.

Among the species that have declined or disappeared from the park during that period are 3 species of bats, 11 threatened and endangered bird species of birds and 11 species of migratory birds. Moreover, the report says that '86 bird species are demonstrating unnatural behaviours [and] 66 once common bird species are now rare or gone.'

Broomhall believes that wireless technology is to blame. He says, 'In the year 2009, enhanced 3G technology was installed and a further 150 pay television channels were added to the tower. Following these additions, I witnessed the exodus of 27 bird species from Mt. Nardi while simultaneously, insect volumes and species variety dropped dramatically. In late 2012 and early 2013, with the construction of a new tower in the complex and the introduction of a 600,000-watt generator, the system was upgraded to what became universally known as "4G." Immediately after, I witnessed the rapid exodus of a further 49 bird species. From this time, all locally known bat species became scarce, 4 common species of cicada almost disappeared, as well as the once enormous, varied population of moths & butterfly species. Frogs and tadpole populations were drastically reduced; the massive volumes and diverse species of ant populations became uncommon to rare.'

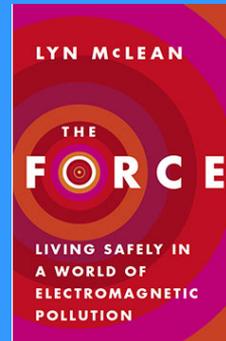
The implications of these findings should sound a note of caution. Broomhall says, 'we can appreciate that the effects of this technology and its application on Mt. Nardi over the last fifteen years, affect not only the top of the life chain species but they are the devastating the fabric of the continuity of the World Heritage, causing genetic deterioration in an insidious, massive and ever escalating scale. To truly understand what these studies reveal is to stare into the abyss.'

'Report detailing the exodus of species from the Mt. Nardi area of the Nightcap National Park World Heritage Area during a 15-year period (2000-2015.),' <https://ehtrust.org/wp-content/uploads/Mt-Nardi-Wildlife-Report-to-UNESCO-FINAL.pdf>



The Mt Nardi area is a popular bird-watching destination, located in northern NSW near Nimbin.

Books by Lyn McLean



'The Force'



'Wireless-wise Families'



'Wireless-wise Kids'

for everything you need to know about keeping your family EMR-safe
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Trump's 5G rollout

In December 2017, US President Donald Trump signed a report entitled 'National Security Strategy of the United States of America' which outlined his plans to 'make America great again'.

Under the heading of 'improve American Infrastructure', the report states: 'We will improve America's digital infrastructure by deploying a secure 5G Internet capability nationwide. These improvements will increase national competitiveness, benefit the environment, and improve our quality of life.' No further details of the plans for this technology are provided in the report. (<https://www.whitehouse.gov/wp-content/uploads/2017/12/NSS-Final-12-18-2017-0905.pdf>)

Wireless street lights

Just what we all need: more wireless infrastructure in our streets.

Wellington City Council in New Zealand has given the go-ahead for a 'smart' lighting network. According to the provider, Telensa, the 'Low Power Wide Area (LPWA) wireless networks simply attach to light poles. They can provide city or region-wide coverage in a matter of days'.

Forget towering base stations. Now you can have a radiation-emitting pole right outside your house! (<https://www.telensa.com/2017/11/27/wellington-city-council-selects-telensa-for-its-smart-street-light-management-system/>)

Did you know?

'Nicola Tesla (1856-1943), the "Father of Electrical Engineering", a visionary in many fields and a prolific inventor, chronically exposed himself to electromagnetic fields through his obsessional work habits and became the first well-documented case of electromagnetic hypersensitivity. He became hypersensitive to sunlight, to sounds (a watch was intolerable), to touch, his pulse fluctuated wildly from 150/min to only a few feeble beats/min and he suffered from formication (the feeling of ants crawling), tremors and twitches.'

Extract from "Nursing the Electrically-Sensitive Patient" presented to a meeting in Dallas in 1997. Written by Cyril W Smith, Honorary Senior Lecturer, retired, Dept Electronic and Electrical Engineering, University of Salford, UK.



WIRELESS RADIATION, CHILDREN AND HEALTH

**talk by Lyn McLean, Adelaide,
10 February**

Do you use mobile or cordless phones. Do your children use tablets or laptops? Does your home have WiFi? Is keeping your family safe a high priority for you?

If you answered 'yes' to any of these questions, then this is for you.

Come along, meet author Lyn McLean, pick up her new book, chat about your wireless devices and find out how to make your family safe from wireless radiation.

In this talk, Lyn will show you

- how to reduce exposure to harmful radiation
- safer ways to use mobile and wireless technologies
- how to protect your children and
- just what's being emitted from your wireless devices - bring along a wireless devices (eg a baby monitor) for Lyn to test.

Sat. 10 February 2018
2:00 pm – 4:00 pm

Grange Uniting Hall
5 Beach Street, Grange

Bookings: <https://www.eventbrite.com.au/e/wireless-radiation-children-and-health-tickets->