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MOBILE PHONES THE UNFOLDING CONTROVERSY
AFTER NICOTINE, ASBESTOS AND LEADED PETROL,
IS MANMADE RADIATION THE NEXT PUBLIC
HEALTH EPIDEMIC?
THE FORCE: LIVING SAFELY IN A WORLD OF

ELECTROMAGNETIC POLLUTION

Mobile phones - the unfolding controversy

MOBILE PHONES IN PARTICULAR HAVE EXPANDED FAR BEYOND TELEPHONY INTO THE REALMS OF PHOTOGRAPHY, THE INTERNET AND A BEWILDERING ARRAY OF SMARTPHONE APPS. AS MOBILES INCORPORATE MORE FUNCTIONS, THE MORE INDISPENSIBLE THEY BECOME IN THE EYES OF THEIR USERS. A NEWLY-COINED WORD 'NOMOPHOBIA' REFERS TO A FEAR OF BEING OUT OF MOBILE PHONE CONTACT, A CONDITION THAT AFFECTS ABOUT 20% OF AUSTRALIANS.

BY MARTIN OLIVER

s a civilisation we are becoming increasingly addicted to technological gadgets. Mobile phones in particular have expanded far beyond telephony into the realms of photography, the internet and a bewildering array of smartphone apps. As mobiles incorporate more functions, the more indispensible they become in the eyes of their users. A newly-coined word 'nomophobia' refers to a fear of being out of mobile phone contact, a condition that affects about 20% of Australians.

Globally, the number of mobile phone subscribers stands at a staggering 5.3 billion, or 77% of the world's population, and Australia is among the countries where the number of mobiles in use exceeds the total population.

RADIATION LEVELS

In 1973, the world's first handheld mobile phone, designed by Martin Cooper at Motorola, was unveiled. This original prototype weighed about two kilograms, but as time went on, handsets became less clunky, and evolved from a weight-lifting exercise into the streamlined designs that we are familiar with today.

All mobile phones emit electromagnetic EMF radiation in the microwave spectrum, and the issue of potential health effects from their use remains contentious. As an industry body, the Australian Mobile Telecommunications Association (AMTA) predictably refers on its website to 'strict, science-based, safety standards'. In the meantime, many people are choosing to take a precautionary approach by reducing or minimising their exposure.

Mobile radiation is measured according to its specific absorption rate (SAR), a measure of power absorbed per mass of body weight. Each phone has its own SAR rating, with the lowest number indicating the lowest emissions. Among the phones currently on the market, the range extends between about 0.3 and 1.6, which is the upper safety limit in the US and Canada.

For Australian consumers this information is not easy to come by. There

is no need for the SAR to be provided on the packaging, and the AMTA expects consumers who want to obtain these figures to do so by contacting manufacturers or by checking on their websites: this is a major inconvenience when making a choice in the store between several different brands. In the US, the Environmental Working Group has been active in this issue, and provides information that ranks models according to their SAR values.

During the 1990s, Australia's mobile phone system changed over from analogue to digital; while analogue involves a continuous wave, digital signals are pulsed, and are considered by many to be more harmful. However, because digital has completely taken over, the debate over this issue has disappeared.

PHONES AND CHILDREN

Children are more vulnerable than adults to radiation because their brains and nervous systems are still developing, and their skulls are thinner, allowing EMF fields to pass through them more easily, in turn increasing the exposure dose. While concern has being expressed that mobile phones are being marketed to children of an increasingly young age, the Australian Communications and Media Authority's guide Mobile phones – child safety checklist does not mention the word 'radiation' once.

In contrast, mobile phone use by children under 18 has been discouraged in India, Israel, Germany and Russia, and in France where there is a ban on child-oriented advertising. The UK government has recommended that under-16s should reserve calls for essential purposes only. Unfortunately the social pressures pushing children into using mobiles are immense, and being without one can sometimes lead to ostracism and even bullying. As for teenagers, the chances of their taking on board health warnings from their parents are low, to say the least.

BIOLOGICAL EFFECTS

Professor Olle Johansson of the Karolinska Institute in Sweden has linked mobile phone use to a range of different health issues including genetic damage, psychological problems, learning difficulties, reduced concentration, and sleep disturbances. Disturbed brain function may result in people not getting refreshed overnight, and it has been suggested that this could contribute to the incidence of stress and burnout. Johansson sees this collection of symptoms as a major health issue because they affect such a large percentage of the population.

A Danish study has found that the use of a mobile while pregnant correlates with an increased likelihood of behavioural problems among the children later in life, especially where they start using the phone. Pregnant exposure was linked to a 40% increase in behavioural issues, while having access to a mobile by the age of seven was associated with a separate 20% rise.

An important group who can be affected by mobile phones are those who have radiation sensitivity, generally known as electrosensitivity. While it is hard to say exactly what proportion of the population is affected in this way, it could be as high as 5%. Symptoms can include fatigue, rashes, headaches, disorientation, irritability, tinnitus and sleeping difficulties. Electrosensitives will go out of their way to avoid using mobile phones, but may be affected by the use of mobiles by other users in their vicinity.

BRAIN TUMOURS

Concerns about an increased incidence of brain tumours linked to mobile phone use have been around for decades, and are not going away. In 2009, leading Australian brain surgeon Dr. Charlie Teo went public with a warning that people should avoid using mobiles, except on speaker phone.

In the same year, Swedish professor Dr. Lennart Hardell carried out a meta-analysis of eleven studies and found that mobile usage over a period of at least ten years roughly doubles the chances of developing a tumour on the side of the head where the mobile is used.

Another Hardell study, this time from 2008, discovered that people who started using a mobile before the age of 20 are five times more likely to have developed a brain tumour ten years later than those who did not. As brain tumours take about 10-15 years to form, any clear trend detected now will almost certainly be the vanguard of a far greater problem in the future.

THE INTERPHONE STUDY

The largest survey so far undertaken of a possible connection between mobile phone use and brain tumours is the World Health Organization's Interphone study. This involves 123,000 people living in 13 countries who have been using mobiles for ten years or more. However it is industry-funded, and has been criticised by detractors such as the International Electromagnetic Field Collaborative for what they see as biases and errors.

In May, 2010, the media trumpeted headlines telling us that no brain tumour connection had been found by Interphone, but less publicised were the concerns of two dissenting scientists from the project who had picked apart the data and found a noticeable increase in glioma brain tumours among those who used a mobile for an average of at least 30 minutes a day.

However, the landscape shifted abruptly on 31st May, 2011, when an updated UN announcement classified mobile phone use as 'possibly carcinogenic to humans' under International Agency for Research on Cancer (IARC) criteria. In the heaviestuse category, a 40% increase in the rate of gliomas had been identified.

SMOKE AND MIRRORS

An impressive body of evidence is accumulating to further support the idea that mobile phones do cause health problems. Much depends on the design of a trial, and what you find depends a lot on what you are hoping to potentially uncover. When looking at an issue such as brain tumours, most independent studies





do identify a connection, and at a far higher level of statistical significance than those commissioned by the mobile phone

Where similar dynamics are at work, in the tobacco and cancer link, and more recently fossil fuels and global warming, industry has tried to sow doubt in the public's mind that there is a problem, often with the help of 'credible' scientific experts. In the case of tobacco, this delaying tactic enabled the industry to maximise profits until the scientific case against it was watertight.

In May, 2011, a Swedish scientist named Anders Ahlbom was removed from an IARC panel evaluating mobile radiation because he had omitted to mention his directorship of the consulting firm Gunnar Ahlbom AB that had been established to help clients in the telecommunications industry deal with certain issues including environmental regulations. In 1998, Ahlbom participated in the setting of controversial global EMF standards under the International Commission on Non-Ionizing Radiation Protection (INCIRP.)

Also in May, Ren de Seze, another member of the IARC panel, was accused in a French TV documentary of trying to discredit a study carried out for the carrier Bouygues Telecom indicating that mobile phone radiation can be deadly to chicken embryos. The group to which he belongs, Fondation Santé et Radiofréquences, is half supported by industry.

Sometimes being forthright can have unexpected consequences. Following his groundbreaking research into health effects, in May, 2011, Olle Johansson issued a statement that 'Due to unforeseen circumstances I am now being evicted from my premises', and he has since lost his laboratory space. Greek biophysicist Dimitris Panagopoulos was the first person to scientifically prove DNA damage from mobile radiation, but for his efforts was reassigned a small windowless research space by the University of Athens, and was later blocked by the university from taking up a research post elsewhere.

ARE CORDLESS PHONES

Like mobile phones, cordless phones (also known as DECT phones) also use the microwave spectrum, and on the whole, studies tend to indicate that the risks are nearly as great. For these phones the 2008 Lennart Hardell study looking at people who started their usage under the age of 20 found a four-fold increase in gliomas compared to controls.

A cordless phone base effectively acts as a type of miniature mobile phone tower, but unlike a mobile phone base station, its radiation levels are usually constant rather than being adjusted down to the minimum level needed to make a call. It is advisable not to spend extended periods near to one, for example when sleeping or working.

A 2010 double-blind study conducted by Canadian scientist Dr. Magda Havas found that people exposed to radiation from a cordless phone base at 0.5% of the current US and Canadian safety guideline limit experienced anywhere up to a doubling of their heart rate. Of the test subjects, most had identified themselves as being to some degree electrosensitive.

Fortunately, DECT models are now available overseas where the base only emits radiation when the handset is in use, and adjusts it according to the distance from the phone. Made by a company called Orchid for the German market, these are labelled as 'lower emission', and the company is struggling to keep up with a healthy consumer demand that has largely been stimulated by government health warnings about DECT phones. Back in Australia, some retail outlets no longer sell corded phones, making life more inconvenient for the electrosensitive people who rely on them, and for anyone who wants to take steps to curb their EMF exposure.

MINIMISING EXPOSURE

Austria, France, Germany and Sweden have all issued advice to enable their citizens to reduce mobile phone radiation. Although Australia has not followed suit, instead issuing statements that there is nothing to worry about, it would be wise to follow a precautionary principle. Suggestions include:

- Not having a mobile phone, or only using it in emergencies. However, in many cases, this is not practical as many people are obliged to use a mobile for their work.
- Using the speaker phone, or an air tube (a device where the last few inches of wire are replaced with a hollow tube.) There has been some concern that wired earpieces risk concentrating the electromagnetic field in the ear, and in 2005 British expert Professor Lawrie Challis recommended clipping a ferrite bead to a hands-free kit.
- Bluetooth headsets are generally significantly lower-radiation than using a phone against the ear.
- Keeping calls short.
- Sending texts instead.
- Picking a mobile with a low SAR.
- Keeping the mobile four inches from the head in preference to holding it directly to the ear, as the radiation exposure drops dramatically with distance.
- Choosing a stronger-signal area to make a call. Radiation values decrease significantly when speaking closer to a base station, and rise when at a distance.
- Avoiding the use of a mobile in a metal environment such as a car or a train.
- Mobiles send out signals when switched on, and no call is being made. Keep the mobile away from the body, or consider using an anti-radiation bag.

MESSAGES WAITING TO BE RECEIVED

The size of the global mobile phone market has recently reached the US \$1.2 trillion (AUD \$1.1 trillion) mark, making it the fastest-growing large industry on the planet. Its influence in terms of lobbying, advertising and funding studies cannot be overstated. It has attracted a legion of supporters who share its dismissive attitude to health concerns. Sometimes these are found in unlikely places.

In the case of mobile phones, the Federal Government is failing in its duty of care, an attitude that is mirrored in its gung-ho attitude to GM food, having abandoned the precautionary principle being followed by some governments overseas. If, or more likely when, mobile

phones are finally identified as a serious health risk, much unnecessary damage will already have been done.

The Cancer Council of Western Australia provides a Cancer Myths section on its website in which it largely dismisses cancer risks from a range of everyday objects, substances and exposures. On the 'Mobile phones and cancer' page, a notice appeared on 1st June 2011 (one day after the UN announcement) that the information was currently 'under review.'

As for the seemingly vast number of people, myself included, who suffer from earaches of varying degrees when using a mobile or cordless phone held up to their ear, if they manage to avoid being persuaded that this is psychosomatic, they may feel instead that their bodies are trying to tell them something. These messages are worth listening to; one friend who encountered this discomfort from a mobile phone later experienced two months of pain in her head and neck area followed by a permanent and severe case of electrosensitivity that today restricts her lifestyle considerably.

RESOURCES

EMFacts (Australia) www.emfacts.com Powerwatch (UK) www.powerwatch.org.uk Microwave News www.microwavenews.com EMF Explained (Australian industry perspective) www.emfexplained.info ElectroSensitivity UK www.es-uk.info ElectroSensitivity.org www.electrosensitivity.org **Environmental Working Group** SAR values site (US) www.ewg.org/cellphone-radiation Orchid www.orchidgrp.com



Martin Oliver is a writer and researcher based in Lismore (Northern NSW).

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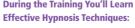
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After nicotine, asbestos and leaded petrol, is manmade radiation the next public health epidemic?

WITH MICROWAVE AND EMF RADIATION CONNECTED TO ADVERSE HEALTH OUTCOMES OF TECHNOLOGY USE, MANY PEOPLE CHOOSE THE OPTION OF FLAT-OUT DENIAL OF CARCINOGENS AT ALL COSTS, ASSUME PERSONAL INVINCIBILITY, ARE USERS ADDICTED TO THE TECHNOLOGY, ARE COMPELLED THROUGH EMPLOYMENT AND BUSINESS TO USE THESE DEVICES, SUCCUMB TO PEER GROUP PRESSURE TO HAVE THIS TECHNOLOGY, FEAR BEING SOCIAL NETWORK OUTCASTS, ARE TOO TERRIFIED TO WANT TO KNOW, SEE THEIR MOBILE TECHNOLOGY STATUS IN THEIR 'TRIBE' AS MORE IMPORTANT THAN THEIR HEALTH, ENGAGE IN PLAYING 'SHOOT THE MESSENGER' OR THEY HAVE A VESTED INTEREST IN THE PROLIFERATION OF MOBILE COMMUNICATIONS DEVICES.

BY ROBYN WAWN

f you drive a lot, fly a lot, spend a lot of time on a mobile or cordless phone, spend many hours in front of a computer or use electrical appliances, machinery and wireless devices, your cells, organs and immune system have already accumulated a lot of manmade radiation.

Microwave radiation from all wireless devices passes through walls, flesh, bone, air and water and includes neighbours' wireless radiating devices passing through adjoining walls or floors at home and work.

As an example of rapid technology uptake, there are more mobile phones in Australia than there are Australians with each mobile phone beaming its microwave radiation. How many wireless microwaving devices and electromagnetic-generating electrical appliances are in your home and workplace?

The Jekyll and Hyde flip side of the coin to technology cleverness and convenience can be serious adverse health consequences of mobile and cordless phone radiation exposure. These health effects are multiplied for children, including those still in the womb.

WHY BE CONCERNED ABOUT CHILDREN USING MOBILE TECHNOLOGY?

Compared to the over 20s, children's cells grow faster, their immune systems are not as robust, their skulls are thinner and their brain sizes smaller, meaning that microwave radiation does not have to travel as far to penetrate deeper into their growing brain, reaching almost over to the opposite ear for a five year old, from a mobile or cordless phone held to the ear.

The under 30s generation is the first group to be exposed to this lifetime of

high levels of manmade radiation from an early age.

Today, children have a larger than ever uptake of mobile, microwave-radiating mobile devices. They have habits such as sleeping with their mobile phone under their pillow to keep in touch with friends day and night and using wireless computer games consoles and laptops.

Laptop computers are not called laptop for nothing. Many people, especially young people, position computers and wireless microwaving devices like games consoles literally in their laps, near sensitive reproductive organs. For a pregnant women using wireless technology, the embryo or foetus is not excluded from this penetrating radiation exposure.

Pre-kindergarten children use mobile and cordless phones today with guidance from their parents. Toys are given to children in the shape of cute mobile phones.

TIP: If using a mobile phone as a bedside alarm clock, move its invisible radiation away from your brain to a few meters away, at the other end of the bed or the other side of the room so that you have to get up to turn it off.

Where is the safety testing for children? Mobile phones have never been tested for health and safety on children. One form of testing and measuring is after-the-event real world hospital statistics such as the biggest cancer killer of children under 10 today is brain cancer, according to Dr Charlie Teo, neurosurgeon in Sydney, 8 May, 2011. Connect the dots. Dr Teo also advises while breast cancer doubles its cell numbers in weeks or months, the quickest brain cancers take just 16 hours.

WHO IS GETTING BRAIN TUMOURS TODAY?

Neurosurgeons operate on brain tumours today where patients are typically wealthier people who could afford expensive mobile phones ten years ago. Today's brain tumour patients also include men who have been heavily using mobile devices for work and children with thinner skulls. The worst place to get a brain tumour is in the centre of the brain, making it almost inoperable.

WHEN IS A MOBILE PHONE SAFE?

Some people mistakenly believe that, because they are not making a call on their mobile phone, it is not beaming microwaves. Wrong. While roaming – waiting for a call – if the phone is carried against the body, its constant microwaves emissions are penetrating that part of the body – low-level microwaves year in, year out, radiating at the same body location.

Mobiles are usually carried beside the reproductive organs in men in their pocket or on their belt. IVF is doing very big business today with male infertility. Mobiles are also carried in men's chest pockets of shirts or jackets. There is a habit of women and girls wearing their mobile phone in their bra, year after year microwaving the same delicate tissue. **TIP:** To stop a mobile phone from emitting microwave radiation, turn it off or put it in flight mode. To minimise cumulative radiation exposure, do not carry the mobile against the body or hold it next to your brain. Find a safer way to communicate such as using text, speaker phone and making fewer and shorter

mobile or cordless phone calls. Batch return calls on a landline. Never give up the landline option for 100% mobile services.

Mobile phone radiation uses significantly stronger microwaves when engaged in a call or when downloading/uploading data packages. Data packages are carried by radio frequency (also known as microwaves) which are beamed in all directions, when holding it against your brain, through the hole in your skull called an ear and when habitually held against the same ear.

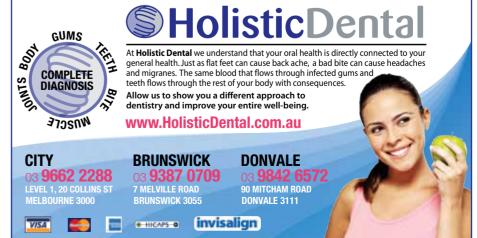
Microwaves are most effective on wet tissue and cook from the inside out. The brain is made up of around 90% water for babies and around 80% water for adults, technically making brain matter an ideal substance for microwaving.

Mobile and cordless phones have the same microwave radiation used in microwave ovens but of lower intensity. Instead of a single high burst of microwave radiation for cooking, mobile phones are placed for years against the body, notably the brain, progressively accumulating low-level microwave cell damage at that body location. Once microwaved, tissue cannot be unmicrowaved.

WHAT THE SURGEONS SEE AT THE COALFACE

From a university review in an Indian research report by Rash Bilari Dubey; MTech, Madusu Janmandlu, PhD and Suresh Kumar Gupta, PhD, the usual types of cancers and other adverse health outcomes associated with mobile phone use include: Glioma (brain cancer), Acoustic neuroma (cancer of the ear), Miningioama







is bounced around inside the metal

If hospitals and aircraft operators insist that you turn off your mobile devices while in their buildings or in flight because of interference to vital equipment, is this same radiation interfering with your vital cells?

MEGA EMITTERS OF RADIATION

Then there are the mega emitters – the ever-increasing number of mobile phone transmission towers springing up in suburbs, rural regions and those clustered on the tops of city buildings, including hotels. Who would want to work or live in the penthouses on the top few floors directly underneath these powerful and multiple transmission towers? Whole floors can be sources of strong radiation exposure and for many floors below.

you are in range of these frequencies at these invisible public microwave radiation "hotspots". And what of the health of the people who work daily in range of these public hotspots?

HIGHLY MOBILE LIFESTYLES

A big and rapidly growing use of smart phones and wireless tablets today is to communicate on the move – using mobile email and internet virtually anywhere on the globe if in range of a transmission tower. The microwaves send and receive data packages, uploaded and downloaded phone calls, text, videos, TV, email, websites – without having to carry a bulkier laptop any more for immediate communication access. Websites are designed for a small screen size specifically for the growing army of smart phone users, usually with an m. in front of the usual web address. Thousands of apps

Even if you choose not to use the technology, you are in range of these frequencies at these invisible public microwave radiation "hotspots". And what of the health of the people who work daily in range of these public hotspots?

(central nervous system cancer), Testicular cancer (the most common cancer in young men), Salivary gland tumours (targets for near-field microwave exposure), Malignant melanoma of the eye (near-field soft tissue outcomes), Male fertility (sperm damage, loss of sperm motility, sperm count and sperm death), Breast cancer (in both men and women carrying mobile phones in the bra/chest pocket area) and Non-Hodgkin lymphoma (cancer of the lymphatic system).

OLD SAFETY STANDARDS DON'T FIT NEW PHONES

In the nineties, laboratory testing called SAR (Specific Absorption Radiation) levels for establishing mobile phone radiation safety standards was done on a 90kg male mannequin. Safety standards for phone manufacturers were set for this large, military-sized male body which is not representative of the bulk of the physical size of most mobile phones users. One size does not fit all. Since the nineties, transmission power and signal reach of mobile and cordless phones has dramatically increased, as has their affordability, accessibility, technological innovation and popularity.

From the earlier signal strength of mobile phones less than 1,000 MGz, many mobile phones today have a much stronger signal strength. Some brands of cordless phones are 5.8 GHz. This means you can receive calls further away from transmitters without dropping out. The

GSM digital mobile technology standard is 28 times stronger in radiation than the previous CDMA standard which was decommissioned by Telstra in 2008.

As well as mobile phones and transmission masts beaming strong microwave radiation in all directions like the sun's rays, what of the cumulative effects of radiation exposure to all the other microwave-emitting devices now in daily use and that have become a way of life – wireless modems, keyboards, mice, computer games consoles, DECT baby monitors, neighbours' wireless and bluetooth devices radiating through party walls and up and down though multi-storey buildings, mobile credit card swipers, compulsory smart meters. leaky microwave ovens, WiFi, GPS and microwave communication satellites beaming down to the receiving devices and everyone on the ground.

If you are a latest generation iPhone user and you are standing between another iPhone user and the nearest microwave communications tower, your mobile device becomes a boosting transmitter to relay that other person's microwaved messages to that tower. You can become a transmitter for multiple mobile devices. It is similar for bluetooth phone headsets making your head the receiving station for multiple microwave devices in range while often carrying the mobile phone handsfree against the body. Mobile phones and aerials in use inside a vehicle generate the Faraday Cage effect where radiation

There is serious money to be made as a commercial incentive for city and urban property owners to lease their high-altitude roof spaces for as many transmission mast placements for mobile communications organisations that can be fitted. Take a walk down Collins Street or Pitt Street and spot the hundreds of communication towers on roof tops. What level of radiation is in cities today compared to rural regions? It is like passive smoking - you just happen to be in range of other people's radiation transmitters. Unless you have the right radiation meter, you cannot see the concentrations of invisible radiation pollution hotspots of both microwaves and electromagnetic frequencies.

Radio and TV broadcast towers add to the background level of manmade radiation that most people are exposed to at some level so that they can hear radio and watch TV shows. Those living or working close to these towers receive stronger levels of radiation.

WIRED PUBLIC SPACES

What about long-term health effects from school rooms, libraries, airports, shopping centres and cafes that set up wireless connectivity so that people can conveniently use wireless email and internet from their laptops to connect via the microwaves beaming through walls and everyone in range, without having to plug in to connect via cable? Even if you choose not to use the technology,

can be downloaded to make more use of mobile devices, such as barcode readers using your mobile phone to scan product barcodes in shops.

MOBILE PHONES ARE THE OBVIOUS TIP OF THE RADIATION ICEBERG

Mobile phones are the visually obvious tip of the iceberg in the microwave radiation lifestyle. There is no real escape from manmade radiation any more and there is no safe level of exposure according to Dr George Carlo, USA, the chief scientist hired by mobile phone manufacturers in 1993 to prove the safety of mobile phone use. After six years and \$20 million of research, Dr Carlo came out strongly with the opposite view, armed with facts on how mobile phone microwave radiation hardens the cell walls, building up toxins within cells, which can lead to tumour growth.

Users of this technology have choice – minimisation of radiation and change of habits to reduce personal cumulative levels of radiation exposure. Many choose to ignore or deny this message. It interferes with their lifestyle. There is no option to live with zero manmade radiation any more, unless you permanently lock yourself up in a solid steel structure that has shielding like a microwave oven.

Autism is an enigmatic, disabling neuro-developmental disorder that has increased in incidence almost 60-fold since the late 1970s but with the most





dramatic increase occurring over the past decade. The conclusion of research by Tamara J Mariea and George L Carlo states, "The mechanism of EMR (ElectroMagnetic Radiation) impact could be direct by facilitating early clinical onset of symptoms, or indirect, including trapping heavy metals in cells and both accelerating the onset of symptoms caused by heavy metal toxicity as well as impeding therapeutic clearance. These data also suggest that wireless device EMR is a synergen in the etiology of Autism, acting in conjunction with environmental and genetic factors, and offer a mechanistic explanation for the correlation between concurrent increases in the incidence of Autism and the use of wireless technology."

BUT WAIT, THERE'S MORE!

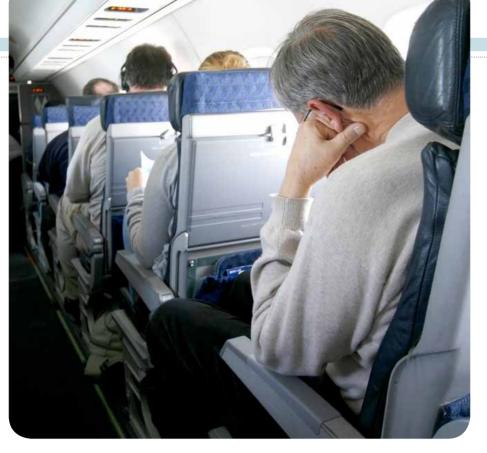
Invisible microwaves beam in all directions like the sun. Invisible electromagnetic frequencies (EMF or EMR) plume outside and travel along electrical cables, appliances and equipment. Only a radiation meter makes these invisible 'radiatiowaves' visible.

Even more prevalent than microwaves is EMF manmade radiation from electrical cables, gadgets, computers, TVs, electrical meter boxes, appliances, power points, fluorescent lights, pylons, telegraph pole transformers, suburban substations, all electrical machinery, including jets with their kilometres of concealed wiring pluming strong EMFs right under your feet, travelling up your legs and centimetres from your brain in a window seat through the aircraft's fuselage.

TIP: Book only aisle seats and not window seats to minimise radiation levels during flight.

Vehicles also emit EMFs through the wiring behind the dashboard and in the floor

A UK case-control study published by the British Medical Journal shows the increased incidences of leukaemia and other cancers in those children born and raised in close proximity to electrical power lines. About 4% of children in England and Wales live within 600 metres of high voltage power lines at birth.



SPOT THE RADIATION HOTPOTS

TIP: Individuals can empower themselves with a hand-held radiation pollution meter to discover exactly where the invisible electrosmog pollution hotspots are at home, work and in travel to sensibly minimise their own and their family's exposure to manmade radiation. It's simple. Position your furniture and appliances where you spend larger amounts of time daily (bed, desk) to move your body away from the radiation emitters, or the emitters away from your body, especially the brain. Every centimetre distance is important to health, as radiation levels drop off as you move further away from the sources.

TIP: For example, do not have your bedroom the other side of the wall to an electrical meter box EMFs. Many meters now have the double whammy of strong microwave radiation from the enforcement of 'smart' meter installation on top of strong EMF radiation. Bedside electrical clocks and radios are strong

EMF emitters. Ideally, move them two meters from your head or have them at the foot of the bed.

TIP: Electric blankets emit low level EMFs all night long, even if turned down to zero and still plugged in. After heating, pull the cable out of the wall before getting into bed. Power points and wiring behind walls near the bed are EMF emitters while you sleep. Check and mark safe distances with a radiation meter. Is the bedroom near an external telegraph pole transmission box? Check around the neighbourhood as well for the mega emitters. If in a hotel bedroom, move what emitters you can away from your brain and body or sleep with your head at the other end of the bed to minimise radiation to the head from fixed bedside electrical appliances and cables.

Assume that property values will be adversely affected by close proximity to mega emitters as more people realise the long-term health consequences of cumulative exposure to manmade radiation.

RADIATION SENSITIVITY HAS A NAME

Some people have a medical condition called 'electro hypersensitivity' and cannot tolerate close proximity to manmade radiation devices without experiencing a range of symptoms including nausea, insomnia, fatigue, headaches and other symptoms in varying degrees. Some people cannot even be in the same room as a mobile phone without feeling ill. Others are so sensitive they are like human detectors and can feel when they are in the presence of manmade radiation, like dowsers sensing the presence of water. If these people thought they were alone with these responses, they are not.

DO-IT-YOURSELF IS THE NEW NORMAL

As in the connections between nicotine and lung cancer, you do not have to wait for governments of the world to be pushed into playing catch-up over the next few decades on radiation and tumours in public health management. You can make your own choices for today, once you are informed, or after you have had 'the big fright' in the family. Unfortunately, degenerative disease prevention, especially adverse health outcomes from invisible manmade radiation, are not as convincing as tumours and other degenerative disease onsets later in life. You can bet the lawyers are circling for massive class actions on radiation and subsequent health issues in the future.

UP THE WELL KNOWN RIVER OF D'NILE

With microwave and EMF radiation connected to adverse health outcomes of technology use, many people choose the option of flat-out denial of carcinogens at all costs, assume personal invincibility, are users addicted to the technology, are compelled through employment and business to use these devices, succumb to peer group pressure to have this technology, fear being social network outcasts, are too terrified to want to know, see their mobile technology status



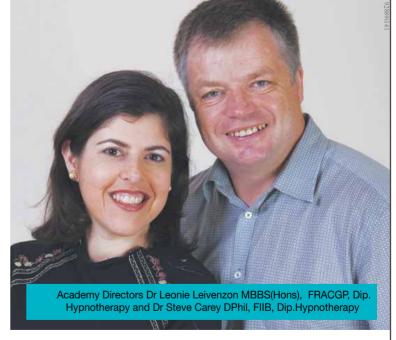


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in their 'tribe' as more important than their health, engage in playing 'shoot the messenger' or they have a vested interest in the proliferation of mobile communications devices.

THE ROLE OF GOVERNMENT

There are already government-backed national ad campaigns to graphically highlight the cancer risks of too much invisible ultra violet radiation exposure causing malignant skin melanomas, and anti-smoking campaigns against legal smoking resulting in lung cancers. There is a known dollar cost to governmentfunded public health bureaucracies for treating these widespread cancers. Governments also know that prevention is cheaper than cure (or treatment of symptoms). No such government public health campaign is yet in place for microwave and EMF radiation exposure health consequences except in California, where it is proposed to put into law the placement of health warning stickers about radiation consequences on all mobile phones, and in Russia.

The Russian National Committee on Non-Ionizing Radiation Protection announced the following principal recommendations:

- That it should be clearly marked on mobile phones and in the user's guide that they are a source of radio frequency radiation
- That children under the age of 18 and pregnant women should not use a mobile phone
- That school syllabuses should include coverage of the mobile phone issue in their educational program
- That there should be a ban on all types of advertising for mobile telecommunications for children under the age of 18
- That legislation should be introduced to protect children and their developing organisms and the bioelectric processes
- That a national study should be funded to determine the possible health effects of chronic EMF exposure on the developing brain

WORLD HEALTH ORGANIZATION COMES OUT OF THE CLOSET

On 31 May, 2011, after meeting for eight days in Lyon, France, 31 eminent scientists from 14 countries at the global World Health Organization reached a conclusion. After studying hundreds of existing research reports on exposure to mobile phone radiation and studies of cancers, they announced that radiation fields emitted from mobile phones are "possibly carcinogenic" (i.e., people can get cancers from long-term mobile phone use). They found evidence that mobile phone users risk developing glioma and acoustic neuroma - types of brain tumours, both malignant and benign, that are rarely curable. They concluded that people who use their mobile (and cordless) phones more than 30 minutes a day over 10 years have a 40% increased risk of developing

Imagine the litigation if these scientists said 'definitely' carcinogenic, that is, bringing litigation onto themselves from mobile phone manufacturers.

How many minutes do you or your family use mobile phones daily? It is time to take stock. Some chronic mobile phone users are holding this microwave-emitting device to their brain for four to six hours a day for years.

If you experience illness or feel unwell when you go home or go to work, you may want to check the levels and hotspots of manmade radiation in your environment. Not everyone exposed to this radiation will physically feel unwell. Some people are more sensitive than others.

DO YOUR OWN DUE DILIGENCE

It is not automatic that, if you smoke a packet or two of cigarettes a day for ten years, you will get lung cancer and other lifestyle diseases. However, your chances of cancer are much higher compared to nonsmokers. Similarly, all heavy mobile phone users over a ten-year period of radiation exposure are not automatically going to get a brain tumour. However, their risk of tumours is significantly higher.

Look up for yourself what many scientists are speaking out on and are in public agreement with in relation to adverse and serious health risks from manmade radiation from mobile phones, computers and other radiating devices. Notably, look for information by Professor Devra Davis, Dr Martin Blank, Dr George Carlo, Dr Magda Havas PhD, and neurosurgeons Dr Charlie Teo (the Sydney neurosurgeon of last resort when you have the incurable brain tumour that no-one else wants to operate on) and Dr Keith L. Black, MD in USA. Dr Black serves as Chairman of the Department of Neurosurgery and Director of the Maxine Dunitz Neurosurgical Institute at Cedars-Sinai Medical Centre. He also holds the title of Professor in the Department of

Neurosurgery.

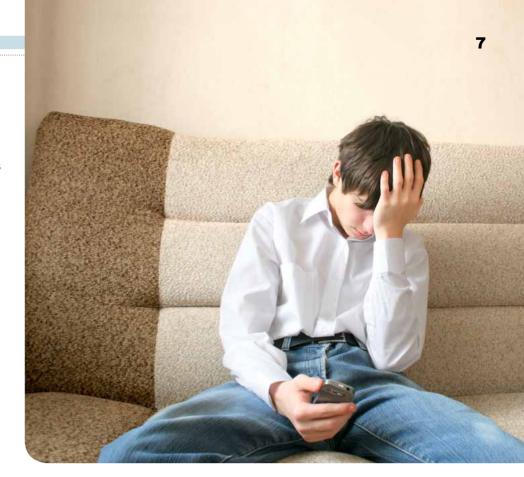
Communications technology and electrical appliances can be magnificent, convenient, popular and are here to stay but

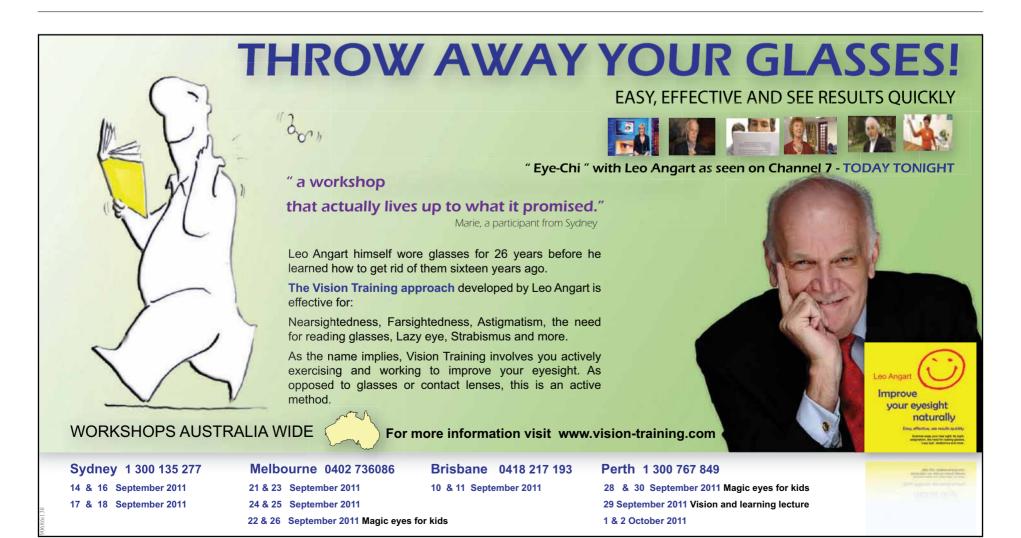
at what price to long-term individual health and how do you minimise radiation health risks from their use? Take back control. Tell people whom you care about. Download the free 54 tips on how to minimise your radiation exposure at www.RadiationRescue. com.au, order your own radiation meter to find the hotspots or phone 1300 436 628 for practical information.

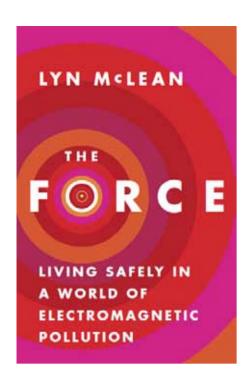


Robyn Wawn is a seasoned businesswoman who now heads Radiation Rescue which she started in 2010 to alert people to the health effects of manmade radiation devices.

how to detect radiation hotspots and minimise personal exposure. She believes most people are oblivious to the long-term health risks of chronic use of wireless technology and electromagnetic over-exposure. She lives in Kyneton, country Victoria. www.RadiationRescue.com.au Phone 1300 436 628 Copyright 2011 Robyn Wawn







s Hamlet told Horatio: "There are more things in heaven and earth than are dreamt of in your philosophy"1. This could be a slogan for much of what affects our lives today. We live almost constantly immersed in an electromagnetic 'soup', but most of us are unaware of it. In The Force, Lyn McLean renders this soup visible and exposes much of the misinformation and obfuscation perpetrated by those with vested interests. She compares the current state of denial of adverse health impacts to the situation that for so long surrounded asbestos and tobacco.

Electromagnetic radiation (EMR) is invisible, odourless, tasteless and 'touchless'. If it causes ill health it can be difficult to pin down as the cause. However, once data is gathered for a large number of people, statistical analysis implicates EMR in increased incidents of cancer, fatigue, behavioural changes, mood changes and reduced mental clarity. EMR is produced by every electrical and electronic device, electrical wiring and switches, and its prevalence is increasing.

Lyn McLean has produced an important book, which hopefully will make more people aware of the dangers and what we can do to minimise the effects that EMR may have on our health. For those who know little or nothing about EMR, she starts the book with explanations of what it is, how it is produced and how its production is regulated or fails to be adequately regulated. While Lyn McLean is an Australian researcher and writer and she gives preferential treatment to the situation in Australia, she also quotes extensively from overseas research and regulatory and industry situations.

The Force: living safely in a world of electromagnetic pollution

ELECTROMAGNETIC RADIATION (EMR) IS INVISIBLE, ODOURLESS, TASTELESS AND 'TOUCHLESS'. STATISTICAL ANALYSIS NOW IMPLICATES EMR IN INCREASED INCIDENTS OF CANCER, FATIGUE, BEHAVIOURAL CHANGES, MOOD CHANGES AND REDUCED MENTAL CLARITY. EMR IS PRODUCED BY EVERY ELECTRICAL AND ELECTRONIC DEVICE, ELECTRICAL WIRING AND SWITCHES, AND ITS PREVALENCE IS INCREASING.

A REVIEW BY DAAN SPIJER OF THE BOOK BY LYN MCLEAN

More than one quarter of the book is about the health implications of exposure to EMR. The author methodically goes through what is known about the mechanisms by which EMR affects living organisms and what is postulated. Much of the research done by the mobile phone industry, for instance, has concentrated on the heating effect of mobile phones on biological tissue (not always alive) and has ignored the effects it may have at a cellular or other level. There is growing, independent research that EMR from mobile phones and other devices can disrupt proteins, hormones, neural processes, even gene expression and other components and processes of living organisms and that the effects are cumulative. Also, the heating effect is often made less of by averaging it over the total body weight of a person. As Lyn McLean points out, this is akin to quoting the effect a candle flame has on a finger as the average increase in body temperature when the finger is held in the

The author also deals with other devices and equipment we use and have around us, such as cordless phones, computers, televisions, switching equipment, transformers and high-tension transmission lines. She gives many examples of the way technology which produces EMR is burgeoning; for instance the school in the USA that has 304 mobile phone antennas located within 400 metres of the campus: and that in some countries there are more mobile phones in use than there are people. She further voices concern that children seem particularly susceptible to the effects of EMR with, for example, statistically significant increased instances of leukaemia in children who live in the vicinity of high tension transmission lines, compared with those who live away from them.

As mere consumers, we rely on governments and regulatory authorities to keep us safe, especially when the potential dangers we face are far from THE FORCE:
LIVING SAFELY
IN A WORLD OF
ELECTROMAGNETIC
POLLUTION
LYN MCLEAN
SCRIBE 2011
ISBN: 9781921640292
\$35
400 PP

obvious. Unfortunately, as so often is the case, the safety regulations relating to mobile phone and mobile phone towers are heavily influenced by the industry and are, according to Lyn McLean and many engineers and scientists, too lax.

The layperson has very little to base choices and decisions on – unlike with other consumer items, where many inherent and potential dangers relating to their use are clear. The author recommends strongly that no-one, and especially no children or teens, should sleep with a mobile phone or cordless phone under their pillow or next to their bed; and there are other devices that should not be anywhere near where we sleep.

One argument often used to counter concerns about adverse effects of EMR is that there is no known mechanism by which EMR can affect those exposed to it. This is a spurious argument – the fact that something cannot be explained does not make it disappear. In fact, since the book was published, there has been research published that shows that electric fields (a component of EMR) has an effect on the way nerves function2. Earlier research points to the effects of microwaves on the folding of proteins3.

Although Lyn McLean is an advocate for more stringent and much clearer regulation and the dissemination of better and more honest information about EMR, this book is not a one-sided polemic. She appears fair in her examination of the health data and the regulatory situation, criticising or praising as appropriate, although she points out that the situation is heavily skewed in favour of industry. Because we are going to be living in this soup for a long time, and the soup will definitely get thicker before it is, hopefully, eventually watered down, Lyn McLean also devotes a large part of the book to information on reducing our exposure to EMR, through lifestyle changes and changes in our homes and workplaces.

As a result of the levels of EMR all around us, many people are becoming ill or dying unnecessarily, because something can be done about the causes. This book is an important source of information, data and advice to allow each of us to be better equipped to make choices if we feel sufficiently motivated. It contains many illustrations, tables and graphs to support what is known from research, as well as extensive lists of current regulations and recommendations relevant to Australia and many other countries. There is also a useful index.

As with so many controversies surrounding things we take for granted, we may need a wake-up call and then assistance in navigating our way. The Force fulfils all these requirements and should be read by everyone: layperson, regulator, scientist, teacher, student, parent, researcher, politician, journalist ... everyone.

Hamlet, Act 1, Scene 5, William Shakespeare. see Nature Neuroscience, 14, 217-223; 2011 (www.nature.com/neuro/journal/v14/n2/abs/ nn.2727.html) see in PubMed: www.ncbi.nlm. nih.gov/pubmed/11088227

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