

Out of Sight — But Not Out of Mind

by Lyn McLean

We protect them from harmful chemicals, we teach them about stranger danger, we lather them in sunscreen and we fence backyard pools for safety. Every day we take precautions that will help protect our children. But how much do we know about protecting them from electromagnetic radiation?

Electromagnetic radiation (EMR) is part and parcel of the power system; invisible radiation that is emitted by power lines, electrical wiring and all electrical appliances. For years controversy has surrounded the question of whether this radiation can harm our health, with scientists producing evidence both for and against any effect.

Recently however, strong evidence has emerged to suggest that very low levels of this radiation are, indeed, a risk. Last May, the esteemed British epidemiologist, Sir Richard Doll (the man who established the link between smoking and lung cancer) produced an authoritative report that examined the results of a number of recent studies on children living in high fields from electrical sources. It concluded, "Taken in conjunction they suggest that relatively heavy average exposures of 0.4 μ T or more are associated with a doubling of the risk of leukaemia in children under 15 years of age."



This is a tremendously low level of exposure. In Australia it is equivalent to 4 milligauss (mG) which is just a fraction of the 1000 mG allowable under current Australian guidelines.

Sir Richard Doll is not the only scientist to make the connection between EMR and leukaemia. Towards the end of 2000 two studies appeared which found a similar connection. Dr Sanders Greenland found that children exposed to 3 mG or more had more than one and a half times the normal risk of leukaemia and Dr Anders Ahlbom found that children exposed to 4 mG or more had double

the rate of leukaemia. In March 2001 Dr Joachim Schuz found that children sleeping in fields of just 2 mG or more had an increased risk of leukaemia. This is just a sample of the studies that have found potential health risks.

As a result of findings such as these, a number of international authorities have recognised the cancer risk from power lines. In June last year the International Agency for Research on Cancer classified low frequency magnetic fields as "possibly carcinogenic" to humans.

Leukaemia is not the only problem to be associated with EMR. Many studies have found that being exposed to high levels of radiation from the power system is linked with an increased risk of other cancers (including breast cancer), heart problems, reproductive problems, changes to brain function, effects on the nervous system (including depression), neurodegenerative diseases (such as Alzheimer's disease and Lou Gehrig's disease), learning problems, sleep disruption, depression of the immune system and effects on hormones.

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In addition to the scientific evidence, there is other evidence that radiation from the power system is impacting adversely on the community. In my experience with the EMR Association of Australia, I've encountered many homes in which people are exposed to levels of radiation much higher than the 3-4 mG in the studies mentioned above, often as a result of sleeping close to a meter box or an operating appliance (such as a digital alarm clock), or sleeping above metal water pipes that are conducting current. In my experience, people living or working in high levels of EMR are often sick.

I have met a woman with excruciating headaches, sleeping on the other side of the wall from a computer,

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whose symptoms were relieved when she moved the computer downstairs. I have spoken to a mother whose son was suffering from lethargy and low immunity and whose health improved enormously after the fields in his bedroom were reduced. I have reports from people whose energy and well-being improved after the fields in their office were reduced. I know of a young woman whose severe and life-long skin problems cleared up as soon as she moved away from home – and returned again whenever she visited her parents for a holiday. Not surprisingly, the fields in her bed were extremely high. A young girl's fatigue disappeared when her halogen lamp (which emitted around 300 mG) was moved away from her desk. An author's writer's block disappeared when the fields in her house were reduced.

There are countless stories of people living or working in high fields being unwell; and, thankfully, many reassuring stories from people who recovered health or energy after they reduced their exposure.

To reduce your family's exposure to EMR is to apply the same sort of precautions to electricity that we apply to so many other aspects of our life. It is a common sense approach that is as valid as buckling up a seatbelt or putting on a sunhat.

Keep your distance

The first thing to remember is that the fields from any power line or appliance drop off rapidly with distance, so the further away from the source you are, the safer you are. This means that you can reduce your exposure by making sure appliances that generate high fields are kept well away from places where you spend long periods of time. You can:

- Locate furniture to avoid hotspots, avoid locating the bed on the other side of the wall from a computer,

television, meter box or off peak hot water system – all of which produce substantial fields.

- Make sure children watching television sit at least three metres from the screen.
- Keep the computer VDU as far away from you as possible when you work.
- Keep electrical appliances well away from the bed where you spend so much of your time. Keep digital alarm clocks at least a metre away from the bed (I put mine in the bathroom. At least it forces me to actually get up when it goes off!), check that your bed is not located above a water pipe that is conducting a high field, avoid locating a night light or a baby monitor near a child's bed.
- Avoid standing close to appliances that are turned on (such as the oven or dishwasher), or have a digital clock display (such as those on microwaves) which emits high fields while you are working for long periods in the kitchen.

Time is of the essence

The second point to keep in mind is that the amount of exposure you receive depends on how much time you spend in a field. So while hair driers, for instance, give off fairly high fields, they are used for only relatively short periods of time. In places where you spend long periods of time – like the bed, your favourite lounge chair or the study – it's important to keep fields as low as possible. It stands to reason, too, that you can reduce your exposure by limiting the amount of time you spend using appliances. You can:

- Reduce your use of unnecessary appliances, limit the amount of time children spend watching TV, using the computer and playing electronic games.
- Avoid locating a bed or a workstation over a fluorescent light in the ceiling of the storey below.
- Avoid sleeping on an electric blanket that's turned on all night. If you do use an electric blanket to warm the bed, turn it off before going to bed and make sure you remove the plug from the socket.
- Turn off appliances that are not in use.

Reducing exposure to EMR is not always an arduous or expensive exercise. It can be as easy as limiting children's time watching TV or moving the digital clock away from the bed. In some cases, such as where water pipes are conducting high fields, you may need the assistance of a professional plumber (who can eliminate conductivity by inserting a plastic segment in the pipe).

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Electromagnetic radiation is an invisible assailant and, as such, is not always recognised. It reaches into every household and touches every family, sometimes harshly and without their knowledge. Just because it is out of sight, however, does not mean that it must necessarily be out of mind. By simply being aware of EMR and taking simple steps such as those outlined above, you can help make your home a healthier environment for your family.

References: "NRPB Advisory Group on Non-ionising Radiation Power Frequency Electromagnetic Fields and the Risk of Cancer", 6 March 2001.

Greenland, S. et al, *Epidemiology* 11(6), 2000.

Ahlbom et al, *British Journal of Cancer* 83 pp 692-8, 2000

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EMRAA website <ssec.org.au/emraa>

Lyn McLean is author of 'Watt's the Buzz', a book on EMR published by Scribe this month.

For further information, or to arrange an EMR survey of your home in Sydney or Melbourne, contact the EMR Association of Australia on (02) 9523 4750 or (02) 9545 3077.